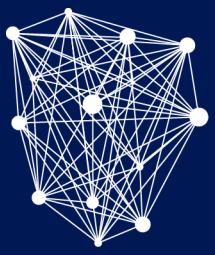

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THE IMPACT OF ORGANIZATIONAL STRUCTURE ON INTERNAL AND EXTERNAL INTEGRATION

AN EMPIRICAL, CROSS-REGIONAL ASSESSMENT

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GUANYI LU • RICHARD PETERS

Abstract: We examine the effects of organizational structure on cross-functional integration, supplier integration, and customer integration, and we assess whether such effects vary by geographical region. Specifically, we investigate the impact of centralization, formalization, and complexity on both internal (cross-functional) and external (supplier, customer) integration. Relationships are examined across Western and East Asian environments using data collected from 238 manufacturing plants in eight countries. We find that structural features have differing impacts on cross-functional, supplier, and customer integration, and these effects vary across geographical regions.

Keywords: Supply chain management, supply chain integration, organizational structure, organization design, cross-cultural research

Over the past two decades, manufacturers have shifted their focus from managing and improving the efficiency of internal organizational processes to the simultaneous optimization of both intra- and inter-organizational relationships. This shift in emphasis means that manufacturers today are not only interested in achieving better cross-functional integration but supplier and customer integration as well (Frohlich & Westbrook, 2001). In this study, we first seek to address the question of whether choices about organizational structure facilitate or impede integration within the plant and with suppliers and customers. We focus on the impact of three key structural variables: centralization, formalization, and complexity. Furthermore, we examine whether structural influence on internal and external integration varies by geographical region. Specifically, we include in our sample firms in East Asia (Japan and South Korea) and in the West (United States and Europe) in order to determine if cultural and economic factors alter the impact of structure on integration.

THEORY AND HYPOTHESES

Internal and external integration is required for organizational efficiency and effectiveness (Lawrence & Lorsch, 1967), and it stems from information and knowledge sharing, relationship intimacy, and cooperative activity (Schoenherr & Swink, 2012; Taylor & Helfat, 2009; Teixeira, Koufteros, & Peng, 2012). Integration is a behavioral outcome that is directly related to organizational performance (Turkulainen & Ketokivi, 2012, 2013). Cross-

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functional integration enhances a plant's problem-solving capabilities, while integration of suppliers and customers allows a plant to combine different capabilities, share fixed costs, and gain economies of scale (Kanter & Myers, 1991).

Centralization

Centralization is a fundamental dimension of organizational structure (Weber, 1947). In highly centralized organizations, decision-making authority resides in members at the apex of the organization. However, it is important to distinguish between centralization at the corporate (macro) level and centralization at the plant (micro) level (Adler, 2012; Aiken & Hage, 1966). Corporate-level decisions commonly revolve around the control and coordination of internal efforts to more effectively leverage opportunities created by economies of scale, synergy, and consolidation. Those decisions not only benefit the entire enterprise but also the plants subsumed within it. Facilitating internal integration typically requires changes to organizational processes and major investments in information technologies (Galbraith, 1973). Plant-level functional managers are more likely to support those efforts when they are driven by well-conceived corporate plans, as opposed to those created by a plant-level planning group. Thus, the benefit of macro centralization to lower-level internal integration is derived from its positive influence on plant coordination and control.

Beyond internal integration, macro centralization may positively benefit external integration. The adoption and implementation of supplier and customer integration can be perceived as a radical innovation, which demands that the locus of decision making be concentrated at higher levels in order for the innovation to be underwritten and accepted by the entire organization (Koufteros & Vonderembse, 1998). Integration with external partners requires significant resources, both tangible and intangible, and clout that can only be authorized and mustered at higher levels of corporate management. For example, integrating with customers can require the adoption of a new information technology solution or the effective participation of customers in product development, both potentially significant shifts from the status quo. Similarly, organizational members may be asked to share their knowledge and information with suppliers, and suppliers in turn may have active participation in product development. Supplier involvement in product development requires multi-functional buy-in and, depending on the extent of integration, may lead to a loss of responsibility by organizational members (Koufteros, Cheng, & Lai, 2007). In such instances, suppliers and customers may be perceived as threats, and to replace this mindset with a cooperative one is likely to necessitate legitimate power. The cost, unfamiliarity, and organizational sacrifices that accompany external integration thus require authority, influence, and oversight best vested at the organizational apex. Decision makers at the corporate level can take ownership of external integration, overcome barriers to resistance, and push through changes if necessary.

Hypothesis 1a. Macro centralization is positively related to cross-functional integration.

Hypothesis 1b. Macro centralization is positively related to customer integration.

Hypothesis 1c. Macro centralization is positively related to supplier integration.

In contrast to macro centralization, we hypothesize that the centralization of operational decision making at the plant level (micro centralization) can impede information processing and cooperation (Galbraith, 1974). In a plant where operational decision rights are highly centralized, employees have to wait for decisions to be made at a point far from where control and coordination problems actually occur. Therefore, their focus is on managing vertical relationships rather than the horizontal relationships associated with internal integration. Furthermore, information distortion is likely to occur as information is passed through intermediate supervisors and managers. For these reasons, we expect centralization of operational decision making to be negatively related to internal (cross-functional) integration.

This loss of discretion, authority, intimacy, and time is appreciably increased with respect to customer and supplier integration. The majority of the inter-organizational contact points in day-to-day operations are lower-rank employees and line managers not senior

plant managers. These employees tend to be the domain experts, and they know whom to talk to and where to gather information to make decisions. For employees who directly interact with suppliers or customers, lack of decision-making authority can discourage them from proactively solving problems. This leads to customers and suppliers feeling isolated or even forgotten. Thus, at the micro level, any benefit from improved coordination and control is likely to be outweighed by losses due to lack of trust and cooperation that micro centralization can engender. We expect that micro centralization will be negatively related to cross-functional, customer, and supplier integration:

Hypothesis 2a. Micro centralization is negatively related to cross-functional integration.

Hypothesis 2b. Micro centralization is negatively related to supplier integration.

Hypothesis 2c. Micro centralization is negatively related to customer integration.

Formalization

Formalization – formal policies and rules – reduces uncertainty and goal incongruence among functional managers (Hage 1965; Koufteros & Vonderembse 1998; Pugh et al., 1968), and it helps them to direct their focus, motivation, and energy on what the firm's strategy prescribes (Adler & Borys, 1996; Fredrickson, 1986). By essentially 'codifying' strategy (Lin & Germain, 2003), formalization acts as a catalyst or precursor for internal cooperation and communication. It does so by facilitating the dissemination of plans and objectives to external stakeholders and by enhancing knowledge and information integration internally (Grant, 1996). Explicitly articulating strategic intent helps organizational members make sense of the strategy, thereby contributing to consistency and unity of direction (Bourgeois & Brodwin, 1984). Formalization can also signal to employees what top managers value and care about, thus enabling plant employees to devote their resources toward a common goal.

Similar to centralization, formalization is not itself integration but rather acts as a catalyst to promote the level, frequency, and quality of communication and cooperation inherent in integration. Those attributes and consequences of formalization may be expected to benefit integration with external partners, especially customers and suppliers. Formalization can serve as a sense-making process for suppliers and customers alike, allowing them to harmonize their strategies and processes with those of the focal firm. Knowing explicitly the firm's goals, intentions, and plans can reduce ambiguity in the minds of both customers and suppliers. However, the benefit of clarity might be outweighed by the loss of intimacy and flexibility a highly formalized structure breeds. As Moorman, Deshpande, and Zaltman (1993) found, formalization inhibits cooperation and trust, especially when the basis for trust and cooperation is located in the interpersonal relationships between exchange partners such as suppliers and/or customers. Because formalization often compels both managers and employees to comply with written policies and regulations ("do it by the book"), it may promote rigidity and inflexibility that can hurt integration with external partners (Fox, 1974; Dwyer, Schurr, & Oh, 1987). Much like centralization, suppliers and customers may find themselves interacting with policies rather than their firm partners, which is frustrating, especially in volatile and fluid environments. Thus, while it may promote internal integration, we hypothesize that formalization will impede external integration:

Hypothesis 3a. Formalization is positively related to cross-functional integration.

Hypothesis 3b. Formalization is negatively related to customer integration.

Hypothesis 3c. Formalization is negatively related to supplier integration.

Complexity

Complex organizations are composed of many diverse, interrelated parts. In general, a higher level of complexity makes internal integration more difficult due to a greater division

between labor and management, and greater differentiation across functional departments (Lawrence & Lorsch, 1967). In addition, complexity hinders the ability of organization members to recognize and act upon issues of strategic significance. Information barriers and disparate, parochial interests are all potential negative side effects of structural complexity, and they present significant challenges to the pursuit of collaboration, knowledge sharing, and consensus in decision making (Mintzberg 1979; Koufteros et al., 2007; Nahm, Vonderembse, & Koufteros, 2003).

With respect to vertical differentiation, flatness, the number of hierarchical levels in an organization, influences integration. A flatter organizational structure is less complex, as it contains fewer organizational layers through which information must travel to reach decision makers (Koufteros et al., 2007; Nahm et al., 2003), making communication and coordination faster and easier (Hull & Hage, 1982). Flatness also increases the number of actors at each level, thereby increasing the number of potential boundary spanners between an organization and its suppliers and customers (Kostova & Roth, 2003; Tushman & Scanlan, 1981). Thus, when a problem must be jointly solved by the focal plant and its partners, the employees responsible for solving the problem can interact directly with those who experience the problem and therefore may have a clearer idea about the nature of the problem. As such, the flatter organizational structure is expected to facilitate external integration:

Hypothesis 4a. Vertical differentiation as measured by flatness is positively related to cross-functional integration.

Hypothesis 4b. Vertical differentiation as measured by flatness is positively related to customer integration.

Hypothesis 4c. Vertical differentiation as measured by flatness is positively related to supplier integration.

Whereas vertical differentiation is manifested in hierarchical levels of management, horizontal differentiation is characterized by the diversity of functions and specialty skill sets that are spread across an organization. In this study, we focus on horizontal differentiation at both employee and managerial levels. At the employee level, horizontal differentiation promotes variety in employee knowledge and skill sets as well as an appreciation for the multi-functionality of processes and operations. Prior research suggests that diverse skill sets and cross-functional awareness enable both information sharing and knowledge creation (Grant, 1996; Huang, Kristal, & Schroeder, 2010). For instance, multi-skilled shop floor workers can better diagnose production problems. Further, they possess greater technical knowledge and vocabulary that enables them to more effectively interact and cooperate with workers in other production areas.

Similar arguments can also be applied at managerial levels. Managers who have a broad range of experiences and skills are better equipped to collaborate across functional and departmental lines. The exposure to multiple functions within a firm that managers receive from structural processes, like job rotation, is an important facilitating factor to internal integration. A manager who gains experience in a broad set of organizational units is in a better position to interact with personnel from any organizational unit. Such a manager understands the barriers impeding communication and collaboration internally and externally. Further, by working in a variety of functional areas, managers build relationships that garner social capital (Adler & Kwon, 2002).

External integration can also benefit from horizontal differentiation and the variety and flexibility it engenders. Customers and suppliers often have needs that transcend functional boundaries and require cross-functional accommodation. Employees and managers who operate in structures that promote skill variety and cross-functional engagement are expected to be more effective at dealing with those external demands. Also, experience with intra-organizational boundary spanning may increase organization members' knowledge sharing and cooperation across sub-groups and stimulate their desire to establish more external relationships. Tushman and Scanlan (1981) note that boundary spanners often engage in multiple network relationships, both internal and external, so what begins internally can

impact external integration.

Hypothesis 5a. Horizontal differentiation is positively related to cross-functional integration.

Hypothesis 5b. Horizontal differentiation is positively related to customer integration.

Hypothesis 5c. Horizontal differentiation is positively related to supplier integration.

Moderating Role of Geographical Region

We expect that employees working in diverse regions will respond differently to integrative elements of organizational design due to fundamental differences in their views of work and community. Both the sociology and international business literatures have examined cross-regional differences and their effects on organizational life (Deal & Kennedy, 1982; Hofstede, 1980). Organizational structure is not immune to these effects; regional differences in culture, political systems, and economic development can have pervasive effects on the organization (Rhody & Tang, 1995). Since the impact of geographical region on structure and integration is relatively untested, we chose not to specify particular cultural, economic, and/or institutional factors as possible moderators. Instead, we adopt an exploratory approach and hypothesize that the relationships depicted in our model will be influenced by differences across firms located in the West and firms located in East Asia:

Hypothesis 6. Relationships between organizational structure elements and integration types will differ across plants located in the West and East Asia.

METHOD

Our study used secondary data collected as part of the third wave of the High Performance Manufacturing (HPM) study (Schroeder & Flynn, 2001). The HPM study collected data on a broad range of variables related to manufacturing plants' operating environment, operations strategy, operations management practices, organizational structure, technology, and performance. Data were collected from 2005-07 from 238 manufacturing plants located in eight countries: Austria, Finland, Sweden, Germany, Italy, United States, Japan, and Korea. Three industries are represented in the data set: electronics, machinery, and transportation equipment and components. These industries were selected because they account for a significant proportion of the manufacturing industries in the countries where the survey was administered. Table 1 presents demographic profiles of the plants.

Table 1. Demographic profiles of the manufacturing plants

	Country							
Industry and Country Counts	**Finland (n=30)**	**Sweden (n=24)**	**Germany (n=41)**	**Italy (n=27)**	**Austria (n=21)**	**Japan (n=35)**	**Korea (n=31)**	**United States (n=29)**
Electronics	14	7	9	10	10	10	10	9
Machinery	6	10	13	10	7	12	10	11
Transportation Components	10	7	19	7	4	13	11	9
Demographics by Country	**Finland**	**Sweden**	**Germany**	**Italy**	**Austria**	**Japan**	**Korea**	**United States**
Annual Sales Volume ($000)	33,505	482,374	64,143	30,802	35,005	325,792	369,860	153,097
Median Total # of Employees	509	488	815	354	424	1,485	1,946	1,149
Average Life Cycle of Products (years)	10.33	9.05	10.05	7.73	8.54	10.56	7.32	4.10
Average % of Customized Products	88.58	88.64	86.79	62.41	83.86	73.13	90.05	45.18

Demographics by Industry	**Across Industries**	**Electronics**	**Machinery**	**Transportation Equipment**
Annual Sales Volume ($000)	82,900	70,000	116,401	92,000
Median Total # of Employees	782	708	608	810
Average Life Cycle of Products (years)	9.04	7.65	7.71	12.07
Average % of Customized Products	75.04	75.15	71.09	86.04

The research design of the HPM study mitigates common method bias (Podsakoff & Organ,

1986; Podsakoff et al., 2003). Multiple informants scored the measurement items used in this study. The plant manager, plant superintendent, inventory manager, human resource manager, process engineers, supervisors, and multiple shop-floor workers responded to items measuring organizational structure variables at each plant. Respondents to items related to internal and external integration at each plant included the plant manager, plant superintendent, quality manager, inventory manager, a process engineer, a supervisor, and multiple shop-floor workers. Pertinent respondents across managerial ranks and labor were targeted in order to generate a comprehensive and accurate depiction of organizational processes. For items with multiple informants, analysis of variance compared the multiple responses within a plant against responses of respondents in other plants. We found that cross-plant differences were significantly higher than within- plant differences, as evidenced by F-statistics ($p<0.01$). These results allowed us to generate aggregate plant-level data for each item by averaging responses from different informants. Harman's one-factor test (Podsakoff & Organ, 1986) was also employed to examine potential common method bias. To perform Harman's test, all of the scales were entered into a single exploratory factor analysis to determine if a single factor can account for the majority of the co-variance among the various measures. The results indicate that no single dominant factor emerged.

The literature frequently cites a 60 percent response rate as reasonable assurance against non-respondent bias (Bailey, 1978). The HPM data has a 65 percent response rate and compares favorably with other recent survey-based studies (e.g., Drnevich & Kriauciunas, 2011; Terziovski, 2010; Zhou & Wu, 2010). Thus, non-response bias does not appear to be a major concern.

For the organizational structure and integration items, respondents marked the extent to which they agree with the respective statement on a seven-point Likert-type scale anchored by (1) strongly disagree and (7) strongly agree. Drawing on the extant literature, we measured dimensions of organizational structure using six multi-item scales. Table 2 presents the measurement items along with construct definitions. Measures for macro centralization rely on Aiken and Hage (1966). The measurement items for micro centralization are identical to those used by Huang et al. (2010) to operationalize centralization. Formalization is measured by the explicitness of the firm's strategy and planning (Miller, 1987, 1992). Vertical differentiation is operationalized by measures of the flatness of organizational structure, adopting the same items used by Turkulainen and Ketokivi (2012). Our measure of employee cross-training is adopted from Huang et al. (2010) who deployed the same data set to examine the effects of organization design on mass customization capability. To our knowledge, the items we use to measure managerial job rotation have not been used in prior studies.

Cross-functional integration is operationalized through six indicators adopted from Turkulainen and Ketokivi (2012). Four other indicators are used to address supplier integration while five indicators are employed to measure customer integration.

Table 2. Measurement items and factor loadings

CONSTRUCTS	Std. loading	T-Value
MACRO CENTRALIZATION IM, SP, PS[1]		
(the degree to which authority and decision making power in the organization is concentrated at the corporate level)		
Purchasing of common materials is coordinated at the corporate level.	0.46	---[2]
Our corporation implements ordering and stock management policies, on a global scale, in order to coordinate distribution.	0.90	5.85
Our corporation performs aggregate planning for plants, according to our global distribution needs.	0.65	6.17
MICRO CENTRALIZATION (Huang et al., 2010) DL,HR,SP[1]		
(the degree to which authority and decision making power in the organization is concentrated at the plant level)		
Even small matters have to be referred to someone higher up for a final answer	0.90	---[2]
Any decision I make has to have my boss's approval.	0.85	16.03
There can be little action taken here until a supervisor approves a decision.	0.75	13.58
FORMALIZATION (Miller, 1987, 1992) PE, PM, PS[1]		
(the degree to which rules, procedures, instructions, and communications are documented and enacted)		
Our plant has a formal strategic planning process, which results in a written mission, long-range goals and strategies for implementation.	0.90	---[2]
This plant has a strategic plan, which is put in writing.	0.83	15.57
Plant management routinely reviews and updates a long-range strategic plan.	0.73	13.01
The plant has an informal strategy, which is not very well defined (reverse item).	0.60	9.95
VERTICAL DIFFERENTIATION (FLATNESS) (Turkulainen & Ketokivi, 2012) HR, SP, PS[1]		
(the number of hierarchical levels within the organization)		
Our organization structure is relatively flat	0.85	---[2]
There are few levels in our organizational hierarchy.	0.89	17.34
Our organization is very hierarchical (reverse item).	0.71	12.47
Our organizational chart has many levels (reverse item).	0.84	16.09
HORIZONTAL DIFFERENTIATION (EMPLOYEE CROSS-TRAINING) (Huang et al., 2010) HR, SP, PS[1]		
(the degree to which employees possess diverse knowledge and skill sets)		
Employees at this plant learn how to perform a variety of tasks.	0.90	---[2]
Employees are cross-trained at this plant, so that they can fill in for others, if necessary.	0.78	13.54
Our employees receive training to perform multiple tasks.	0.76	13.12
HORIZONTAL INTEGRATION (MANAGERIAL JOB ROTATION) HR, PM, PS[1]		
(the degree to which managers possess diverse knowledge and skill sets)		
Managers are frequently rotated to broaden their skill level.	0.93	---[2]
Frequent rotation of managers between functions is normal practice in this plant.	0.89	16.19
Most of the managers here have had positions in more than one function.	0.64	11.08
INTERNAL (CROSS-FUNCTIONAL) INTEGRATION (Turkulainen & Ketokivi, 2012) PE, PM, PS[1]		
(the degree to which different parties behave as a unified whole without being merged into a single organizational grouping)		
The functions in our plant work well together	0.85	---[2]
Our plant's functions coordinate their activities.	0.75	13.66
Our plant's functions work interactively with each other.	0.81	15.42
The functions in our plant are well integrated	0.82	15.76
Problems between functions are solved easily, in this plant.	0.77	14.05
Functional coordination works well in our plant.	0.82	15.73
SUPPLIER INTEGRATION[1] (Sakakibara et al.,1997) DL, IM, QM[1]		
(the degree to which the firm and its suppliers share production information, engage in open communication, and involve suppliers in new product development and quality improvement)		
We actively engage suppliers in our quality improvement efforts	0.80	---[2]
We maintain cooperative relationship with our suppliers	0.67	9.59
We help our suppliers to improve their quality.	0.75	10.65
Our key suppliers provide input into our product development projects.	0.59	8.50
CUSTOMER INTEGRATION[1] (Naor et al., 2008), DL, QM, SP[1]		
(the degree to which the firm and its customers share information, engage in open communication, and involve customers in new product development and quality improvement)		
Our customers involve us in their quality improvement efforts.	0.55	---[2]
We frequently are in close contact with our customers.	0.74	7.87
Our customers give us feedback on our quality and delivery performance.	0.81	8.16
Our customers are actively involved in our product design process.	0.58	6.72
We strive to be highly responsive to our customers' needs.	0.70	7.62

[1]Informants: DL = direct labor (shop floor worker), HR = human resource manager, IM = inventory manager, PE = process engineer, PM = plant manager, PS = plant superintendant, QM = quality manager, SP = supervisor;
[2]Anchor Indicators;
Fit Indices: Chi-Square (*df*) = 929.59 (524), *Chi-Square/df*= 1.77, *IFI*=0.92, *NNFI*=.91, *CFI*=.92, *RMSEA*=.05, *RMR*=.06

RESULTS

Using a covariance matrix as input, we specified Confirmatory Factor Analysis (CFA) via LISREL 8.51 to assess the proposed measurement model (see Table 2). The CFA model

has acceptable model fit as indicated by the fit statistics (χ^2/df =1.77, CFI=.92, IFI=.92, NNFI=.91, RMSEA=.05, RMR=.06). With one exception, all item-factor loadings are greater than .50 and are significant at the .01 level. We assessed discriminant validity using the χ^2 difference test (Bagozzi & Phillips, 1982). A significant χ^2 difference indicates the uniqueness of any two scales being tested. Each pair-wise χ^2 difference test is significant at the .01 level, providing evidence of discriminant validity. Each of the composite reliabilities for the focal constructs is greater than the recommended threshold of .70. Overall, the constructs appear to be reliable and valid.

Hypothesis Tests

We specified a structural model to examine the proposed hypotheses. Model fit was evaluated using LISREL 8.51 via several criteria such as RMSEA, χ^2/df, CFI, IFI, and NNFI. Structural paths were examined for statistical significance based on t-tests and respective p-values. In order to examine whether relationships between organizational structure dimensions and internal/external integration vary by geographical region, we utilized multi-group analysis. Table 3 reports means, standard deviations, and correlations of all variables. Before testing the structural model, we examined the distribution of each variable via measures of kurtosis and skewness, along with visual inspections. Each variable appeared to have an approximately normal distribution.

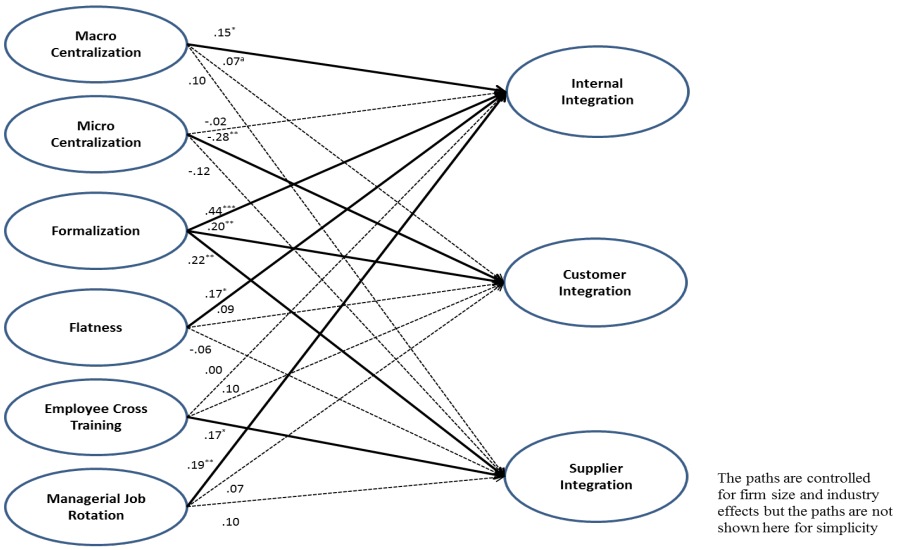
Table 3. Descriptive statistics and correlation matrix

				Correlations												
Construct	Mean/ Item	Std Dev./ Item	Reliability	1	2	3	4	5	6	7	8	9	10	11	12	13
1.Macro Centralization	4.76	1.10	.72	1												
2. Micro Centralization	3.27	.97	.88	-.012	1											
3. Formalization	5.26	1.03	.85	.268**	-.210**	1										
4. Flatness	4.57	1.09	.90	.089	-.560**	.154*	1									
5. Employee Cross-Training	5.22	.79	.86	.249**	-.430**	.356**	.416**	1								
6. Managerial Job Rotation	3.95	1.22	.87	.116	-.005	.289**	-.071	.197**	1							
7. Internal Integration	5.29	.75	.86	.304**	-.154*	.484**	.201**	.284**	.277**	1						
8. Customer Integration	5.32	.72	.87	.140*	-.292**	.282**	.260**	.225**	.063	.305**	1					
9. Supplier Integration	5.16	.67	.80	.232**	-.131*	.331**	.093	.265**	.179**	.420**	.346**	1				
10. Firm Size	2.00	.66	NA	.172**	.107	.239**	-.103	.073	.377**	.087	.084	-.093	1			
11. Electronics				-.028	.018	-.170**	-.058	-.034	-.079	-.061	-.132*	-.227**	.027	1		
12. Machinery				.050	-.086	.000	.045	.078	.035	.037	.054	.006	-.108	-.497**	1	
13. Transportation				-.022	.068	.170**	.013	-.044	.044	.024	.078	.220**	.081	-.502**	-.502**	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Figure 1 presents the hypothesized structural model and respective p-values. We controlled for firm size (dollar sales in current year) as well as industry because the extant literature posits that variation in our endogenous variables can potentially be attributed to differences in firm size and industry rather than the effects of focal variables. Table 4 presents completely standardized coefficients along with respective significance levels and t-values. We assessed the degree of multicollinearity using several diagnostics and failed to identify any worrisome patterns.



[a] Completely Standardized Coefficients, * Significant at .05, ** Significant at .05,, *** Significant at .05,

Fig 1. Research Framework

The fit indices indicate that the structural model exhibits a good data-to-model fit (χ^2=1142.99, df = 664, χ^2/df=1.76, CFI=.93, IFI=.93, NNFI=.92, RMSEA=.05, RMR=.08). Next, we examined the path coefficients of the structural model for evidence against the hypothesized relationships. H1a predicts that macro centralization will have a positive relationship with cross-functional integration, while H1b and H1c suggest positive relationships with customer integration and supplier integration, respectively. The results support only H1a; the evidence indicates that centralization of decision making at the corporate level has a statistically significant positive relationship with internal integration (H1a, γ=.15, p<0.05). Hypotheses H2a-c posit that micro centralization will have negative relationships with internal as well as external integration. We found supporting evidence only for customer integration (H2b, γ=-.28, H1, p<0.01). Said differently, decentralizing decision making to the plant level appears to be associated with higher levels of customer integration.

Table 4. Structural model--overall and by region (Based on multi-group analysis)

	Overall		West (N=172)		East Asia (N=66)	
Path	γ Significance	t-value	γ Significance	t-value	γ Significance	t-value
Macro Centralization → Internal Integration	0.15*	2.21	0.17*	2.22	0.12	1.02
Macro Centralization → Customer Integration	**0.07a**	1.02	-0.08	-0.91	0.31*	2.31
Macro Centralization → Supplier Integration	**0.10**	1.28	0.17*	1.93	0.00	0.00
Micro Centralization → Internal Integration	-.02	-0.23	-0.03	-0.40	-0.15	-1.28
Micro Centralization → Customer Integration	**-0.28****	-3.02	-0.19*	-1.99	0.03	0.23
Micro Centralization → Supplier Integration	-0.12	-1.22	-0.12	-1.28	-0.21	-1.56
Formalization → Internal Integration	**0.44*****	6.08	0.39***	4.65	0.63***	5.89
Formalization → Customer Integration	0.20**	2.59	0.29**	3.13	0.18	1.32
Formalization → Supplier Integration	0.22**	2.64	0.21**	2.32	0.10	1.40
Flatness → Internal Integration	0.17*	2.00	0.15*	1.77	0.21*	1.71
Flatness → Customer Integration	0.09	.99	0.09	0.96	-0.04	-0.30
Flatness → Supplier Integration	-0.06	-0.58	-0.07	-.72	0.11	.77
Employee Cross-Training → Internal Integration	0.00	0.00	-0.01	-0.12	0.12	1.03
Employee Cross-Training → Customer Integration	0.10	1.13	0.02	0.21	-0.09	-0.65
Employee Cross-Training → Supplier Integration	0.17*	1.80	0.16*	1.64	0.25*	1.80
Managerial Job Rotation → Internal Integration	**0.19****	2.76	0.10	1.36	0.30**	2.69
Managerial Job Rotation → Customer Integration	**0.07**	.99	0.23**	2.64	-0.09	-0.70
Managerial Job Rotation → Supplier Integration	0.10	1.28	0.03	0.30	0.18	1.37
Firm Size → Internal Integration	-0.08	-1.28	-0.17	2.22	0.14	1.29
Firm Size → Customer Integration	-0.19**	-2.65	-0.11	-1.41	-0.20	-1.60
Firm Size → Supplier Integration	-0.01	-0.09	-0.03	-0.40	-.00	-0.01
Electronics → Internal Integration	0.03	.01	0.02	0.02	0.03	0.03
Electronics → Customer Integration	-0.17	-.03	-0.17	-0.14	-0.05	-0.04
Electronics → Supplier Integration	-0.07	-.01	-0.03	-0.03	-0.16	-0.13
Machinery → Internal Integration	0.00	.00	0.02	0.02	-0.06	-0.06
Machinery → Customer Integration	-0.04	-.01	-0.08	-0.07	0.21	0.17
Machinery → Supplier Integration	0.02	.00	0.04	0.03	-0.02	-0.02
Transportation → Internal Integration	-0.02	.00	-0.04	-0.04	0.02	0.03
Transportation → Customer Integration	0.10	.02	0.26	0.22	-0.14	-0.11
Transportation → Supplier Integration	0.05	.01	0.00	0.00	0.15	0.18

* p < 0.05, ** p < 0.01, *** p < 0.001, [a] Underlined and bolded coefficients are statistically different across regions at least at 0.05.

Fit Indices for Overall Model: χ^2(*df*)= 1142.99(664), χ^2/*df*= 1.76, *IFI*=0.93, *NNFI*=.92, *CFI*=.93, *RMSEA*=.05, *RMR*=.08

Formalization exhibits strong relationships with all three types of integration. Specifically, it is positively related to cross-functional integration (H3a, γ=.44, p<0.001), customer integration

(H3b, γ=.20, $p<0.01$), and supplier integration (H3c, γ=.22, $p<0.01$). It is the only explanatory variable that exhibits statistically significant relationships with all three integration variables. However, we anticipated that formalization would exhibit negative relationships with external integration. With respect to vertical differentiation, measured as flatness, we found support only for internal integration (H4a, γ=.17, $p<0.05$). We operationalized horizontal differentiation as employee cross-training and managerial job rotation. Employee cross-training demonstrated statistically significant relationships with supplier integration (H5c, γ=.17, $p<0.05$) while managerial job rotation only related to internal integration (H5a, β=.19, $p<0.01$).

Finally, firm size and industry were entered as control variables. Firm size has a statistically negative effect on customer integration (γ=-.21, $p<0.01$) while industry fails to manifest significant relationships with any of the three integration variables.

Hypothesis H6 proposed differential effects across Western and East Asian firms regarding relationships between elements of organizational structure and integration. The first relationships that are statistically different between the two groups are for the effect of macro centralization on customer integration ($\Delta\chi^2 = 25.07$, $p<0.000$) and macro centralization on supplier integration ($\Delta\chi^2 = 3.83$, $p<0.05$). Our findings indicate that for firms located in East Asia, macro centralization is more strongly related to customer integration, whereas for supplier integration Western firms derive more benefit from corporate-level decision making. This is an interesting contrast where the salience of the significance varies for customer versus supplier integration across the two regions.

The relationship between micro centralization and customer integration also varies by region ($\Delta\chi^2 = 8.51$, $p<0.003$), and further analysis {(effect size (γ= -.19 in the West vs. γ=0.03 in East Asia; t-value (1.99 in the West vs. 0.23 in East Asia)} suggests that the relationship is stronger in the West than in East Asia. Also, the relationship between formalization and cross-functional integration is significantly different across the two groups ($\chi^2 = 4.49$, $p<.036$). Though the relationship coefficients appear to be statistically significant for plants located both in the West and East Asia (t=4.65 in the West vs. t=5.89 in East Asia), the effect size for East Asian plants (γ=.39 in the West vs. γ=.63 in East Asia) is clearly larger, suggesting that the link between formalization and internal integration is more impactful for companies located in East Asia.

Finally, the relationship between managerial job rotation and both cross-functional integration and customer integration varies across the two geographic regions ($\chi^2 = 8.55$, $p<.003$ and $\chi^2 = 4.46$, $p<.035$, respectively). Interestingly, managerial job rotation is positively and significantly related to internal integration only for firms located in East Asia (γ=.30, t=2.69) while managerial job rotation is only related to customer integration for firms located in the West (γ=.23, t=2.64). Again, this provides some preliminary evidence that relationships between organizational structure and types of integration are influenced by regional differences.

Table 5. Differences in means across regions

Dependent Variable	Independent variables[1]	F	Sig.	Partial η^2	Mean for West	Mean for East Asia	Mean Difference
Macro Centralization	Region	.109	.741	.000	14.322	14.192	.131
Micro Centralization	Region	86.585	.000	.271	8.931	12.088	-3.157*
Formalization	Region	.296	.587	.001	21.129	20.853	.276
Vertical Differentiation (Flatness)	Region	55.061	.000	.191	19.380	15.452	3.928*
Horizontal Differentiation (Employee Cross-Training)	Region	33.887	.000	.127	16.149	14.402	1.746*
Horizontal Differentiation (Managerial Job Rotation)	Region	18.127	.000	.072	11.321	13.223	-1.902*
Internal Integration	Region	.031	.861	.000	31.722	31.825	-.103
Customer Integration	Region	24.327	.000	.095	27.143	25.239	1.904*
Supplier Integration	Region	.005	.943	.000	20.646	20.623	.023

[1]Covariates include firm size and industry, *Mean difference is significant at least at the .05 level

Considering the exploratory nature of the investigation of regional differences, we extended our analysis by (a) evaluating the mean differences of all variables (independent

and dependent) at the regional level and (b) evaluating mean differences at the country level. Related to the first post hoc analysis, the results, as shown in Table 5, indicated a pattern. For the dependent variables, we found no evidence suggesting that either cross-functional or supplier integration differ across regions. But for customer integration, firms in the West on average scored significantly higher than their East Asian counterparts.

Table 6. Differences in means across countries

Variable	Finland	United States	Germany	Sweden	Italy	Austria	Japan	Korea
Macro Centralization	13.672[1]	13.836	14.661	13.313	15.216	15.675	12.299	16.053
Micro Centralization	7.130	9.846	8.286	8.772	11.436	8.415	12.073	12.133
Formalization	22.773	20.273	20.630	20.650	20.456	22.741	20.713	20.745
Vertical Differentiation (Flatness)	18.635	17.953	20.664	20.050	17.354	21.473	15.814	15.232
Horizontal Differentiation (Employee Cross-Training)	15.895	16.346	16.081	16.271	15.576	16.898	14.230	14.645
Horizontal Differentiation (Managerial Job Rotation)	11.954	13.168	11.087	9.573	10.421	11.768	13.465	12.752
Internal Integration	31.890	32.120	31.467	29.391	32.432	33.830	32.141	31.030
Customer Integration	27.757	28.168	26.782	26.348	26.329	27.721	24.268	26.189
Supplier Integration	21.615	20.170	20.543	19.564	21.434	20.803	20.654	20.280

[1]Covariates include firm size and industry

Complexity, measured as both vertical and horizontal differentiation, was significantly different across regions. Western firms scored higher than East Asian firms both on flatness and reported levels of employee cross-training. On the other hand, firms in East Asia displayed a higher level of managerial job rotation. Collectively, Western firms are flatter and engage in more employee cross-training while East Asian firms are more diverse with respect to managerial job rotation. Levels of micro centralization were also significantly different, and the results reflect significantly higher scores for firms located in East Asia. There is a tendency for East Asian firms to centralize decisions made at the plant level. Statistically, the two regions diverge the most when their levels of micro centralization are examined. However, there were no discernible differences in levels of macro centralization or formalization across the two regions.

Table 7. Means across countries

Dependent Variable	Independent variables[1]	F	Sig.	Partial η^2
Macro Centralization	Country	8.875	.000	.215
Micro Centralization	Country	28.983	.000	.472
Formalization	Country	2.401	.022	.069
Vertical Differentiation (Flatness)	Country	13.630	.000	.296
Horizontal Differentiation (Employee Cross-Training)	Country	5.869	.000	.153
Horizontal Differentiation (Managerial Job Rotation)	Country	6.819	.000	.174
Internal Integration	Country	2.423	.021	.070
Customer Integration	Country	7.295	.000	.184
Supplier Integration	Country	2.248	.031	.065

[1]Covariates include firm size and industry

With respect to the second post hoc analysis, given the identified differences in mean variable scores across the two regions, we sought to identify whether significant differences in mean variable scores exist at the country level. Table 6 summarizes the results based on Univariate General Linear Models and shows that there are statistically significant differences at the country level for all variables. These differences were more pronounced for micro centralization and vertical differentiation. Table 7 displays the mean scores for all variables across the eight countries used for data analysis. It is evident that, in general, within-region countries exhibit similar means vis-à-vis between-region countries. Focusing on differences in the structural variables, firms in Japan and Korea report the highest scores for micro centralization and managerial job rotation amongst all countries. They also report the lowest scores for vertical differentiation and employee cross-training. The scores for macro centralization and formalization in East Asian firms, however, were similar to scores reported for firms located in several Western countries. Furthermore, Tables 7 and 8 suggest that there are significant differences in mean scores amongst firms located in Western countries.

Table 8. Mean differences across countries

(I) Country	(J) Country	(I-J) - Macro Centralization	(I-J) - Micro Centralization	(I-J) - Formalization	(I-J) - Vertical Differentiation (Flatness)	(I-J) - Horizontal Differentiation (Employee Cross-Training)	(I-J) - Horizontal Differentiation (Managerial Job Rotation)	(I-J) - Internal Integration	(I-J)- Customer Integration	(I-J)-Supplier Integration
Finland	United States	-.164[1]	-2.715*	2.500*	.682	-.451	-1.214	-.229	-.410	1.445*
	Germany	-.989	-1.155*	2.144*	-2.029*	-.186	.867	.423	.975	1.072*
	Sweden	.359	-1.642*	2.124*	-1.416	-.376	2.382*	2.499*	1.410	2.051*
	Italy	-1.544*	-4.306*	2.318*	1.280	.319	1.534*	-.542	1.428*	.182
	Austria	-2.003*	-1.285*	.032	-2.839*	-1.003	.187	-1.940	.036	.812
	Japan	1.373*	-4.943*	2.061*	2.820*	1.665*	-1.510*	-.251	3.490*	.961
	Korea	-2.381*	-5.003*	2.029*	3.402*	1.250*	-.797	.861	1.568*	1.335*
United States	Finland	.164	2.715*	-2.500*	-.682	.451	1.214	.229	.410	-1.445*
	Germany	-.825	1.560*	-.356	-2.711*	.266	2.081*	.652	1.385*	-.372
	Sweden	.523	1.074*	-.376	-2.098*	.076	3.596*	2.729*	1.820*	.606
	Italy	-1.381*	-1.590*	-.182	.598	.770	2.748*	-.312	1.838*	-1.263*
	Austria	-1.839*	1.431*	-2.468*	-3.521*	-.551	1.401	-1.711	.446	-.633
	Japan	1.537*	-2.227*	-.440	2.138*	2.116*	-.296	-.022	3.900*	-.483
	Korea	-2.218*	-2.287*	-.472	2.720*	1.701*	.417	1.090	1.978*	-.110
Germany	Finland	.989	1.155*	-2.144*	2.029*	.186	-.867	-.423	-.975	-1.072*
	United States	.825	-1.560*	.356	2.711*	-.266	-2.081*	-.652	-1.385*	.372
	Sweden	1.348*	-.487	-.020	.613	-.190	1.514*	2.076*	.434	.979
	Italy	-.555	-3.151*	.174	3.309*	.504	.666	-.965	.453	-.891
	Austria	-1.014	-.130	-2.111*	-.810	-.817	-.681	-2.363*	-.939	-.260
	Japan	2.362*	-3.788*	-.083	4.849*	1.851*	-2.378*	-.674	2.515*	-.111
	Korea	-1.392*	-3.848*	-.115	5.431*	1.436*	-1.665*	.438	.593	.263
Sweden	Finland	-.359	1.642*	-2.124*	1.416	.376	-2.382*	-2.499*	-1.410	-2.051*
	United States	-.523	-1.074*	.376	2.098*	-.076	-3.596*	-2.729*	-1.820*	-.606
	Germany	-1.348*	.487	.020	-.613	.190	-1.514*	-2.076*	-.434	-.979
	Italy	-1.903*	-2.664*	.194	2.696*	.694	-.848	-3.041*	.018	-1.869*
	Austria	-2.362*	.357	-2.092*	-1.423	-.627	-2.195*	-4.439*	-1.374	-1.239
	Japan	1.014	-3.301*	-.063	4.236*	2.041*	-3.892*	-2.751*	2.080*	-1.090*
	Korea	-2.740*	-3.361*	-.095	4.818*	1.626*	-3.179*	-1.639	.158	-.716
Italy	Finland	1.544*	4.306*	-2.318*	-1.280	-.319	-1.534*	.542	-1.428*	-.182
	United States	1.381*	1.590*	.182	-.598	-.770	-2.748*	.312	-1.838*	1.263*
	Germany	.555	3.151*	-.174	-3.309*	-.504	-.666	.965	-.453	.891
	Sweden	1.903*	2.664*	-.194	-2.696*	-.694	.848	3.041*	-.018	1.869*
	Austria	-.458	3.021*	-2.286*	-4.119*	-1.321*	-1.347	-1.398	-1.392*	.631
	Japan	2.917*	-.637	-.257	1.540	1.346*	-3.044*	.291	2.062*	.780
	Korea	-.837	-.697	-.289	2.122*	.931	-2.331*	1.402	.140	1.154*
Austria	Finland	2.003*	1.285*	-.032	2.839*	1.003	-.187	1.940	-.036	-.812
	United States	1.839*	-1.431*	2.468*	3.521*	.551	-1.401	1.711	-.446	.633
	Germany	1.014	.130	2.111*	.810	.817	.681	2.363*	.939	.260
	Sweden	2.362*	-.357	2.092*	1.423	.627	2.195*	4.439*	1.374	1.239
	Italy	.458	-3.021*	2.286*	4.119*	1.321*	1.347	1.398	1.392*	-.631
	Japan	3.376*	-3.658*	2.028*	5.659*	2.668*	-1.697*	1.689	3.454*	.149
	Korea	-.379	-3.718*	1.996*	6.241*	2.253*	-.984	2.801*	1.532*	.523
Japan	Finland	-1.373*	4.943*	-2.061*	-2.820*	-1.665*	1.510*	.251	-3.490*	-.961
	United States	-1.537*	2.227*	.440	-2.138*	-2.116*	.296	.022	-3.900*	.483
	Germany	-2.362*	3.788*	.083	-4.849*	-1.851*	2.378*	.674	-2.515*	.111
	Sweden	-1.014	3.301*	.063	-4.236*	-2.041*	3.892*	2.751*	-2.080*	1.090*
	Italy	-2.917*	.637	.257	-1.540	-1.346*	3.044*	-.291	-2.062*	-.780
	Austria	-3.376*	3.658*	-2.028*	-5.659*	-2.668*	1.697*	-1.689	-3.454*	-.149
	Korea	-3.754*	-.060	-.032	.582	-.415	.713	1.112	-1.922*	.374
Korea	Finland	2.381*	5.003*	-2.029*	-3.402*	-1.250*	.797	-.861	-1.568*	-1.335*
	United States	2.218*	2.287*	.472	-2.720*	-1.701*	-.417	-1.090	-1.978*	.110
	Germany	1.392*	3.848*	.115	-5.431*	-1.436*	1.665*	-.438	-.593	-.263
	Sweden	2.740*	3.361*	.095	-4.818*	-1.626*	3.179*	1.639	-.158	.716
	Italy	.837	.697	.289	-2.122*	-.931	2.331*	-1.402	-.140	-1.154*
	Austria	.379	3.718*	-1.996*	-6.241*	-2.253*	.984	-2.801*	-1.532*	-.523
	Japan	3.754*	.060	.032	-.582	.415	-.713	-1.112	1.922*	-.374

[1]Covariates include firm size and industry, *Mean difference is significant at least at the .05 level

As far as integration is concerned, Austria has the highest score for cross-functional integration while firms in the United States report the highest scores for customer integration. Firms in Japan had substantially lower scores for customer integration, even when compared to Korean firms. Finland and Italy report the highest scores for supplier integration. Companies located in East Asia differed somewhat from companies located in Western countries as far as internal integration and supplier integration are concerned, but there is evidence that there are similar differences within the sample of firms located in the West (see Tables 7 and 8).

DISCUSSION

As pointed out earlier, there has been little research that tests the effects of internal organizational design on external relationships with suppliers and customers. Here we conduct such testing and demonstrate that while certain structural variables might have little effect on internal integration, they may still produce effects on external integration. For example, our results indicate that micro centralization has no effect on cross-functional integration but has a significant negative effect on customer integration. This result may seem surprising, but our conjecture is that work formalization serves as a substitute for decision decentralization. That is, the negative effects of centralization at the plant level on internal integration are mitigated by formalization that provides "programmed" cross-functional integration. Programmed integration is missing in, or less applicable to, customer integration since customer engagement is often less predictable than internal or even supplier interactions. This example of the inconsistency between internal and external effects suggests that what might aid the firm's internal integration might simultaneously detract from its external integration and vice versa, suggesting that internal organizational design choices matter outside the traditional boundaries of the plant.

A surprising result was that formalization not only benefitted internal integration but

external integration as well. We had expected the loss of flexibility and intimacy engendered by formalized policies and practices to hinder both customer and supplier relationships. This was not corroborated and suggests that the clarity, consistency, and certainty that accompany formalization might be more important to customers and suppliers, at least in our sample of firms.

Some of our most thought-provoking results were found once we separated the sample based on geography. With respect to the relationships between structural elements and integration, internal integration in Western firms was positively related to macro centralization, formalization, and complexity as measured by flatness. For supplier integration, macro centralization, formalization, and complexity as measured by employee cross-training were all positive correlates. Formalization and managerial job rotation were found to have a positive relationship with customer integration. Micro centralization was also a significant factor, but as predicted, it was negatively related to customer integration.

These findings suggest that formalization may be the dominant structural variable in Western firms, across all types of integration. However, macro centralization, while positively related to cross-functional and supplier integration, is not statistically related to customer integration. In addition, micro centralization has a negative relationship with customer integration, which suggests that firms that decentralize decision making to the plant level exhibit higher levels of customer integration. Also, in the Western sample of firms, only one measure of complexity (i.e., flatness for cross-functional integration, employee cross-training for supplier integration, and managerial job rotation for customer integration) is significant for each type of integration, respectively. This suggests that while not all three complexity variables are needed in tandem to engender integration, the structural choice may be contingent on the type of integration.

Considering the firms located in East Asia, formalization, flatness, and managerial job rotation were strongly and positively related to cross-functional integration. For supplier integration, only employee cross-training was statistically significant, while for customer integration only macro centralization showed statistical significance. While this profile provides less confirming information than for the Western sample, it does indicate that formalization similarly co-varies with internal integration in East Asian firms. In fact, this relationship is much stronger in East Asia, perhaps indicating that where formalization practices are more common and entrenched, as in East Asian business practices like Six Sigma and lean manufacturing, we should expect to see a greater formalization effect. Further, the positive and significant relationship of macro centralization and customer integration may be a testament to the paternalistic cultural influence apparent in East Asia which, as previously alluded to, values top leaders' discretion in deciding which entities the plant should embrace.

Evaluating differences between the geographical regions, managerial job rotation related statistically to internal integration in East Asian firms and customer integration in Western firms. While separate forces might explain these two findings, they both result in increased cooperation. In collectivistic cultures, as in East Asia, perceptions of in-groups and out-groups are relevant to cooperation (Hofstede, 1980). As managers are granted opportunities to rotate to other departments, they become part of in-groups and act less exclusionary to others in the firm. This then benefits internal integration. In Western firms, managerial rotation may promote knowledge sharing and decrease functional myopia, both of which are important to supporting customer integration. Thus, the same structural variables can have potentially different integration effects, depending on the firm's cultural disposition.

Finally, formalization is positively related to both internal and external integration. However, for firms in East Asia, only internal integration demonstrated this relationship. The fact that Asian cultures often emphasize interpersonal relationships and trust, as well as high contextual communication, might explain why formalization did not relate to external integration in East Asian firms.

Our post hoc analyses complemented these findings by demonstrating that our study variables, both dependent and independent, differed at the regional and country levels. Regionally, we found evidence that Western firms prioritized customer integration more than firms in East Asia. This could be an artifact of collectivist cultural exclusion (Hofstede, 1980) in East Asia, where customers are perceived and treated as outsiders. However, it may also be

attributable to the growing prominence of concepts like Customer Relationship Management (CRM) in the West which are likely to explicitly impact organizational practices related to customer involvement.

Western firms were also flatter and more horizontally differentiated at the employee level than their East Asian counterparts. Again, this result could be influenced by cultural factors such as the high power distance, paternalistic nature of East Asian firms and their associated deference to authority. But, similar to customer integration, popular management philosophies and trends cannot be discounted as possible antecedents to greater Western adoption of flatter and more differentiated structures for employees.

Our country-level results largely corroborate our regional-level findings, but they indicate that even within regions significant heterogeneity still exists. For example, while the mean scores on micro centralization for South Korea (12.1) and Japan (12.1) were expectedly higher than all countries in the West, this difference is smaller in comparison to Italian firms (11.4) than for firms in Finland (7.1). Similarly, customer integration is highest for U.S. firms (congruent with our regional results), but Japan's score on this variable (24.3) is smaller than the mean score for South Korean firms (26.2), which is very similar to scores on customer integration for Western countries such as Sweden (26.3), Italy (26.3), and Germany (26.8). Also, while macro centralization is not significantly different across regions, interestingly at the country level Japanese firms score the lowest (12.3) while South Koreans firm have the highest mean scores (16.1). These results suggest that effects on organizational structure and integration can occur at both the country and regional levels. Further, they suggest regional-level findings are best interpreted in conjunction with country-level findings in order to provide more nuanced insight into the generalizability of both structural and integration constructs.

STUDY LIMITATIONS AND FUTURE RESEARCH

We recognize that there are limitations to our study. One limitation is the omission of interaction terms. This omission was largely motivated by the need for simplicity in our theoretical model as well as the limited size of our sample. Variable interaction may be evident, for example, in the relationship between micro centralization and integration. In discussing this interesting finding, we suggested that the negative effects we had hypothesized actually existed but were perhaps masked by the positive effects of formalization. This may well be true, but with no formal modeling or testing of this interaction we cannot state with certainty that our interpretation is valid. Nevertheless, this possibility, as well as the fact that organizational structure variables are often considered in tandem (c.f. Burns & Stalker, 1961), suggests that investigating interaction terms is a promising exercise.

Several other limitations are related to our sample and data. The High Performance Manufacturing data set prevented us from examining a broader set of structural variables. Although prior studies have established the reliability and validity of a majority of the measures used in our study, future studies should develop finer grained measures of organizational structure in order to extend our research. Also, investigations of industry effects might provide additional insight to our findings. We controlled for industry effects and examined the potential explanatory role of industry affiliation on all endogenous variables. Analysis of variance demonstrated that industry effects are minimal. However, our sample includes rather progressive manufacturing industries. Future research should examine the impact of organizational structure on integration across other industries, especially less sophisticated industries located in emerging economies. Furthermore, our data are cross-sectional, and therefore our results are merely correlational rather than causal. Future studies should utilize a longitudinal perspective in order to test for causal relationships. In addition, our hypotheses as they pertain to differences in patterns and levels across regions were exploratory due to the size of the sample. Our findings demonstrated significant differences across regions and countries and can stimulate future research to address these and other hypotheses more formally and thoroughly.

CONCLUSION

Along with Turkulainen and Ketokivi (2013), we argue that more rigorous theoretical and empirical work should be undertaken to validate structural contingency theory. Further, because relationships with external stakeholders such as suppliers and customers are becoming increasingly important to organizational performance, any contemporary treatment of integration must be extended to include these and other external stakeholders. In this regard, our study proposes and empirically demonstrates that structural variables inside the organization impact both internal and external integration. Our results indicate that rather than being uniform, these effects are heterogeneous in both magnitude and valence. For instance, using certain structural elements to foster internal integration might be counter-productive to cooperative supplier and/or customer engagements, and this suggests that management should examine both internal and external consequences before making structural decisions. In addition, comparison of the sub-samples in our study confirms our belief that the relationships we propose are influenced by both regional and country differences. While we do not specifically delineate and test these differences, our initial findings indicate that institutional and cultural forces are likely to moderate the effect of organizational structure on integration both within and outside the firm. Such a nuanced treatment of integration has the potential to improve the richness and rigor of organization design research.

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FIT BETWEEN ORGANIZATION DESIGN AND ORGANIZATIONAL ROUTINES

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Abstract: Despite decades of research on both organization design and organizational routines, little research has analyzed the relationship between them. Here we propose a normative theory in which the effectiveness of organization design and redesign depends on the characteristics of routines. The analysis shows which types of organization designs may be useful as well as which design changes may or may not succeed depending on (a) the specificity of routines and (b) the dynamic versus static purposes of organizational routines.

Keywords: Organizational structure, organizational modularity, structural embeddedness, ambidexterity, matrix structure

Much research has examined both organization design and organizational routines. Yet, surprisingly, we know relatively little about the relationship between the two. Here we propose a framework for understanding critical aspects of the fit between organization design and organizational routines. Specifically, we provide a normative theory in which the effectiveness of organization design and redesign depends on the characteristics of routines in the organization. The analysis shows which types of organization designs may be useful as well as which design changes may or may not succeed, depending on the specificity and purposes of organizational routines.

Our analysis focuses on two characteristics of routines. First, routines are characterized by their purpose. In particular, research has distinguished between operational (zero-order) and dynamic (first-order) routines (Murmann, Aldrich, Levinthal, & Winter, 2003; Winter, 2003). The former are directed toward maintaining the status quo, and the latter are directed toward change. Second, routines are context-specific in that they are tailored to the settings in which they arise and are used (Becker, 2004; Murmann et al., 2003). To bring the context specificity of routines closer to issues of organization design, we introduce a new construct: the business-unit specificity of routines. Karim (2012) first proposed that routines might be specific to individual business units, but the concept has not been elaborated in any detail. After discussing these two characteristics of routines—their operational/dynamic purpose and the degree of business-unit specificity—we examine how they affect the fit between organizational routines and organization design.

In analyzing organization design, we focus on the classic issue of centralization versus decentralization within an organization. This issue has two aspects that are important for our analysis: the division of tasks within the organization and the extent of delegation in decision-making authority. We examine the relationship of these aspects of organization design with the two characteristics of routines noted above. Based on this analysis, we then elaborate on the situation where organizations have a mix of operational and dynamic routines and where the specificity of routines varies across business units.

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ORGANIZATIONAL ROUTINES

Organizational routines have been viewed in two different but related ways: (1) as patterned behavior or activity (Nelson & Winter, 1982) or (2) as rules, procedures, or recipes that are executed in carrying out a particular behavior or activity (Becker, 2004). In the closely related literature on capabilities, a capability is defined as a collection of routines (Winter, 2003) that provides the capacity to perform an activity for an intended purpose (Amit & Schoemaker, 1993; Helfat, Finkelstein, Mitchell, Peteraf, Singh, Teece, & Winter, 2007). That is, routines provide the potential to undertake an activity rather than constituting the activity itself (Helfat et al., 2007). Consistent with this definition and the definition of routines in Becker (2004), we use the term "routine" to mean a procedure that in turn provides the potential for an organization to undertake an activity.

A routine, in the sense of a procedure, consists of a series of steps for executing a task or activity. Similar terms include "blueprint" or "rules" or "standard operating procedure" for executing an activity. A routine can also be viewed as a recipe that specifies the ingredients required for an activity, such as particular resources and assets, in addition to the steps needed to combine or otherwise utilize the resources for an intended outcome. Of note, such procedures can be tacit and implicit as well as codified and explicit. Indeed, a key feature of routines is their often tacit nature (Winter, 1987).

Our interest here is in organizational routines as opposed to routines of individuals. Organizational routines involve teams or sets of teams that perform activities within functional areas (e.g., manufacturing) or across functional areas (e.g., cross-functional product design). Because organizational routines involve multiple individuals that interact, routines include mechanisms for coordination between individuals, teams, and groups (see also Becker, 2004). Also, routines are specific to the organizational activities or tasks that they support. This specificity has at least two important aspects. The first has to do with the intended purpose of the routines and the capabilities they support. The second has to do with the context-dependent nature of routines. We next discuss each of these in turn.

Operational Versus Dynamic Purposes of Routines

With regard to the intended purpose of capabilities and their associated routines, both Winter (2003) and Collis (1994) distinguished between zero-order and first-order capabilities. Winter (2003) termed these operational and dynamic capabilities, respectively. The former denote capabilities directed toward maintaining how an organization earns its living "by producing and selling the same product, on the same scale and to the same customer population over time" (Winter, 2003: 992). In contrast, first-order or dynamic capabilities are directed toward changing "the product, the production process, the scale, or the customers (markets) served" (Winter, 2003: 992). Winter, in Murmann et al. (2003), has used the term "operational routines" to denote routines that underpin operational capabilities. These routines and the capabilities that they support are directed toward ongoing activities that are conducted in more or less the same way each time (Helfat & Winter, 2011). Additionally, routines that underpin dynamic capabilities can be thought of as "dynamic routines." Such routines include those involved in planning, initiating, and implementing change, ranging from investments in plant and equipment and new product development to strategic assessments and planning for strategic initiatives such as market entry. As Helfat and Winter (2011) have noted, the line between operational and dynamic capabilities—and, by implication, between operational and dynamic routines—is inevitably blurry. Nevertheless, they argue that the distinction serves a useful purpose of highlighting that some routines and capabilities are oriented more toward change and others are oriented more toward maintaining the status quo.

Context Specificity of Routines

By their nature, routines are also context-specific. As Winter observed in Murmann et al. (2003: 28), there are "diverse solutions to the same basic task or problem in a collection of organizations." Consider a routine for assembling the parts of a car. Although the broad outlines of a routine for car assembly may be the same for any company in any plant in any

location for any automobile model, the details of the routine will vary according to these characteristics. Different car models use different components that may need to be assembled in different ways; assembly plants in different geographic locations may be configured in different ways, to which the assembly routines are then tailored; and different companies may have histories of different assembly routines that persist over time. These differences in routines across settings often arise from different starting points in combination with local search as organizations learn over time (Helfat, 1994).

The fact that routines develop through learning (Zollo & Winter, 2002) is a particularly important determinant of context specificity (Becker, 2004). A great deal of organizational learning comes from experience—from learning-by-doing and learning-by-using (Argote, 1999). Almost by definition, all experience is context-specific to some extent. That is, what a team of individuals learns depends on the context in which the learning takes place. To return to the assembly plant example, when a team of individuals learns a job on the assembly line, what they learn depends on the configuration of the particular plant, the components of the particular automobile model, and the routines typically used in the organization. Even learning that involves gaining an understanding of codified information is likely to be tailored to a particular setting. Thus, if assembly line workers receive written instructions about how to perform their jobs, they are likely to need to tailor these instructions to the idiosyncrasies of the production line in question. As a consequence, Feldman and Pentland (2003) argue that routines evolve as individuals amend them in a particular setting.

Management scholars have examined context specificity in various ways. For example, the organizational ecology literature has emphasized that firms and their structures become adapted to their external environments, either as generalists serving a mass market or as specialists serving a market niche (Hannan & Freeman, 1989). In addition, the resource-based literature in strategy often emphasizes the firm-specificity of resources and capabilities (Barney, 1991). Others in this research stream have noted that resources and capabilities (such as managerial skills) are often specific to particular industries (e.g., Castanias & Helfat, 1991).

Capabilities and the routines that support them, however, may vary not only across organizations, but also within them. That is, even within firms, routines of a particular type—such as for assembling a car—may differ, including by location or type of product. Szulanski (1996, 2003) has demonstrated that firms face numerous obstacles when seeking to transfer routines internally across locations and business units. In addition, Rumelt (1991) and McGahan and Porter (1997) have shown that the largest portion of the variation in profitability resides at the business-unit level, suggesting that there are "cross-sectional differences and persistence in the way things happen at the plant level, say, or at the business unit level" (Winter in Murmann et al., 2003: 28). Thus, Pentland and Feldman (2005: 796) have observed with reference to hiring routines that: "Even within a single organization, there may be endless variations on the appropriate way to go about hiring people for different kinds of jobs, in different departments, or at different times of year." That is, "no two routines are really the same" (Winter in Murmann et al., 2003: 30, italics in the original). In what follows, we examine in more detail how routines may differ across business units within multidivisional firms and the potential sources of business-unit specificity in routines.

ORGANIZATION DESIGN AND ORGANIZATIONAL ROUTINES

In order to assess how routines may differ across business units, we must first understand where firms draw boundaries between business units and how they manage those units. This involves two key aspects of organization design on which we focus here and which have traditionally been associated with the issue of centralization versus decentralization within organizations: (1) division of tasks and (2) the extent of delegation in decision-making authority. With regard to the division of tasks, we focus on the relationship between the extent of task independence and the extent of modularity in organizational structure. With regard to delegation of decision-making authority, we focus on the extent of top management team involvement in business-unit decisions.

Modularity and Separation of Tasks in Organization Design

Organization design scholars have studied the evolution of firms and their structures, and noted their growth from single-business to multi-business entities. Much of the work in classic organization design has examined the multidivisional form (Chandler, 1962) and the separation of market activities into different divisions or units (Galbraith & Kazanjian, 1986; Mintzberg, 1979; Nadler & Tushman, 1997). Mintzberg (1979: 325) describes organizational "superstructures" as grouped into units according to either function ("by the means the organization uses to produce its products or services") or market ("by ends, by the characteristics of the ultimate markets the organization serves"). How much of the "means" or "ends" are grouped together—or what is referred to as unit size—is determined by the level of coordination required across the work processes; such coordination depends on the interdependencies in workflow, scale, and social relationships (Mintzberg, 1979).

Based on the concept of interdependence that is highlighted in both classic organization design (Galbraith, 1977; Lawrence & Lorsch, 1967; Thompson, 1967) and complexity theory (Alexander, 1964; Kauffman, 1991, 1992; Simon, 1996; Weick, 1976), scholars such as March and Simon (1958) and Thompson (1967) proposed that tasks that are highly interdependent (tightly coupled) should be carried out within the same organizational unit, because the work requires coordination or benefits from integration. Conversely, the greater the extent to which tasks are loosely coupled or differentiated, the more the tasks can be carried out by independent units. Scholars later developed a modular systems theory that applied to organizations (Baldwin & Clark, 2000; Sanchez & Mahoney, 1996; Schilling, 2000), and incorporated similar arguments regarding the separation of tasks, processes, or components into organizational modules.

Business-Unit Specificity of Routines

To benefit from the grouping of tasks (or work in general) within units, organizations require coordination and integration of these tasks. This naturally leads to the question of which coordination and integration mechanisms create benefits from grouping activities together. In an examination of the reconfiguration of product-market activities simultaneously with their respective business units, Karim (2012) introduced the idea of "structural embeddedness" to refer to "the activities and resources that reside within a structural context and have some dependence upon this contextual environment to create value" (Karim 2012: 333). She proposed that the dependence comes from established "contextual links" that "represent coordination mechanisms applied to activities that may embed activities and their underlying resources within their business units" (2012: 333).

We argue that these coordinative, contextual links stem from routines that are specific to the business unit. In other words, to effectively integrate tasks and complete work, organizational units depend on the business-unit specificity of routines. Building on Galbraith and Kazanjian's (1986) "integrating mechanisms" (which include allocating resources, measuring performance, and selecting and developing managers), we argue that these mechanisms involve routines that are specific to the context in which they are applied. Examples of contexts that are likely to have business-unit-specific routines include particular products or services, operations or functions, technologies, geographic locations, institutional settings, and stages in the value chain.

To return to the example of automobiles, we expect that a business unit focused on the functions of monitoring and coordinating fuel efficiency and car emissions would have specific routines to identify, evaluate, and obtain the resources needed to effectively complete these tasks. These routines are likely to be specific to this business unit, such that tasks in another unit performing different functions would have less need of, or dependence upon, these routines. We would further expect that the allocation of resources (including the manager selected to lead a particular unit) may depend on the geographic or institutional constraints faced by the business unit. If the unit faces stringent emission standards from a particular region or governing body, the unit may have routines not only to help measure emissions and fuel efficiency performance, but also to interact (with the right people and through specific processes) with the necessary institutions. We would not expect other units

to necessarily deploy the same emissions performance routines and routines of interchange with regulators—or at least not to the same extent. Thus, to effectively complete its task of building cars to meet minimum fuel efficiency and emissions standards, the organization depends on business-unit-specific routines within the unit that coordinates this type of work.

By definition then, business-unit-specific routines, and what Karim (2012) has referred to more broadly as "contextual links," imply some level of context dependence between tasks and routines. Over time, routines that coordinate the specific tasks that are grouped within an organizational unit become embedded in that unit. If another business unit were to suddenly take over responsibility for these tasks, the unit's routines would not be as well matched to the context, and the tasks would not be completed as effectively (Karim, 2012). As a consequence, we expect that units with greater business-unit specificity of routines will create more value by keeping the associated resources and activities embedded in their structures than by dislodging these tasks to other parts of the organization.

Delegation of Authority and Top Management Team Involvement

As discussed above, when tasks are independent, firms can utilize a modular organizational structure. This implies that decision making can be pushed lower down in the organization, because upper-level management need not coordinate the transfer or sharing of resources between business units on an ongoing basis. In a review and assessment of a great deal of literature on diversification, Hill, Hitt, and Hoskisson (1992) argue that when business units operate independently, firms not only can delegate decision-making authority to individual units but also can provide more high-powered incentives to business unit executives based on the profitability of their divisions (see also Williamson, 1985). Under this arrangement, top management oversight of business units is limited to financial controls based on quantitative metrics. In contrast, greater business-unit interdependence calls for greater top management involvement in coordination across units. Michel and Hambrick (1992) further note that the capacity for intra-firm coordination depends in part on the composition of the top management team (TMT). In particular, collaborative skills, breadth of perspectives, and shared backgrounds of the top management team improve the ability of the team to manage interdependent business units (see also Galbraith, 2010).

Operational Routines and Top Management Team Involvement

Although much research has investigated the relationship between the extent of business-unit interdependence and the extent of top management involvement in the business units, almost no research has investigated the relationship between organizational routines and the extent of top management involvement in business units. Because routines by definition promote predictable activity, this might suggest that organizations with well-developed routines require less top management involvement in business units. However, this conclusion may not hold for all types of routines. In particular, when examining the relationship between routines and top management involvement in the business units, it is useful to distinguish between operational and dynamic routines.

As noted earlier, operational routines are directed toward performing operations in much the same way as in the past for the same market and customers. Such routines maintain the status quo, and when these routines function well, their utilization within business units should not require intervention by the top management team. For example, absent technological, market, product, or customer change, the auto assembly routines in the example given earlier should not require top management intervention. Even operational routines that involve coordination between (rather than within) business units, such as routines involved in coordination of internal supply chains across units, do not call for extensive involvement of top management. These operational cross-unit coordination routines may involve the use of lateral linkages such as information technology (for budgeting or sourcing processes), cross-unit groups, or liaison roles (Nadler & Tushman, 1997). Nevertheless, operational routines for coordination between business units may call for some top management attention to ensure that coordination between business units does not lapse. Without such attention, business units may tend to focus on their own operational tasks rather than on those that involve other

units. Thus, we expect that operational routines that span business units will have greater top management involvement than operational routines that are specific to individual business units.

Dynamic Routines and Top Management Team Involvement

In contrast to operational routines, dynamic routines are directed toward changing how a company makes its living, including by changing operational routines. Because dynamic routines involve organizational and strategic change, at first glance it may appear that such routines call for greater involvement of the top management team. However, some types of dynamic routines may call for more top management team involvement than others.

As an example, consider dynamic routines for choosing specific innovation projects in pharmaceutical drug discovery research. Different medical conditions (e.g., heart disease versus cancer) may involve different considerations for which avenues to pursue next and therefore may entail different criteria and routines for choosing research projects. Such routines need not involve the top management team if they affect only the individual business rather than the firm as a whole and do not require a firm-level strategic perspective. Under these conditions, personnel within the businesses are likely to have much better information and expertise to carry out these narrow business-specific routines. Personnel positions are usually grouped into business units based on expertise with respect to skill, knowledge, specific work process, business function, product, client, or place (Mintzberg, 1979). Thus, dynamic routines that affect only the business unit, and for which top management has no additional, relevant expertise, are likely to be carried out by business unit personnel without top management intervention.

Other dynamic routines call for greater top management involvement in coordination within the firm, such as with respect to innovations that span multiple businesses or functional areas. For example, "design-for-manufacture" involves coordinated design of new products and manufacturing processes. Because this requires cross-functional coordination, the procedures for such coordination are likely to be put in place and monitored by top management and corporate-level staff. Because these innovations also call for a firm-level rather than a business-unit perspective, top management and corporate staff are likely to be directly involved in overseeing the innovation process, and are likely to have routines for managing this oversight.

More generally, some dynamic routines may reside within the top management team itself (Karim & Williams, 2012), complemented by routines of corporate staff units responsible for implementing strategy. To echo Rumelt's (1974: 20) early argument, "general management must view the firm as a whole" when considering changes in operations and resource allocation that go beyond single business units. In essence, their job is "to provide integration at a broader level of policies and strategies" (Lawrence & Lorsch, 1967: 56). The findings of Michel and Hambrick (1993) and Galunic and Eisenhardt (1996, 2001) apply here as well: such dynamic routines may call for top management teams with the breadth of perspective, cohesion, and collaborative skills necessary to effect change within an organization. Thus, we expect that dynamic routines that affect multiple business units or that are specific to individual business units but can benefit from top management expertise will require greater top management involvement than operational routines.

In summary, both the extent of task interdependence and the nature of routines have implications for the appropriate extent of top management team involvement in business unit decisions. Some routines, like the tasks and activities that they support, can be delegated entirely to the business units; others call for top management involvement. In what follows, we bring together the analysis of task interdependence, top management team involvement, and the characteristics of organizational routines to propose a framework for understanding organization design-routines fit.

ORGANIZATION DESIGN-ROUTINES FIT

Figure 1 summarizes the framework for organization design-routines fit. In this two-by-two matrix, the vertical axis distinguishes between operational and dynamic routines, and the horizontal axis distinguishes between high and low business-unit specificity of routines. Although the dividing line between operational and dynamic routines is blurry (Helfat & Winter, 2011), and there is a continuum of the extent of business-unit specificity of routines, for purposes of exposition we utilize a two-by-two diagram. In each quadrant of the diagram, we indicate the likely extent of organizational modularity and top management involvement with the business units.

Operational Routines	Quadrant 1 Less Modular Design Low-Medium TMT Involvement COORDINATED STATUS QUO	Quadrant 2 More Modular Design Low TMT Involvement MODULAR STATUS QUO
Dynamic Routines	Quadrant 4 Less Modular Design Medium-High TMT Involvement COORDINATED CHANGE	Quadrant 3 More Modular Design Low TMT Involvement MODULAR CHANGE
	Low Business-Unit Specificity of Routines	**High Business-Unit Specificity of Routines**

Fig. 1. Characteristics of Organization Design-Routines Fit

To begin, the extent of modularity in organization structure and the degree of business-unit specificity of routines often go together. Routines that have high business-unit specificity support activities that are contained within business units, such as operational auto assembly routines or dynamic drug development routines, independent of the operations of other business units. The converse holds as well. Routines that coordinate activities between units, such as operational routines for internal supply chain coordination or dynamic routines for cross-functional innovation, will have low business-unit specificity and are likely associated with less modularity in organization design. As another example, what is often referred to as the "parenting advantage" of some diversified corporations involves non-business-unit specific operational routines for using consistent financial principles or sourcing inputs from similar vendors (Campbell, Goold, & Alexander, 1995).

Recall that, as the interdependence across routines and the need for coordination grow, we would expect to see these processes grouped together and the organization to become less modular (Argyres, 1996). This is evident in the commonly observed practice of firms recombining business units (Karim, 2006, 2009). For example, when Johnson & Johnson (J&J) saw interdependencies across their Arbrook Inc. (which made bandages and disinfection equipment) and Jelco Laboratories (which made syringes, needles, and blood-collection equipment) business units, J&J chose to group these units together. The company formed Surgikos, Inc. to more effectively use the routines and processes involved in its surgical sterilization businesses (Karim & Kaul, 2015).

The arguments thus far imply that all else equal, high business-unit specificity of routines is associated with a more modular organization design and vice versa. These arguments hold for both operational and dynamic routines; if the routines in question are specific to a particular business unit, we expect to see a more modular design. Thus, Figure 1 indicates a more modular design in quadrants 2 and 3, which have high business-unit specificity of both operational and dynamic routines. Conversely, quadrants 1 and 4 have low business-unit specificity of routines and a less modular design.

Like modularity in organization design, the extent of top management team involvement

with the business units depends on the characteristics of routines. As argued earlier, operational routines that are specific to individual business units require relatively little top management team involvement, as indicated in quadrant 2 of Figure 1. Thus, when firms rely on operational routines that have high business-unit specificity, we would expect to see a more modular organization and low top management team involvement in the business units.

Operational routines that facilitate coordination across business units for ongoing operations, such as for internal supply chains, have less business-unit specificity. As indicated earlier, such routines may call for some top management attention to ensure that coordination between business units does not lapse. These routines also are associated with a less modular organizational structure, as indicated in quadrant 1. Hence, the extent of top management team involvement may be somewhat higher in quadrant 1 than in quadrant 2, where operational routines have high business-unit specificity and the organization design is more modular.

Turning to dynamic routines, the degree of business-unit specificity in these routines affects the extent of involvement required of top management. As noted earlier, when dynamic routines are specific to individual business units, as may occur for drug discovery routines, the extent of top management involvement depends on whether or not top management has relevant expertise. Essentially, the more context-specific and business-unit-specific are the dynamic routines, the less likely is top management involvement. Thus, quadrant 3 indicates relatively low top management involvement for highly business-unit-specific dynamic routines, along with a modular organization design.

In contrast, dynamic routines with low business-unit specificity, such as routines for cross-functional innovation, support strategic and organizational change that go beyond individual business units. Because changes of this type call for an understanding of the firm as a whole, many such routines inhere in the top management team and the corporate staff. Thus, quadrant 4 indicates greater top management team involvement with business units. This quadrant also indicates a less modular organization design, consistent with low business-unit specificity of routines.

DISCUSSION AND CONCLUSIONS

The foregoing analysis essentially provides a normative theory in which the effectiveness of organization design and redesign depends on the nature of routines. Figure 1 indicates that when organizations have high business-unit specificity of both operational and dynamic routines, we expect to find a more modular organization design and low involvement of top management in the business units. Understanding that this sort of classic decentralized organization entails high business-unit specificity of routines has important implications for potential changes in organization design. In particular, if an organization combines units that have highly specific routines, this is likely to cause problems because the specificity of the routines will make it difficult for the combined units to coordinate effectively, at least initially.

Turning to organizations with low business-unit specificity of operational routines, we expect to see a less modular organization design and somewhat greater top management involvement. Again, the nature of the routines has implications for changes in organization design. If firms attempt to increase the extent of modularity in organization design, they again are likely to run into problems because the low business-unit specificity of the routines is not well suited to a modular design.

Finally, when organizations have dynamic routines with low business-unit specificity, we expect to see both a less modular organization design and substantial top management involvement. In this situation, organizations that seek to make strategic changes on a regular basis but try to push responsibility for such change further down in the organization are likely to run into trouble because the routines cross functions and businesses. More generally, our analysis implies that if organizations seek to make changes in their organization design, doing so without attention to the specificity of their routines will lead to difficulties.

This analysis holds when an organization is characterized primarily by one quadrant in Figure 1. However, many organizations, especially larger ones, do not fit neatly into just one

quadrant. For example, companies may have some operational routines with high business-unit specificity that reside within modular business units, as well as some low business-unit-specific routines that are utilized by multiple units (e.g., routines of a shared sales force across an electronics division and an appliance division). Companies may also have both operational routines and dynamic routines with low business-unit specificity, yet the former calls for less top management involvement than the latter. Or companies may have some dynamic routines that have high business-unit specificity (e.g., for drug discovery) and others that have low business-unit specificity (e.g., for new strategic initiatives that span organizational units), which entail different degrees of both top management involvement and organizational modularity. How should firms design their organizations to best fit these multiple demands?

One suggestion is to design multidimensional (i.e., matrix) organizations (Galbraith, 2010). As organizations have entered international markets and diversified into multiple businesses, different units within the organization often serve the same customer. Matrix organizations originated from the demands of customers to interact with one contact (or account team) at the organization that would manage the integration issues seamlessly and "provide integrated packages of products, services, software and most of all, thought leadership" (Galbraith, 2010: 115). Galbraith suggested that matrix organizations have the ability to self-reconfigure as they find new market opportunities, implying that each part within the matrix needs to be highly modular in delivering its product or service, yet there needs to be a significant amount of cross-unit coordination to effectively offer an "integrated package" to the customer. How is this achieved? The key is to have personnel, which Galbraith referred to as "the talent," "selectively moved into cross-company teams" (2010: 115). Building on his ideas, we expect that as firms grow and potentially develop more business-unit-specific routines, firms may design matrix organizations that have a greater number of modules yet rotate their top executives across these modules. The executives each obtain a diversity of experiences and can better coordinate when placed in cross-company leadership teams by viewing issues from multiple perspectives. In this regard, top management serves as the glue within the organization, having learned from multiple experiences across the firm and able to relate to the challenges faced by leaders of different parts of the organization (Galbraith, 2010). This design has strong implications for managerial career paths as we see that executives' development of their own human capital may determine the opportunities available to them (Karim & Williams, 2012).

Another solution involves creating "dual structures" (Duncan, 1976) where some business units (with more operational routines) focus on maintaining the status quo, whereas others (with more dynamic routines) focus on adaptation and new market opportunities; this is what Gibson and Birkinshaw (2004) refer to as "structural ambidexterity." In this approach, top management decides whether to create new business units to pursue new ideas, and provides financial and organizational support for these units (O'Reilly & Tushman, 2008). Here the dynamic routines of top management, which have low business-unit specificity, work alongside the business-unit-specific operational routines of ongoing businesses and the business-unit-specific dynamic routines of new businesses.

Alternatively, business units that are able to achieve both alignment and adaptability have the trait of "contextual ambidexterity"; this is best achieved "not through the creation of dual structures, but by building a set of processes or systems that enable and encourage individuals to make their own judgments about how to divide their time between conflicting demands for alignment and adaptability" (Gibson & Birkinshaw, 2004: 210). A design of contextually ambidextrous business units emerges when leaders can "develop a supportive organization context" (Gibson & Birkinshaw, 2004: 210). This design, and specifically its degree of decentralization, likely depends on how tasks are allocated within units and the extent to which individuals have formal authority over their work (Dobrajska, Billinger, & Karim, 2014). Our analysis suggests additional implications. In particular, contextual ambidexterity implies that a single business unit has both operational and dynamic routines. As shown in Figure 1, the degree of modularity and top management involvement for these two types of routines is the same only when the routines are highly business-unit-specific. Thus, consistent with quadrants 2 and 3 of the figure, we expect to see contextual ambidexterity associated

with a high level of autonomy and a more modular design, along with high business-unit specificity of both operational and dynamic routines.

Despite the potential for organizations to develop designs that can accommodate business units that have routines with different degrees of business-unit specificity and operational versus dynamic purposes, we know that matrix organizations and ambidextrous structures are difficult to manage well. Thus, for firms that do not clearly fit into one of the four quadrants in our framework, more attention is warranted to organizational leadership and career paths, coordination across business units, and allocation of work so that the nature of routines and the design of the organization are aligned.

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ORGANIZATION DESIGN FOR DYNAMIC FIT

A REVIEW AND PROJECTION

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Abstract: The concept of fit is central to organization design. In the organizational literature, fit historically has been portrayed as a static concept. Both organizations and their environments, however, are continually changing, so a valid concept of fit needs to reflect organizational dynamics. In this article, I analyze various theoretical perspectives and studies that relate to organizational fit, differentiating those that employ an equilibrating or a fluxing approach. Four substantive themes emerge from this analysis: design orientation, design tension, designer/manager roles, and measurement and validation. Implications of each of these themes for dynamic fit are derived, and promising future research directions are discussed.

Keywords: Organization design, organizational fit, dynamic fit, organizational alignment, misfit

Fit has long been an important concept in the organization design literature. When an organization and its environment are aligned, organizational performance is strong. Today's organizations and environments seem to be changing more and faster than ever, but the concept of fit – its definition and measurement – has not kept pace. This article seeks to develop a concept of dynamic fit by reviewing major theoretical perspectives in the organizational literature and deriving their implications for continuous organization design and redesign.

THE CURRENT FIT FRAMEWORK

The concept of fit is central to the field of organization design (Venkatraman, 1989). Fit exists when organizational performance is positively affected by the alignment of key organizational and environmental contingencies (Donaldson, 2001). Internal fit refers to the alignment of organizational strategy, structure, and process while external fit refers to the alignment of the organization with its environment (Miles & Snow, 1984). When a misfit occurs, either internally or externally, organizational performance is negatively affected (Donaldson, 1987). Historically, the concept of fit has been portrayed as static, suggesting that it is an end-state for the organization to achieve rather than an ongoing process to be continually managed (Burton, Lauridsen, & Obel, 2002; Zajac, Kraatz, & Bresser, 2000). The static view of fit, however, is incommensurate with the fundamentally dynamic nature of organizations, their environments, and other contingencies (Sinha & Van de Ven, 2005).

Early research utilizing the fit concept was conducted using a contingency approach. Structural contingency theory, for example, was originally based on a fit between organizational structure and production technology (Woodward, 1965). Later, organizational performance was shown to be associated with a fit between structure and environmental uncertainty (Lawrence & Lorsch, 1967). More recently, Burton, DeSanctis, and Obel (2006) identified a set of 14 contingency factors (goals, strategies, environments, etc.) that an organization must address in an integrated manner, and they explain how the specific contingency set a given organization faces can be expected to change over time. Thus, the current theoretical framework utilizing the concept of fit is the multi-contingency perspective

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in which multiple internal and external contingencies must be aligned in order to achieve strong organizational performance.

DYNAMIC ORGANIZATION DESIGN APPROACHES

In order to develop fit as a dynamic concept, I analyze the theoretical perspectives and studies in the organizational literature that provide insight into dynamic organization design. Building in part upon my prior research (Alberts & Nissen, 2009; Nissen & Burton, 2011; Nissen & Leweling, 2008), I divide this literature into two broad orientations towards design: *equilibrating* and *fluxing*.[1] An equilibrating orientation seeks to achieve and maintain fit through episodic sequences of static organization (re)designs, whereas a fluxing orientation allows designs to change continuously with changing contingencies.

Equilibrating Orientations

Most approaches to organization design have an equilibrating orientation. As such, the organization is (re)designed to fit its multiple contingencies and then left in that configuration until enough misfits accumulate to warrant re-equilibration through subsequent redesign. The (re)design is accomplished as a nonroutine, sometimes disruptive activity (Boudreau, 2004; Burton et al., 1998), usually performed by high-level managers (Mintzberg, 1979). This orientation is pragmatic and focuses on the relative costs of misfit more than those associated with the (re)design activity – that is, content costs are emphasized over process costs (Håkonsson, Klaas, & Carroll, 2013). Hence the equilibrating orientation to dynamic organization design centers on a series of static adjustments over time.

Population ecology (Hannan & Carroll, 1995; Hannan & Freeman, 1977) represents one extreme among equilibrating organization design approaches.[2] (See Table 1 for a summary of the various equilibrating approaches.) Proponents argue that some organizational populations are inherently better suited for certain ecologies (environments) than others. Forces of adaptation – variation, selection, retention – work to preserve the populations exhibiting better fit and hence to alter the composition of ecologies over time (with some populations destined to survive and others destined to fail). According to the ecological view, the dynamics of fit are deemed to manifest themselves via interactions between populations and their ecologies, over long periods of time, and are largely insulated from management influence – that is, most managers in poor-fitting organizations are destined to see their organizations fail whereas managers in well-fitting organizations are destined to see theirs succeed. This passive perspective includes negligible opportunity for organizational redesign, even when misfits accumulate to the point of individual organizational failure.

Alternatively, most proponents of contingency fit maintain a teleologic view (Burns & Stalker, 1961; Klaas, Lauridsen, & Håkonsson, 2006; Van de Ven & Poole, 1995). They see managers in pursuit of goals, taking action to adjust organizational structure in order to establish or re-establish fit. For instance, Burns and Stalker (1961) suggest that organizations in misfit are expected to modify their structures to move into fit with their environments or other contingencies. This is an argument for deliberate organizational change (i.e., via management intervention), which suggests equilibrating organization redesign in response to exogenous shifts that cause an organization to fall out of fit. Fit remains a static concept in the contingency perspective.

Similarly, set largely within a technological context, the punctuated equilibrium approach (Eldredge & Gould, 1972; Gersick, 1991; Romanelli & Tushman, 1994; Sabherwal, Hirschheim, & Goles, 2001) indicates that most organizational transformations take place via discontinuous, management-induced change. Fit may persist over long periods of time

1 This division is a broad heuristic rather than a rigid classification system. Most organization design approaches reflect varying aspects of both equilibrating and fluxing orientations, but the distinction helps to organize the discussion.

2 One could argue that population ecology does not represent organization design at all (e.g., it is a non-teleologic approach). Although the approach is passive and evolutionary, an implicit "design" can be inferred nonetheless, and fitness plays an important role in contingent organizational success. I include it here as an extreme, passive approach that does not consider redesign even when misfits accumulate to the point of organizational failure. Equilibration takes place, external to any individual organization, at the population level.

until equilibrium is punctuated by a significant disruption that initiates organizational change (Zhao & Liu, 2010; Zhao, Liu, Yang, & Sadiq, 2009).

Table 1. Equilibrating Approaches to Dynamic Organization Design

Research Stream	Proponents	Concepts	Assumptions	Limitations
Population Ecology	Hannan & Freeman (1977), Hannan & Carroll (1995), McKelvey (1982)	Organizational populations, ecology, adaptation	Some organizations inherently meant to succeed	Negligible opportunity for redesign
Contingency Theory	Burns & Stalker (1961), Klaas et al. (2006), Van de Ven & Poole (1995)	Teleologic view Management role in change	Organizations are goal-oriented Endogenous organizational change	Static concept of fit
Punctuated Equilibrium	Eldredge & Gould (1972), Gersick (1991), Romanelli & Tushman (1994), Peteraf & Reed (2007), Sabherwal et al. (2001)	Punctuated equilibrium	Steady equilibrium conditions for long periods punctuated by rapid, discontinuous, management-induced change	Static, equilibrium focus
Organizational Ambidexterity	Tushman & O'Reilly (1999), Westerman et al. (2006)	Multiple, simultaneous organizational behaviors	Organization can operate simultaneously in multiple, sometimes inconsistent modes	Static, equilibrium focus
Complex Adaptive Systems	Kauffman (1995), Levinthal (1997), McKelvey (1997), Rivkin (2000), Sinha & Van de Ven (2005)	Competitive landscape, fitness	Describe fitness via smooth vs. rugged landscape of peaks and valleys, redesigns can range from local adaptation to reorientation	Change is slow, and focus is on static fit
Holistic Configurations	Burton et al. (2006)	14 interrelated contingency factors, four holistic configurations, step-by-step design process	Highly interrelated contingency factors, small set of coherent design configurations	Static, equilibrium focus
Design Rules	Baldwin & Clark (2000), Burton & Obel (2013), Davis et al. (2009)	Design guided over time by if-then rules; abductive logic (what might be), expert system assistance	Good understanding of organization design principles, need for redesign, expert system benefits	Static, equilibrium focus

Peteraf and Reed (2007), countering the population ecology argument, suggest that managerial choice trumps environmental determinism in achieving fit. They argue that achieving fit is an organizational capability, with some organizations having more capability than others. Moreover, organizational change to establish or re-establish fit can take considerable time (Pant, 1998). Similar to other equilibrating approaches, fitness and change are viewed statically: the organization falls out of fit, equilibrates to regain fitness, and settles into another period of steady equilibrium.

Tushman and O'Reilly (1999) discuss organizational ambidexterity, which is the ability of an organization to operate simultaneously in multiple modes. For example, a temporally ambidextrous organization may take a short-term focus on efficiency and control – essentially striving to exploit current opportunities and capabilities – while simultaneously pursuing a long-term focus on innovation and risk taking – striving to explore future opportunities and contingencies. Ambidexterity proponents describe how an organization may even adopt multiple, inconsistent design architectures to exploit and explore simultaneously. The ambidexterity approach also adopts a static, equilibrium focus. Although decisions and

behaviors may be made and examined over different time frames, both the short-term and long-term foci concern static fit: the exploitation focus is on fit with current contingencies, and the exploration focus is on fit with future contingencies. Westerman, McFarlan, & Iansiti (2006) discuss how organization designs that fit well with early strategic contingencies (e.g., in the early part of the innovation life cycle) can fall into natural misfit with later ones. They go further by suggesting a tension between management approaches, one that requires an assessment of tradeoffs in a dynamic context: either seek to minimize the negative effects of misfit or undertake timely organizational change.

Building upon complex adaptive systems theory (Kauffman, 1995), some researchers discuss the fitness of organizational forms as they adapt to changing environmental landscapes (Levinthal, 1997; McKelvey, 1997; Rivkin, 2000). Such landscapes can be characterized in terms of multiple contingencies (Siggelkow, 2001). Both external and internal fitness aspects are considered as they affect organizational performance, which can be viewed graphically in terms of peaks (and valleys) reflecting comparatively high (and low) organizational performance. As the environment changes over time, the landscape of peaks and valleys can shift and require an organization to redesign and reconfigure its form, either through local adaptation or reorientation (Levinthal, 1997). Relatively smooth landscapes reflect robust organization designs, where local adaptation through hill climbing can maintain high performance even across gently shifting peaks and valleys. Alternatively, comparatively rugged landscapes require long jumps across peaks (Sinha & Van de Ven, 2005). Fitness landscapes change slowly and thus reflect punctuated equilibria, and the focus remains on equilibrating to maintain static fit.

Burton, DeSanctis, & Obel (2006) describe organization design via holistic configurations. Identifying 14 interrelated endogenous and exogenous contingency factors, they use the Miles and Snow (1978) typology of prospector, defender, analyzer, and reactor to integrate these factors simultaneously and coherently. Designing the integration process involves five steps: (1) getting started: define organizational scope and goals; (2) strategy: review organizational strategy and assess the environment; (3) structure: assess the organizational configuration and its operation across time and space; (4) process and people: review work processes and assess tasks, people, leadership, and climate; and (5) coordination and control: assess the organizational infrastructure, including coordination, control, information, and incentive systems. This systematic approach addresses change over time as a sequence of static adjustments: the organization falls out of fit, redesigns to regain fitness, and settles into another period of equilibrium.

Finally, Burton and Obel (2013) build upon their considerable prior work (Burton et al., 1998; Burton & Obel, 2004) to articulate organization design in terms of design rules. Essentially a large and complex base of if-then rules developed principally from contingency theory, this approach utilizes an information-processing view of organization design (Galbraith, 1974) and breaks design down into discrete heuristics (e.g., “If the environment is uncertain, then decentralize”; “If the task interdependency is low, then decentralize”). Such rules or heuristics can be applied individually or in combination, and even chained together, through which the implication of one rule (i.e., the “then” part) may imply the incorporation of a different rule (i.e., the “if” part) to support the kind of in-depth analysis needed to design a complex organization. Nevertheless, design rules still reflect an equilibrating orientation towards fit.

Fluxing Orientations

A number of other approaches to organization design deemphasize or discard the equilibrating notion of fit and opt for a fluxing orientation instead. According to the fluxing orientation, the organization is designed to be and remain in flux as its multiple contingencies shift so abruptly and frequently that they render an equilibrating orientation futile. Here, organizational (re) design is accomplished as a routine, integrative activity performed not just by high-level managers but by staff and operating employees as well. This orientation is also pragmatic, but it views content and process costs somewhat differently than the equilibrating orientation,

and the overall focus is on continuous adjustments over time. See Table 2 for a summary of research streams that are consistent with a fluxing orientation.

Table 2. Fluxing Approaches to Dynamic Organization Design

Research Stream	Proponents	Concepts	Assumptions	Limitations
Emergent Patterns	Orlikowski (1996), Barrett (1998)	Structuration and improvisation	"Design" will emerge from unplanned interaction patterns	Negligible design consideration
Dynamic Capabilities	Teece et al. (1997), Lengnick-Hall & Beck (2005), Eisenhardt & Martin (2000)	Market dynamism and ability to modify organizational capabilities	Organizational processes enable capabilities, changing processes affects changes in capabilities	Unclear how to incorporate multiple contingencies
Modular Reconfiguration	Brown & Eisenhardt (1997), Davis et al. (2009), Eisenhardt & Brown (1999), Karim (2006)	Balance between efficiency and flexibility	Small continuous changes	Fitness as management goal unclear, external validity unproven, uncertain applicability to major organizational restructurings and changes
Organizational Inertia	Nickerson & Zenger (2002), Boumgarden et al. (2012)	Modulation and vacillation	Formal and informal organizations have different dynamics	Good timing and maneuverability required
Organizational Dynamics	Nissen & Burton (2011), Håkonsson et al. (2013)	Dynamic stability, maneuverability, and fit; dynamic inertia and sustainable, continuous change	Stability-maneuverability tension, efficiency-flexibility tension	External validity unproven

Emergent patterns represents one extreme among fluxing organization design approaches.[3] Largely eschewing organization design as a rational or teleologic process, proponents of this approach discuss organization in terms of structuration (Orlikowski, 1996), improvisation (Barrett, 1998), and the like – essentially continuous, bottom-up processes. Through such processes, the implicit organization "design" emerges over time and through the accumulation of subtle and largely unplanned yet ubiquitous interpersonal interactions in the organizational context. Parallel in some respects to the manner in which population ecology affords negligible opportunity for redesign to address organizations in misfit, emergent patterns has little consideration of organizational structure or behavior as a focus of deliberate design. However, emergent patterns do occur at the organizational level, and they tend to be continuous in nature.

The dynamic capabilities approach (Teece, Pisano, & Shuen, 1997) focuses on the ability of an organization to achieve new forms of competitive advantage (e.g., appropriate in shifting environmental conditions), and it prescribes capabilities such as timely responsiveness, rapid and flexible product innovation, and the management capability to coordinate and redeploy resources as key. Lengnick-Hall and Beck (2005) discuss resilience capacity, which centers on recognizing where objectives such as responsiveness, flexibility, and expanded action repertoire are relatively more important than seeking higher levels of fit over time and which emphasizes the capability to select and enact the corresponding routines. In the dynamic capabilities view, there is no presumption that specific environmental conditions will move to equilibrium; hence organizational structures cannot be (re)designed and changed to achieve

3 As pointed out about population ecology above, one could argue that the emerging patterns perspective does not represent organization design at all. However, as also argued above, an implicit "design" can be inferred nonetheless. I include it here as an extreme, continuous approach that considers organizational structures and behaviors to emerge and flux through bottom-up change not through top-down design and equilibration.

static fit. The argument is that continuous change represents a more appropriate perspective than punctuated equilibrium, and it acknowledges the kinds of hypercompetitive (D'Aveni, 1994; Hanssen-Bauer & Snow, 1996) and high-velocity (Eisenhardt & Tabrizi, 1995) environments that are in perpetual flux and the kinds of nonlinear, dynamic environmental patterns that never establish equilibrium (Stacey, 1995).

Eisenhardt and Martin (2000) augment this discussion by relating dynamic capabilities to organizational processes (e.g., product development, alliancing, decision making) and explaining how "very dynamic" environments require different capabilities (rapid prototyping, early testing, real-time information processing, pursuit of multiple options, etc.). The term "dynamic capability" appears in several different fluxing approaches, but it is not immediately clear which specific dynamic capabilities are required to address various combinations of different, multiple contingencies (e.g., the 14 contingencies of Burton et al., 2006, noted above).

Similarly, through an approach called modular reconfiguration, Brown and Eisenhardt (1997) advocate "simple rules" and organizational "semi-structures" to balance efficiency and flexibility and to enable superior organization in complex, dynamic organizational environments. It remains unclear, however, whether fitness represents a management goal, as in the equilibrating approaches discussed above, or whether the goal of fitness should be abandoned in lieu of balance (especially between efficiency and flexibility). Simulation research shows that simple rules are robust across different environmental conditions, both predictable and dynamic (Davis, Eisenhardt, & Bingham, 2009). However, the simulation results used to interrelate organizational structure, performance, and environment are theoretical, and the external validity of the underlying models remains unproven.

Related work discusses patching (Eisenhardt & Brown, 1999) as a reactive process to shifting business environments, through which adding, splitting, transferring, combining, or exiting chunks of an organization (e.g., business units) can change the organization's focus to make better use of skills, balance capacity, and accomplish beneficial changes quickly. Karim (2006) builds upon this work, in part, to discuss modularity in organizational structure, particularly through reconfiguration of internally developed versus acquired organizational chunks, as a proactive process to search for new opportunities. Both patching and reconfiguration, however, refer to relatively small organizational changes.

Organizational inertia depicts resistance to change in many organizational settings because it relates to differences in the respective dynamics of the formal and informal organization (Nickerson & Zenger, 2002). Whereas redesign and change of the formal organization can be accomplished relatively quickly by management fiat, the informal organization requires more time – even with willing organizational participants – for people to adjust to formal organizational changes. Given this dynamic, the fluxing approaches of purposeful modulation (Nickerson & Zenger, 2002) and intentional vacillation (Boumgarden, Nickerson, & Zenger, 2012) are argued to be superior for dynamic organization design. Rather than waiting for the organization to reach a condition of severe misfit, and then instituting change in response, a more proactive management seeks to anticipate future misfits and maneuver the organization purposefully toward a different (holistic) design point well in advance. This highlights the importance of good timing and maneuverability. Initiating redesign at the wrong time or in the wrong direction, especially considering the inertia and maneuverability inherent in a particular organization design, could lead to perpetual misfit *and* incur high design process costs.

A dynamic view of organizations requires a dynamic fit concept. Nissen and Burton (2011) argued that human activity systems, such as organizations, and engineered physical systems, such as airplanes, bridges, and computers, both represent classes of systems (Checkland, 1981) and therefore share attributes at some level of abstraction. Seeking to define a dynamic fit concept, these authors borrowed concepts from the literature on aerodynamics (Houghton & Carruthers, 1982), which addresses dynamic, controlled systems. Those concepts, including the systemic relationships among them, are static stability, dynamic stability, and maneuverability.

Static stability is similar to the "path dependence" of an organization (Arthur, 1994; Nelson & Winter, 1982). Path dependence refers to how the set of decisions an organization

faces in any given situation is constrained by the decisions management has made in the past. Path dependence theory says that an organization whose existing performance trajectory is threatened by an internal or external disruption will search "in the neighborhood" for a new fit. Thus, static stability is a series of fits (or achieved equilibria) with a low magnitude of variation from previous fits.

Dynamic stability is concerned with how quickly a system returns to its performance trajectory after deviation caused by an external force. Compared to static stability, which is concerned with the magnitude of change, dynamic stability refers to the duration of change. Both static and dynamic stability are important to organizational adaptation, but both are equilibrium-based concepts that, arguably, are becoming less relevant in today's complex, dynamic organizational environments.

Maneuverability refers to a controlled system's planned change from one performance trajectory to another. Maneuverability has an inverse relationship to stability. That is, the more stable an organization is, the less maneuverable it is. Maneuverability adds a dynamic dimension to the fit concept by indicating that an organization must determine how to efficiently change trajectories by manipulating at least 14 contingency variables simultaneously.

Recent research by Håkonsson et al. (2013) examines organizational dynamics through computational modeling. Their findings challenge the long-standing idea that organizational efficiency must necessarily be traded off against flexibility. In contrast, their simulations suggest that organizations with fluxing designs can maintain both efficiency and flexibility simultaneously, appropriate for continuous change. Apparently, the key is to establish a set of dynamic capabilities suitable to generate high flow rates of organizational inertia. Such capabilities include "… building structures, organizational culture, and relationships" (p. 200). They explain further how inertia and competence emerge from two sources: the relationships that the organization builds with its environment (such as customers and suppliers) and internal consistency (such as socialization and operating rules). Although the implications for organization design have been established computationally and illustrated convincingly through simulation models, this research has yet to undergo significant empirical validation in actual organizations.

ANALYSIS AND PROJECTION

I used qualitative analytical techniques associated with hermeneutics and grounded theory building (Glaser & Strauss, 1967; Strauss & Corbin, 1990) and employed multi-stage data refinement and analysis (Gioia, Thomas, Clark, & Chittipeddi, 1994; Nissen, 2005) to both differentiate and interrelate the equilibrating and fluxing organization design approaches reviewed above. Such qualitative techniques include the constant comparison of texts, open and axial coding, theoretical sampling, and analyzing refined data (especially the literature review above) from a theoretical perspective. For purposes of brevity, the details of those analyses are not presented here. Four substantive themes emerge: (1) design orientation, (2) design tension, (3) designer/manager roles, and (4) measurement and validation. Using examples from the literature review above, I elaborate on each of these themes to develop a set of research projections on the topic of dynamic fit. The four themes and their associated projections are summarized in Table 3.

Table 3. Themes and Projections

Theme	Examples	Projections
Design Orientation	Equilibrating: focus on content costs Fluxing: accept misfits, focus on maneuverability processes	Classification typology Contingent application framework
Design Tension	Organizational ambidexterity: exploitation v. exploration Holistic configurations: organizational strategies and configurations endogenous redesign Modular reconfiguration: efficiency and flexibility Organization inertia: formal and informal organization Organizational dynamics: stability and maneuverability, efficiency and flexibility	Organizational "flight control systems" Design and manage for high inertia flow rate
Designer/Manager Roles	Population ecology: negligible redesign role Emergent patterns: negligible design role Equilibrating approaches: design is fixed and managed Fluxing approaches: management maneuvers the organization	Understand designer and manager roles Comparative advantages Minimal expectations Weigh process and content costs of organization design
Measurement and Validation	Equilibrating contingency fit: 50+ years of empirical support Fluxing approaches: need empirical validation, measure dynamic fit, examine dynamic inertia	Empirical support for fluxing approaches Extend and apply dynamic fit Extend and apply dynamic inertia

Design Orientation

The first theme pertains to the equilibrating versus fluxing orientations discussed above. The underlying assumptions – such as whether it makes sense or is even possible to maintain equilibrating fit and whether organization success centers on excellent organization design or outstanding management – differ markedly across the two orientations. Drawing again on the distinction between content costs (associated with misfit) and process costs (associated with redesign activity), the equilibrating orientation appears to emphasize content costs more than its fluxing counterpart does; the implicit guidance is to primarily address misfit (content costs). Alternatively, many fluxing schemes accept the content costs of misfit to a much greater extent.

In terms of promising future research, a classification typology and contingent application framework could shed considerable light on dynamic fit from both orientations. As noted earlier, dividing the organization design studies into equilibrating and fluxing categories reflects more of an imprecise heuristic than a rigid classification system. Research to develop a more precise classification system could be very useful, particularly in the area of episodic versus continuous organizational change (Weick & Quinn, 1999). Such a classification typology would be especially useful were it to outline clearly the relative advantages and disadvantages of the various organization design orientations and approaches, and were it to prescribe clearly the contingent conditions in which recommendations based on one orientation would be considered superior to those based on the other.

Design Tension

The second theme, also cutting across both the equilibrating and fluxing orientations, pertains to design tensions. With organizational ambidexterity, for instance, we find tension between exploitation and exploration, and with holistic configurations, one must choose between the relative strengths and weaknesses of each discrete strategy (e.g., prospector vs. defender) and its corresponding holistic design. Likewise, with fluxing approaches such as modular reconfiguration, we find tension between efficiency and flexibility. With respect to organizational inertia, we find tension between the formal and informal organization, with each manifesting different dynamics. The stability-maneuverability tension is fundamental to organizational dynamics, as is the classic tension between efficiency and flexibility.

The diverse organization design approaches reflect considerable variety in terms of how to approach design tension. Organizational ambidexterity accepts the idea of including two

(or more) inconsistent designs (such as one focused on exploitation, another emphasizing exploration), and tension across discrete strategies and their corresponding holistic designs can be addressed through purposeful modulation and intentional vacillation. Modular reconfiguration seeks balance across the tension between efficiency and flexibility, and by relating dynamic capabilities to organizational processes, some fluxing proponents emphasize rapid prototyping, early testing, real-time information processing, and capacity balancing.

The two organizational dynamics approaches differ somewhat from those above in terms of how to approach design tension; they acknowledge such tension but argue that it can be surmounted. In the aerodynamics approach, for instance, a stability-maneuverability tension can be mitigated through substantial organizational technology and sophistication, and in the dynamic inertia approach, an efficiency-flexibility tension can be overcome through fluxing, inertia-building organization design.

In terms of future research, further exploration of how fundamental tensions such as stability-maneuverability can be mitigated and how seemingly insurmountable trade-offs such as efficiency-flexibility can be transcended could be productive. What technologies would constitute effective organizational "flight control systems," and how would they enable stable organizations to behave nimbly or maneuverable organizations to achieve performance consistency? What specific aspects of organization designs and management techniques would enable high flow rates of inertia across diverse combinations of extant organization designs, and how would such designs and techniques need to vary across different multi-contingency contexts?

Designer/Manager Roles

The third theme pertains to the relative roles played by organizational designers and managers. Population ecology, for instance, includes negligible opportunity for designers to address organizations in misfit, and emergent patterns recognizes a similarly negligible role for designed interventions. By contrast, most of the other equilibrating approaches (e.g., contingency fit, punctuated equilibrium, holistic configurations) have the organization designer playing a critical role. Once the non-routine, often disruptive (re)design activity is completed by high-level organization designers, managers perform as well as they can with the organization that has been designed for them. Only after misfits accumulate sufficiently do organization designers re-emerge to equilibrate the configuration; then managers perform as well as they can once again, this time with the redesigned organization. In these approaches, organization designers are the stars. Organizational performance rests largely on the capability of designers as well as the appropriateness and timeliness of their designs; day-to-day management plays more of a supporting role in this orientation.

In the fluxing orientation, conversely, the various approaches to organization design place abundant burden upon management maneuvering. The (re)design is accomplished as a routine, often integrative activity, and maintaining organizational performance through fluxing designs represents a central responsibility of management. Indeed, distinctions between the roles of designer and manager begin to blur in this orientation. Organization designers play an important supporting role (especially in helping to create appropriate fluxing designs), but organizational success and failure are primarily the responsibility of managers, who are the stars in this orientation. The purposeful modulation and intentional vacillation approaches, for example, call for management to anticipate the need for redesign in a timely manner and steer the organization deftly, and managers of organizations designed for maneuverability are expected to pilot them skillfully.

With respect to future research, some fluxing approaches appear to rely upon deft organization design more than skillful management, and vice versa. Further, some appear to envision infrequent but disruptive organizational (re)design, whereas others seem to rely more on continuous fluxing and management expertise. Each of these approaches is likely to have comparative advantages and disadvantages, and each is likely to impose different expectations regarding the skill and experience levels of the organizational designers and managers taking part. How can a particular organization know whether it needs the very best organization designers, for instance, or whether an outstanding management team will

be adequate for a specific organizational configuration? How can organizations weigh the various process costs associated with hiring skilled and experienced organization designers against the range of content costs stemming from redesigning misfit?

Measurement and Validation

The final theme pertains to measurement and validation. All of the approaches discussed here are theoretically rich, but they vary substantially in terms of empirical support. At one extreme, the classic equilibrating approach of contingency fit reflects a half-century of empirical support and refinement, and although fewer decades have passed, both the equilibrating and fluxing approaches of the 1990s (e.g., organizational ambidexterity, dynamic capabilities, modular reconfiguration) benefit from considerable empirical work. At the other extreme, recent fluxing approaches (e.g., organizational inertia, organizational dynamics) have negligible empirical support.

With respect to future research, the newer fluxing approaches in particular can benefit greatly from empirical work to provide additional support and refinement or to identify critical flaws and impractical assumptions. What empirical support can be developed for and against each of the dynamic fit approaches reviewed in this article? How can insights into dynamic fit from the airplane analogy and the rate equations from dynamic inertia be validated and shown to reflect the dynamic structures and behaviors of organizations in the field? Further, recent developments in the measurement of dynamic fit and dynamic inertia are promising, and similar measurement advances are needed for the constructs of opportunity cost, content cost, and process cost in order to quantify and compare different approaches to dynamic organization design that are beginning to coalesce now. Research designed to interrelate and extend such measures, and to understand how they can be applied practically, offers an excellent opportunity to inform organization design for dynamic fit.

CONCLUSION

This review found gaps, alternative perspectives, and even conflicting views across the organization design literature in terms of establishing and maintaining dynamic fit. By examining both equilibrating and fluxing design orientations, four substantive themes emerged each of which has research implications for dynamic fit. This analysis enabled us to project a mosaic of promising research directions for enriching the fit framework and making it more relevant to today's organizations and environments.

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NAVIGATING NEW LEGAL DEMANDS FOR FRANCHISOR ACCOUNTABILITY

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Abstract: Franchising is a relationship wherein one organization (i.e., the franchisor) allows other organizations (i.e., franchisees) to use its brand name, products, and processes in exchange for fees. Because franchising offers franchisors the opportunity to build their brands quickly, it is perhaps not surprising that many firms rely on franchising as a key tool for organization design. One caution about franchising is that its use brings a complex array of legal issues into play. As franchising increases in popularity, so too does the scrutiny paid to this organizational form by the legal system. Indeed, the courts appear to be demanding increased accountability from franchisors. The goal of this Point of View article is to explain how organizations can avoid problems associated with increased accountability and even benefit from it.

Keywords: Franchising, franchise law, accountability, brand protection, transaction costs

Franchising is a business relationship involving two types of organizations: a franchisor and franchisees. The franchisor is a company such as McDonalds or 7-Eleven that has created a valuable brand and an effective business model. Rather than owning all of the outlets that operate under its brand, the franchisor allows independent organizations (franchisees) to own some or all of these outlets. In exchange, the franchisees pay the franchisor both a franchisee fee (an upfront fixed sum) and ongoing royalties (usually a percentage of the franchisee's sales over time).

Many executives rely on franchising as a means to design their organizations. Indeed, franchising plays a huge role in the modern economy. According to the International Franchise Association (2013), there are approximately 825,000 franchised outlets in the United States alone. These organizations are directly and indirectly responsible for nearly 18 million jobs and they generate more than $2 trillion of economic output. The use of franchising as an organizational design tool is on the rise. Franchisees in the U.S. opened 11,000 new establishments in 2013, for example, and the total sales enjoyed by franchises increased by 4.3 percent from 2012 levels (Duncan, 2013).

The relative success of a franchised system depends in part on how well the franchisor and its franchisees work together. If the relationship is cooperative and collaborative, both the franchisor and the franchisees are more likely to enjoy strong performance. Unfortunately, the two sides do not always work in concert, and the resulting disputes sometimes lead to legal wrangling. As franchising grows in popularity, the courts are paying increased attention to this organizational form (Ward, 2011). In particular, there appears to be a trend toward raised expectations about how franchisors deal with their franchisees. Our goal in this article is to explain how organizations can avoid problems associated with increased accountability as well as actually benefit from it.

FRANCHISING AND THE LAW

Franchising became a prominent way for organizations to grow in the 1950s and 1960s. This organization design helped companies such as Burger King and Marriott become national and

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international brands. Unfortunately, franchising also attracted some dubious franchisors that would exploit their franchisees. The U.S. Supreme Court took major steps toward defining acceptable franchisor behavior in two cases: Susser v. Carvel Corporation (1962) and Seigel v. Chicken Delight, Inc. (1971). In the former case, the court deemed "exclusive dealing" – preventing a distributor of a firm's offerings from also distributing competitors' offerings – to be legal in the franchising context. In the latter case, the court judged that "tying" – forcing franchisees to buy commodity products such as napkins from the franchisor – was illegal. By the end of the 1970s, the federal government began regulating franchising in an additional effort to ensure that franchisees are treated fairly. Four decades later, recent legal developments appear to indicate that the courts are demanding greater accountability from franchisors in terms of how they treat their franchisees.

Franchise Contracts: The Conscionable is Now Unconscionable

A contract is a legally binding agreement between two or more parties for which the law provides a remedy if one of the parties fails to fulfill one's promise or perform one's duty. Many franchisors assert that franchise agreements need to be more one-sided than other business contracts because franchisors must protect the health and integrity of the franchise system as a whole. Such tight control is vital because if the system fails, all of the franchisees lose too (Kreutzer, 2013).

While this is a valid point – and one that has previously carried the day in court – today the courts are taking a closer look at franchise agreements to determine if they are "unconscionable" (i.e., whether they are oppressive or grossly unfair to franchisees) on procedural or substantive grounds. Procedural unconscionability may involve inconspicuous print, unintelligible language, or failure to provide an opportunity to read a contract or ask questions (Clarkson, Miller, & Cross, 2012). It can also be present when there is a vast disparity in bargaining power between the two parties such that one party's consent cannot be considered voluntary. Typically, this happens when a contract is written exclusively by one party and presented to the other party on a take-it-or-leave-it basis.

Substantive unconscionability exists when a contract is so oppressive as to "shock the conscience" of the court (Clarkson et al., 2012: 266). For instance, a contract that requires a franchisee to arbitrate any dispute resulting from the franchise agreement, but allows a franchisor to proceed directly to court, may be unconscionable. Further, a franchise agreement could be substantively unconscionable if it provides unfair penalties for early termination or limits a franchisee's remedies in an unfair manner.

The case of *Bridge Fund Capital Corp. v. Fastbucks Franchise Corp*. (Bridge Fund, 2010) involved a franchisee (Bridge Fund) that entered into franchise agreements with Fastbucks for the operation of payday loan stores in California. The franchise agreement included an arbitration clause that stated:

> (1) the arbitrator shall hear the dispute in Dallas County, Texas; (2) the claims subject to arbitration shall not be arbitrated on a class-wide basis; (3) while the franchisor may institute an action for temporary, preliminary, or permanent injunctive relief, the franchisee is not afforded the same remedy; (4) there is a one year statute of limitations for all claims; and (5) the parties are limited to recovery of actual damages and waive any right to consequential, punitive, or exemplary damages (Bridge Fund, 2010: 999).

The absence of any real negotiation between the parties led the court to conclude the agreement was procedurally unconscionable (Bridge Fund, 2010). The court also held that the arbitration clause was substantively unconscionable for several reasons. First, the contract's mandatory waiver of non-waivable statutory rights (e.g., class action rights) was the type of one-sided and overly harsh term that made the arbitration provision unenforceable. Further, the arbitration clause allowed the party with greater bargaining power to seek injunctive relief in court and denied such relief to the weaker party, and did so without any valid business justification for such non-mutuality. Finally, the arbitration clause was unduly oppressive because it allowed Fastbucks to evade liability (Bridge Fund, 2010).

Franchisors need to achieve a balance between maintaining the necessary control over

their brand on the one hand and treating franchisees more as partners on the other. As shown in Table 1, franchisors can pursue this balance by working more closely with franchise associations to revisit the franchise contract. Within many franchised systems, franchisees band together to resolve issues with the franchisor as a group rather than as individuals. Similarly, franchisees can look to outside standards from independent organizations. Although some franchisors initially may balk at this notion – in part because such a practice may increase franchisees' bargaining power – it could be beneficial to franchisors, too. If an association deems a franchise contract to be fair and equitable, the franchise agreement stands an excellent chance of being judged conscionable if taken to court.

Table 1. Possible responses to increased demands for accountability

Issue	*Status of the Law*	*Recommended Practice*	*Demonstrating Accountability*
Franchise agreements are being scrutinized more closely for their fairness to franchisees	Courts are beginning to review franchise agreements to ensure that they treat franchisees justly rather than simply assuming that these contracts have to be one-sided in order to protect the brand from infringement	Within many franchised chains, franchise associations are created to protect franchisees' collective interest. Franchisors should work in partnership with these franchise associations to ensure their franchise agreements are fair and reasonable	Obtain written certification from franchise associations stating that the franchise agreements are fair to franchisees
Franchisors may be increasingly responsible for protecting their brands from competition in local markets	A recent case in Quebec found Dunkin' Donuts liable for failing to protect its brand from competition and thereby causing financial harm to franchisees	Franchisors should be vigilant about the language they use in their franchise agreements regarding brand protection obligations. Also, franchisors should act in good faith by responding appropriately to franchisees' concerns about competition	Carefully document any concerns expressed by franchisees about how the brand is being protected as well as how these concerns were addressed
For purposes of Title VII, franchisors may be considered "employers" of individuals working for franchisees	Courts have held franchisors liable for employment discrimination as "joint" employers or agents along with their franchisees	Thoroughly educate franchisees about labor laws during initial training and reinforce this information during ongoing training	Having a labor law expert review the franchisor's training materials Monitor franchisees' performance vis-à-vis labor law compliance just like financial and operational performance is measured

The American Association of Franchise Dealers (AAFD) is an example of an organization that has an accreditation process for franchisors and develops standards relating to the franchisor/franchisee relationship. As expressed in the AAFD's web site, "Over the past 16 years the AAFD has promulgated over 140 Fair Franchising Standards and commentary to give guidance to fair and balanced franchise agreements and relationships" (American Association of Franchise Dealers, 2014). Forward thinking franchisors and franchisees may benefit from such independent assessment. Documenting the outcome of such assessments can be very valuable. Specifically, to maximize its own legal protection, a franchisor should attempt to obtain written certification from any relevant franchise association stating that the franchise agreement appears to be fair to its franchisees.

Raising the Bar on Brand Protection

Access to a franchisor's brand and the intellectual property associated with the brand such as patents, copyrights, trademarks, and trade secrets is a key driver of franchisees' decision to buy franchises. A recent legal development – and one causing alarm among franchisors –

relates to the protection of a franchisor's brand from competition (as opposed to protection of a franchisor's brand from infringement). In Quebec's largest franchise litigation over the past twenty years, a group of 21 former Dunkin' Donut franchisees sued Dunkin' for lost profits and value (Bertico v. Dunkin' Brands Canada, Ltd., 2012). The franchisees claimed that the franchisor was unresponsive to their concerns regarding market infiltration by another donut chain (Bertico, 2012).

The number of Dunkin' Donuts stores in Quebec shrunk from 210 in 1998 to 13 in 2012 – a decline of 94 percent. In contrast, competitor Tim Hortons grew more than 500 percent from sixty Quebec stores in 1995 to 308 in 2005. In an unprecedented decision, the Quebec Superior Court held that Dunkin' Donuts breached its franchise agreements by failing to protect its brand against competition from Tim Hortons in that province. In justifying its award to franchisees of $16 million in damages plus legal fees, the court stated that brand protection is "an ongoing, continuing and successive obligation" of the franchisor (Bertico, 2012).

Although the outcome should concern franchisors, some caveats apply. The decision is not binding outside of Quebec, and it could be overturned by an appeal that Dunkin' Donuts plans to pursue. Also, the court explicitly recognized that a franchisor is not a guarantor of success or an insurance policy for franchisees. Indeed, the court noted some franchises may fail due to poor management by franchisees or changes in market conditions beyond the franchisor's or franchisees' control (Bertico, 2012). Nonetheless, the case makes clear that courts may be willing to hold franchisors accountable for a pattern of failure.

This may in essence redefine franchisors' obligations by requiring them not only to develop and support a viable business model, but also to make decisions about the overall design of their organizations – as such decisions relate to franchisees' interests – a central concern. In response, franchisors should be vigilant about the language they include in franchise agreements regarding their brand protection obligations. Also, franchisors should act in good faith by responding appropriately to franchisees' concerns about competition. To maximize its legal protection, a franchisor should carefully document any concerns expressed by franchisees about how the brand is being protected as well as how these concerns were addressed.

Who Exactly is an Employer?

Title VII of the Civil Rights Act of 1964 (Title VII) prohibits employment discrimination based on race, color, religion, sex (including pregnancy), or national origin.[1] The franchisor-franchisee relationship is *not* an employment relationship governed by Title VII (42 U.S.C. § 2000e). Nonetheless, the courts appear open to viewing franchisors as vicariously liable for employment discrimination committed under Title VII by their franchisees.

This is precisely what happened in *Myers v. Garfield & Johnson* (2010). Rebecca Myers brought an action against Jackson Hewitt and Garfield and Johnson (G&J) – a franchisee of Jackson Hewitt. She alleged that a G&J partner and a G&J manager repeatedly sexually harassed, assaulted, and threatened her when she was a G&J tax preparer. Jackson Hewitt filed a motion to dismiss itself from the lawsuit because it argued that it was not Ms. Myers' employer and, therefore, not a proper party to the lawsuit.

In an unconventional ruling, the court denied Jackson Hewitt's motion. The court reasoned that two distinct entities may be liable for the same Title VII violation not only when they constitute a single employer but also when they are joint employers of the plaintiff or when one entity acted as the agent of the other. Ms. Myers' case against Jackson Hewitt was allowed to proceed because she alleged sufficient facts from which to conclude that either Jackson Hewitt was her joint employer or that Jackson Hewitt was plaintiff's employer by virtue of its actual or apparent authority over G&J's employment practices (Garfield & Johnson, 2010).

This creates a dilemma for franchisors. The more tightly a franchisor controls its franchisees, the more likely the franchisor is to be judged liable for illegal behavior among

1 Generally, to be subject to liability under Title VII, employers generally must have 15 or more employees. Under Title VII, an employer includes private employers, state and local governments, educational institutions, private and public employment agencies, labor organizations, and joint labor-management committees controlling apprenticeship and training.

its franchisees. To the extent that the franchisor relinquishes control over its franchisees, however, this increases the odds that franchisees will deviate from the franchisor's procedures. This in turn can harm the brand. One possible solution for franchisors that wish to maintain tight control of their brand is to train franchisees rigorously about discrimination laws and to monitor franchisees' performance in this realm on an ongoing basis just as they already monitor financial and operational results. Having a labor law expert review the franchisor's training materials can also be beneficial.

A FINAL THOUGHT

It is natural for any organization that appears to be facing increased legal demands for accountability to view such demands as threatening. However, an important positive of this trend for franchisors is that increased scrutiny should enhance franchisees' confidence that they will not be exploited by franchisors. In Williamson's (1985) terms, opportunism by franchisors should become less likely as a result of the court's increased expectations about franchisors' accountability. One possible result is that economic exchanges between franchisors and franchisees will become more efficient as the need for franchisees to be suspicious of – and closely monitor – franchisors' behavior is reduced. By having increased accountability imposed on them legally, franchisors become less risky – and more attractive – business partners for potential franchisees.

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HOW TO DESIGN A TRIPLE BOTTOM LINE ORGANIZATION

A START-UP CASE STUDY

BERNHARD SCHROEDER • ALEX DENOBLE

Abstract: In today's business environment, where success for a start-up company is measured by early revenue and profit, it can be quite challenging to design a triple bottom line organization (people/planet/profit) from the very beginning. We present a case study of a U.S.-based start-up firm and discuss its early challenges, developmental processes, and current success as a triple bottom line firm. The company's founder and CEO, with no initial product, distribution, or revenue strategy, sought to develop a company that could provide the marketplace with a valuable product while also staying true to a corporate vision of positively affecting less fortunate people. Our analysis of the case suggests that the founder's vision, passion, transparent communication, and leveraging of partners' resources were key elements in building the firm. We draw implications of our case study for the designers of future triple bottom line organizations.

Keywords: Triple bottom line, social entrepreneurship, social responsibility, start-up organization, organization design, sustainable business, people/planet/profit

Most start-up organizations are unsuccessful – as many as three out of four fail in their first three years of existence. "If failure is defined as failing to see the projected return on investment – say, a specific revenue growth rate or date to break even on cash flow – then more than 95 percent of start-ups fail " (Gage, 2012). Every entrepreneur knows, or soon realizes, how difficult it is to develop an idea into a profitable, sustainable business. This is particularly true for entrepreneurs who wish to create a "triple bottom line" business, one that serves its customers, makes money, and helps to protect the environment. The triple bottom line concept – people, planet, profit – is relatively new (Elkington, 1997; Norman & MacDonald, 2004), and it reflects a growing societal desire to create and operate businesses that contribute positively to the global economy. Although no official statistics are kept, it appears that the number of successful triple bottom line U.S. firms is quite small.

In this article, we present an analysis of the start-up firm, SOLO Eyewear (http://www.soloeyewear.com). Founded in 2011, SOLO Eyewear is continuing to grow and is meeting its triple bottom line objectives. We have known this company and its founder, Jenny Amaraneni, from the start, and we have monitored the company's development over the past three years. We have conducted numerous interviews with Amaraneni, and that information provides the basis for this case study. The following sections describe, first, how the start-up stayed true to Amaraneni's vision in spite of numerous challenges, and the organizational and managerial processes that were used to build and grow SOLO Eyewear. Next, we identify the crucial elements that a start-up must have in order to create and sustain a triple bottom line company. We conclude by offering a set of practical guidelines that can be used by future designers of triple bottom line organizations.

THE VISION: HELPING A MILLION PEOPLE SEE AGAIN

SOLO Eyewear produces a line of hand-crafted sunglasses made with recycled bamboo materials, with a portion of the funds from each pair sold donated to providing eye care for

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people who are in need of prescription eyeglasses and sight-saving eye surgeries. The idea for SOLO Eyewear originated in a college classroom. While taking a graduate-level International Entrepreneurship course at San Diego State University, Amaraneni was assigned to read Paul Polak's *Out of Poverty* (2009). This book, which focuses on how social entrepreneurship can be used to benefit those in need, inspired her to develop a company that would not only generate profit but would positively impact people. Amaraneni, who has poor vision herself, discovered there was a great need for eye care around the world and decided to research the issue further. While conducting her research, she encountered two startling statistics that strongly resonated with her: (1) approximately one billion people do not have access to eye care and (2) nearly 80 percent of the world's blindness is preventable. Furthermore, she found that worldwide 285 million people are visually impaired; 39 million are blind and 246 million have poor vision (World Health Organization, 2013). To Amaraneni, the fact that this many people in the world have vision problems which, if left uncorrected, will cause them to lose a good deal of their sight or go blind, was a call to action.

Amaraneni's realization about the state of eye care in the world consumed her. How could so many people in the world not receive proper eye care? So began her research into eye care in Third World countries. The core question that drove her was why: Why was this occurring? Why did the world seemingly not care? Why were simple cataract surgeries that cost only a modest amount of money not available for the vast majority of the world's people? An opportunity to help more than a billion people was an important realization that led Amaraneni to set a goal: *help at least one million people see again*. The next step was to build a company to accomplish that goal.

Amaraneni researched potential products, manufacturers, and even non-profit organizations. She found that corporations who embrace the triple bottom line concept have a higher level of financial performance compared with corporations that do not (Berger & Cunningham, 2007; Castka et al., 2004; Esty & Winston, 2009; Giovanni, 2012). With the current American consumer environment leaning toward sustainability (green products, environmentally responsible companies, etc.), she saw limitless possibilities for a triple bottom line company. Surprisingly, she discovered that few triple bottom line companies exist in the United States.

All of Amaraneni's acquired knowledge has kept SOLO Eyewear singularly focused. Through the use of an initial Kickstarter campaign, SOLO Eyewear gained valuable international exposure allowing individuals around the globe to learn about and support the company's brand and mission. To date, SOLO Eyewear has had online sales in 29 countries, and the company has helped improve the eyesight of more than 9,000 people in 19 countries through providing either new eyeglasses or cataract surgery. This has resulted in an economic impact of over $3.3 million. Additionally, thousands of people have purchased the company's products and have become evangelists for the company. SOLO Eyewear has received considerable media attention (e.g., *The CW, Glamour, MSNBC, Men's Health*) and was even featured on the *Forbes* magazine website. Publicity and admiration have attracted potential partners, customers, and staffers who are aligning themselves with the company's mission.

CHALLENGES AND SOLUTIONS

Like any start-up, SOLO Eyewear faced numerous business challenges. However, throughout the early stages of its development, Amaraneni was determined to keep the company focused on people and planet as well as profit.

Pressure to Perform

When Amaraneni developed the purpose of SOLO Eyewear as one that would help restore eyesight to people in need, implementation seemed like a fairly straightforward process: identify a product, design it with sustainability in mind, market it to a large enough target audience to produce a profit, and help people in need by aggressively pursuing the company's mission of helping a million people see again. However, this was not as simple as it seemed. Amaraneni discovered that the process of starting a company without any previous entrepreneurial experience was incredibly humbling. Once she began communicating the

vision of the company and started down the path of doing research, designing products, building a website, and acquiring needed resources, she realized that her commitment to others would require the creation of a serious company that could compete in the global economy. The pressure to develop the company, against the backdrop of her vision, is what compelled Amaraneni to work through the issues and obstacles SOLO Eyewear faced early on.

Identifying Target Customers

Prior to conducting any significant market research, Amaraneni believed that college students would be the best target customer because of her similar age and status to the consumer group. She also felt that the specific age group would be the target market most likely to embrace the company's vision. Therefore, initial strategizing about retail distribution, public relations, and marketing focused on the college campus marketplace in her hometown, with the hope to expand to campuses across the U.S. However, once Amaraneni and her team began to search for opportunities, it became apparent the college target market was too narrow. Statistics showed that customers who had discretionary income, solid jobs, were environmentally friendly, and supported social causes were slightly older and more urban. Once the target market was adjusted, Amaraneni was able to create more retail distribution opportunities with stores that served this demographic and offered products that were unique, sustainable, and cause-driven.

Product Design and Manufacturing Issues

An integral part of building a triple bottom line company is offering target customers a valuable product or service that functions as the revenue base of the company, while meeting both the people and planet aspects of the company's mission. Amaraneni chose to offer the marketplace a unique product that included bamboo wood. While in large supply, and known for its ability to grow quickly, bamboo can be a difficult material to work with when the product design calls for bonding of components and ease of manufacture. As Amaraneni had no previous experience constructing a product that incorporates plastic and bamboo, she identified a contract manufacturing company to develop the product. Unfortunately, the very first fulfilled order had serious quality issues.

In its efforts to use a sustainable element in the design of its products, SOLO Eyewear faced a dilemma early on. The use of bamboo required the bonding of two different materials in the manufacturing process. Without in-depth knowledge of how to get the product manufactured, Amaraneni did initial online research and created a short list of several offshore manufacturers who developed products similar to, but not exactly alike, SOLO Eyewear's. None of the manufacturers Amaraneni identified had ever worked with bamboo in the manufacturing process. In hindsight, considering the "value" of the brand and the fact that a company only launches a brand once, Amaraneni should have done more due diligence or sought out expert assistance in the selection of the original manufacturer. However, Amaraneni ordered a few samples from the manufacturer and they seemed well produced. She ordered the first run of 1,000 units to be sold in a few retail locations and online via the company website. After about 500 units were sold, she learned there was a massive quality problem – the sunglasses were coming apart where the bamboo connected to the plastic. Customers began contacting SOLO Eyewear with complaints about the new product.

Doing What Is Right

It is not often that you create a triple bottom line company with the vision and passion that Amaraneni exhibited. Launching environmental initiatives along with a new business involves significant up-front costs and can produce uncertain results, but the payoff in the end can be rewarding for all involved if a corporation follows through (Esty & Winston, 2009). Amaraneni was rocked by the news that the product was falling apart in the customers' hands. More than embarrassing, this issue was challenging the very existence of SOLO Eyewear and its ability to help people in need. If not corrected immediately and to the customers' satisfaction, the manufacturing fiasco could ruin the brand, and subsequently the company,

and ultimately the mission. Amaraneni decided to immediately cease sales of the product, pulling it from the two retail locations and the website.

Amaraneni examined the remaining inventory and discovered that more than half of the items were defective. In an effort to continue the transparent communication she exercised in the past with early followers, partners, staffers, and retailers, Amaraneni e-mailed all existing customers and informed them about the manufacturing problem. Although this was an extremely risky decision, she viewed it as "the right thing to do." She also posted a note on the company website guaranteeing all customers that they would receive replacement products or their money back. Over the next six weeks, Amaraneni and the SOLO Eyewear staff e-mailed and updated customers via social media almost daily on how they were addressing the issue. In addition, the firm used some of the revenue generated from sales to fund eye surgeries in India, following through on the mission of restoring eyesight to those in need. SOLO Eyewear communicated those successes to both prospects and customers, and doing so cemented the customers' decision, despite the product's problems, to continue to support the company.

Satisfying Customers

The core objective of any company is to ultimately satisfy its customers (Sridhar, 2012). Customer satisfaction is critical to building a reputable brand, let alone a start-up company. Amaraneni had tremendous empathy for helping others and began to openly communicate with customers who had purchased defective products. Informing customers of the nature of the problem and the steps the company was taking to resolve them allowed for open dialogue between the company and its customers. By offering customers immediate replacement of the defective products or their money back, Amaraneni was reinforcing the principles of not only a triple bottom line company but any potentially great company. When SOLO Eyewear ran out of replacement products, they communicated with both existing customers and customers who had pre-purchased the product online (but hadn't received the product yet). What happened next amazed SOLO's founder. Customers were presented with the option to either wait six weeks for a replacement product or receive an immediate refund. Out of 1,000 orders, only five customers asked for their money back. The remaining 995 decided they would wait for the replacement product. This was strong evidence that SOLO Eyewear customers believed in the mission of the company and had bought into Amaraneni's dream of helping less fortunate people.

Protecting the Brand

Given her experience with the product-quality problem, Amaraneni realized SOLO Eyewear should continue open communication with the community. Honest and open communication would not only allow SOLO Eyewear to share product resolution plans but also focus attention on the brand. SOLO Eyewear was receiving good media exposure, both locally and in India where the first surgeries were being performed by a non-profit partner. Once the news of the first surgeries hit the U.S., it generated attention both online and in local news outlets via news shows and subsequent interviews with local print media. By engaging its stakeholders, SOLO Eyewear assured them that producing a high-quality, environmentally friendly product and helping others could be achieved simultaneously, a concrete outcome that served to improve the firm's image. The focus shifted to how this small start-up was helping others and not so much on the product problems. SOLO Eyewear leveraged all this attention to communicate that it would release a new fall line and began to take pre-orders again on the website and continued to sign more retailers to its distribution plan. However, Amaraneni had not identified a reliable manufacturer to produce the new fall line.

Organizing Partners and Suppliers

Amaraneni realized she did not have sufficient expertise to select a manufacturing partner. This realization led her to begin aggressive networking with individuals more informed about manufacturer selection. The input and recommendations from experts persuaded her that product design would have to undergo a major increase in funding. Ultimately, the

changes in product materials and manufacturing resulted in a tripling of the retail price of the product. This was an astounding increase — and clearly one that would not appeal to the original target market. Therefore, SOLO Eyewear decided to redefine its target customer. It began to target retailers who specialized in selling products that supported social causes and sustainability. The company found that the product actually fit very nicely into this retail marketplace at prices ranging from $75 to $125. This new price point allowed Amaraneni to select a premium manufacturer who demonstrated the ability to produce a high-quality product. A major benefit of the pricing change would be that the company, if successful in the marketplace transition, would generate more revenue and profit which would mean helping even more people in need. With the new manufacturer on board, the last step was to obtain funding to place the production order for the fall line of the newly designed product.

Creative Financing

In reviewing the feasible financing options, Amaraneni consulted with several advisors about potential funding strategies. However, she did not want to relinquish any additional equity at that time. One of the company advisors suggested a meeting with another founder who had just successfully raised money on the crowd-funding website Kickstarter. Kickstarter offers start-ups an excellent way to raise money without giving up equity. Based on the meeting between the two founders, and with some additional research, Amaraneni made the decision to pursue a fundraising effort on Kickstarter. By putting together a compelling story and video, and creating a strong online and social media marketing campaign, Amaraneni raised $33,000 – enough to fund the manufacturing order for the new fall product line.

Creating Evangelists for the Company

The founder of Toms Shoes, Blake Mycoskie, stated that his company is proving that incorporating giving into a company's business model can be good for business. He said, "My customers are my biggest evangelists" (Binkley, 2010). From the very beginning of SOLO Eyewear, Amaraneni believed that the actual end product of the company was not eyeglasses but the number of people they could help receive eye care. Amaraneni repeated this vision to everyone she interacted with, whether an advisor, a potential staffer, an intern, a customer, a retail distributor, or the news media. The story was always the same and carried a strong emotional component. "We are creating a company that will ultimately restore eyesight to over one million people." This vision, along with telling people exactly what was occurring in the company (transparent communication) created a very loyal following. More than 300 people attended SOLO Eyewear's fall launch preview, and the company has attracted more than 15 interns who volunteer to work 10-12 hours each week. The interns volunteer their time because of their dedication to SOLO Eyewear's mission, and they frequently communicate their approval of the company and how they are helping restore the eyesight of those in need. Amaraneni rewards their support with a weekly meeting where each intern's work is celebrated in a group setting. Rusticus (2006: 48) noted that this kind of loyalty, among both staffers and customers, is based on the credibility of the company: "The power of word of mouth advocacy derives partly from its credibility. While only 14 percent of people believe what they see, read, or hear in advertisements, 90 percent believe endorsements from their friends and acquaintances." Creating evangelists is critical to a start-up firm, especially one with a triple bottom line brand.

Bootstrapping…Always

As discussed by Gage (2012), bootstrapping a business is challenging, particularly when those involved in building the company may not be drawing a salary, and financial resources are being depleted while not being replenished. Since the beginning of SOLO Eyewear, Amaraneni has bootstrapped effectively, being very creative in keeping company expenses to a minimum and figuring out how to do more with less. Even though the product is sold online and in more than 50 retail locations (soon to expand to over 300), SOLO Eyewear still houses its corporate office in the founder's condominium. Meetings with interns are either held on the university campus or a co-located workspace. There is no significant capital

for marketing, so the use of cloud-based tools, social media, Skype, social meetings, and marketing events, are the norm. The concept of leverage in almost every capacity is critical to the success of SOLO Eyewear. For a recent news media video, a loft location for the video shoot was located and used free of charge. Even today, nearly three years after the start of the company, Amaraneni is as economical as ever, and every expense is examined for reduction or elimination.

ANALYSIS

Several researchers have studied triple bottom line firms and their impact on both the local and global economy (Elkington, 1997; Kleindorfer, Singhal, & Wassenhove, 2005; Norman & MacDonald, 2004; Orlitzky, 2005; Pava & Krausz, 1996; Waddock & Graves, 1997; Willard, 2002). Orlitzky, Schmidt, and Rynes (2003: 406) concluded that "…social performance is positively correlated with business financial performance." In addition, researchers have attempted to define those founding factors that are essential for a triple bottom line firm to succeed.

Vision

Creating a triple bottom line company, one that produces a profit, helps people, and has a positive impact on the planet, requires vision and patience. Vision articulates the overall goal, and patience is needed for the long journey of building the company. Berger and Cunningham (2007) note that a clear and inspiring vision is integral to developing a firm from inception. They go further to state that it is essential to have the corporate social responsibility values and perspective fully defined before having a business plan. In today's competitive marketplace, competitors and "me too" companies potentially will deliver similar goods and services. In some cases, building a triple bottom line company will mean higher prices for the company's products. However, the differentiator that allows for a higher price is the notion of a powerful brand that is seen as helping people and the planet. Start-up companies need the courage to be different and "sincere", with respect to a triple bottom line mission, as that alone could lead to a successful entry into the marketplace. At the core of a triple bottom line company is the founder's vision and aspiration.

Leadership and Capabilities

Amaraneni recognized early on that SOLO Eyewear needed to recruit several people to the company's "cause" in order to design an initial product, create a brand/identity, locate a manufacturer and other suppliers, build a website, and contract with retailers to test the business model. However, the founder realized growth could not occur without finding talented individuals willing to commit to the company's cause. As was found in a survey of over 800 MBAs from 11 leading schools across North America and Europe, a large number of the respondents were willing to trade personal gain to work for an organization known to support social causes. The study found that "…over 90% of the MBA respondents were willing to give up some income in order to work for an organization which cares about employees," and "… over 94% were willing to sacrifice some income to work for an organization that cares about stakeholders such as the community and commits to sustainability" (Montgomery & Ramus, 2003: 9). In the case of SOLO Eyewear, Amaraneni was able to effectively recruit several people to her company who had a diverse set of skills. She communicated the company's mission in such a powerful way that people worked part-time, sometimes without pay, to help get SOLO Eyewear off the ground.

Amaraneni was able to leverage her ability to communicate and network into partnering with key non-profit organizations in a short period of time. In addition, people recruited to the start-up company felt that she had a high degree of integrity and honesty, as she made a point of having open and transparent communication. Rick Lenny, the CEO of Hershey Co., stated, "What makes a good CEO today is what will always make a good CEO and what has in the past: strong values, great personal integrity, and a willingness to make tough calls. But it certainly requires an openness and transparency with the multiple constituents" (Savitz &

Weber, 2006: 3).

The leadership qualities of the founder instilled an even higher sense of loyalty and commitment from the staff. Staffers also sensed a strong work ethic as Amaraneni worked long hours each day to research potential manufacturers, review distribution alternatives, and learn more about building a sustainable product. Wirtenberg (2012) points out that triple bottom line leaders seem to seamlessly integrate people, planet, and profit, and they view it as the proper way of doing business. These leaders "convert challenges into opportunities through which they can make a difference, innovate, and discover adaptive capacities in themselves and their people" (Wirtenberg, 2012: 8). Amaraneni also continually reminded all of the staff, sometimes daily, of the company's vision: *help at least one million people see again*. Quinn and Baltes (2013) state that the three most critical individual leadership competencies necessary to adopting triple bottom line approaches are long-term view, communication, and influence. In this respect, Amaraneni was able to hit on all three leadership qualities through articulating the vision, evangelizing the company's mission, recruiting and building a strong staff, and leveraging key partners.

DNA of the Founder

The makeup or "DNA" of the founder is critical to the future success of a triple bottom line company. Firms are created by entrepreneurs who have a vision of how concerted effort can create a new product or service in the marketplace (Schein, 1983). The founder becomes the anchor point for everything the future company does, including creating a culture that supports the core elements of a triple bottom line company. In an organization's infancy, culture develops and matures based on the imagination and vision of the founder (Hillestad, Xie, & Haugland, 2010). The founder's core beliefs, as they relate to the mission, must be unwavering in the face of obstacles and challenges. The notion of "helping others" is not just a desire or wish; it is intrinsic to the make-up of the founder.

Amaraneni grew up in a household where both parents held professional occupations in the healthcare field. Her parents believed that everyone should receive a good wage for services rendered. In starting SOLO Eyewear, Amaraneni remembered that message but believed that if the company helped others first, good wages would follow. Such strongly held beliefs are very important as a start-up company attempts to imprint its values on both its customers and staff.

A Cause that Matters

By examining other successful triple bottom line companies, such as Toms Shoes, NIKA Water, and Ben and Jerry's, it becomes clear that consumers want to identify and emotionally connect with the company's overall mission. That mission needs to be clearly communicated in every way possible so the consumer "believes" in the cause by purchasing the company's goods or services. Customers seek information prior to purchase based on the company's portrayal of itself in a non-financial manner. "There is a growing trend among consumers to know not only the quality of the product but also the quality of the company they buy it from" (Sridhar, 2012: 82). Consumers justify a purchase or even a higher price for a product or service by connecting it to a social cause (Giovanni, 2012). They make statements such as "I buy these shoes because the company donates a pair to someone in need" or "I buy this bottled water so someone in a Third World country gets access to clean drinking water." So having a mission that matters to your target market segment can differentiate a company.

A Viable Marketplace

An important first step when developing a triple bottom line company with an intended product or service is to identify and verify the size of the target segment in the marketplace. Amaraneni initially identified her target market as 18-30 years old, socially conscious, environmentally oriented, and urban or college dwellers. After doing more research, however, she was able to identify a product that potentially could be sold to over 100 million people in the United States. This tight focus inside of a larger market is what allows a company to acquire word-of-mouth support and grow into the larger market over time.

Building a Sustainable Business Model

While sustainability (in terms of environmental impact) is critical in the design of any triple bottom line organization, it is equally important to understand the need to develop a sustainable business model. While this may seem like an obvious requirement, many founders forget the importance of initially determining a sustainable business model. Elements of a potential business model can include the following: (a) value proposition: your unique benefit to your customers; (b) customer relationship desired: how you would like your customers to feel and interact with you; (c) target segment: the customers you would like to reach; (d) distribution channels: how you plan to get your company's product to market; (e) cost structure: understanding all product costs; (f) revenue options: identifying where you might drive sales; (g) key resources; (h) key activities; and (i) key partners (Osterwalder & Pigneur, 2010). The business model should also be financially sound so as to produce a profit. Potentially, these funds would go right back into the company to drive additional inventory and revenue. Amaraneni was able to develop a financially sustainable business model that has allowed SOLO Eyewear to achieve its triple bottom line goals.

IMPLICATIONS FOR PRACTICE

Based on our analysis of SOLO Eyewear, we draw several implications for designing a triple bottom line company. While there are similarities between a company designed to follow the triple bottom line model and traditional corporations, there are also some distinct differences in their main concerns and practices.

People

A company seeking to follow the triple bottom line method of doing business must consider the impact its actions have on all stakeholders. Stakeholders include everybody involved with the company, from customers, to the community where the company operates, to the CEO. A company should be designed with the idea of benefiting all parties involved. It should have a compelling vision that is centered around the idea of helping others and giving back to the community. A triple bottom line company must be developed in a way that the organization is accessible by the community. The communication between the company leaders, the staff, and the public shoud be open and honest, and the organization should actively interact with the people it is seeking to assist in order to remain humble and maintain its focus. Traditional companies engage in charitable giving; triple bottom line companies design helping others into their business models.

Planet

A company operating under the triple bottom line model should be designed in a manner that minimizes its ecological footprint. The company should strive for sustainability. While recognizing that "going green" may in fact be more profitable in the long run, designing an environmentally friendly company is not simply about positive financial returns. Triple bottom line companies look at the entire life cycle of their actions and try to determine the true cost of what they're doing in regards to the environment. A triple bottom line company should look to have sustainable practices, such as using recyclable materials, minimizing energy usage, safely disposing of any toxic waste it produces, and using renewable energy sources.

Profit

All companies, whether triple bottom line or not, seek to have positive financial returns. When considering a triple bottom line company, however, the idea is that profit will assist with empowering and sustaining the community as a whole, and not simply the staff and leaders of the company. With SOLO Eyewear, the idea is that every purchase assists a person in need of eye care who would otherwise not have access to such services. The profit not only flows to the founder and staff; a significant portion is used to help those in need. A triple bottom line company should develop a high-quality product or service that will reach a large

market and should be targeted toward a segment that is connected to the vision and mission of the organization. Such a design can generate profits that support both the company and the community.

CONCLUSION

Jenny Amaraneni and SOLO Eyewear have come a long way over the past three years. What was once an aspiration is now a fully functioning company, selling products successfully in a competitive marketplace and delivering on its mission of helping others. Amaraneni articulated a compelling vision and motivated a large number of people to join the mission and purchase the firm's products. The focus of SOLO Eyewear is still clear: continue to deliver a high-quality product to the marketplace in order to fuel additional care for at least one million people. Amaraneni has struggled through many important decisions that at any time could have derailed her company, but she never considered sacrificing any aspect of people, planet, or profit. She knew profit was critical but realized the importance of helping people while maintaining a small environmental footprint.

Having survived the early growth stages of the company, Amaraneni is now focused on expanding SOLO Eyewear through both regional and global distribution. The company has been approached by a major retailer that is looking to add SOLO Eyewear to its product line potentially in more than 200 locations. As the company continues to grow and generate more revenue and profit, Amaraneni will look to build out the management team and connect with more resources. Regardless of SOLO Eyewear's growth, Amaraneni and the company will not lose its focus on helping to restore vision to others in need. Thus, SOLO Eyewear is an exemplar among those firms pursuing the triple bottom line method of doing business.

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JAY R. GALBRAITH MEMORIAL PROJECT

Jay R. Galbraith passed away on April 8, 2014. Jay was a leading authority on organization design, a founding member of the Organizational Design Community, and a valued contributor to the *Journal of Organization Design*. We invited Jay's colleagues from around the world to offer their comments on his work. The specific question we asked was: What ideas or insights regarding organization design have you obtained from the work of Jay Galbraith? As you will see from the comments below, Jay provided many valuable contributions to the field of organization design, and he was a caring, generous colleague. He will be greatly missed.

Børge Obel
Charles Snow

Jay Galbraith was my friend and colleague at TruePoint, a management consulting firm I co-founded and that Jay was associated with as a Director. He was a giant in the field of organization design and effectiveness. Jay's information-processing theory of organizations was foundational. It provided an essential lens for understanding what makes organizations effective and an analytical framework for developing alternative organizational designs.

Jay's work on matrix organizations was groundbreaking. He was the first to see that matrix designs were in the future of all complex, global, and customer-centric organizations that seek to move up the value chain to sell solutions. His grounded research informed academics and practitioners alike about the critical design features for a well-functioning matrix.

Jay's genius was to anticipate, as he did most recently with big data, future business trends, find best-practice examples of organizational design solutions, and then provide an analysis of why and how those design solutions were effective answers to the trend. This in turn led him to develop sound and analytically rigorous recommendations for practitioners. Jay was the epitome of the scholar-practitioner working at the interface between theory and practice, a professional identity and style of knowledge creation of which we need more. In this regard, Jay's professional life is a model that all of us should try to emulate. It is why he was awarded the Academy of Management's Scholar-Practitioner Award.

Jay died in the middle of an organization design consultation, of which Russ Eisenstat and I were a part. Indeed, he had a call with the client planned for two days after he died. He had a book on big data in the works. Jay's identity was closely tied to his professional work, and this stirred a work ethic that fueled his many accomplishments as a researcher, theorist, and practitioner. More importantly, Jay was a great human being. Despite his world-class professional standing, he was a humble and collaborative professional colleague we should all emulate.

Mike Beer
Emeritus Professor, Harvard Business School

Jay Galbraith was a rare individual. As an academic, he spoke to practitioners. As a practitioner, he spoke to academics. How was he able to do this? He began with the fundamentals of information processing which he developed early on. In his 1974 *Interfaces* article, he proposed that greater task uncertainty requires greater information processing for a given level of performance. The organizational design problem was to find an efficient balance between (a) the reduction of the need for information processing with slack resources or self-

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contained units and (b) an increase in information capacity with better vertical information systems or the creation of lateral relations. It was the early days of matrix organizing which Jay saw, understood, and put into the theory and practice of organizational design. His information-processing view was real to the manager who had to decide, communicate, and coordinate. For the academic, Jay's model was an organizational reality for framing the organizational design research challenge. It was fundamental then and is today. One way to judge a research contribution is its life span. Today, I ask my Ph.D. students to read this paper. They often ask: Why aren't there more papers like Jay's? The answer is simple: Jay got it right early on and it still stands. We continue to build upon his foundational insights. It is a rare contribution and a great legacy.

As a person, Jay had style: he listened more than he talked; he was not puffed up; he was self-deprecating; he had a good sense of humor; he spoke softly; he let his ideas carry the discussion; he was self-critical but also confident; he was firm without exaggeration; he enjoyed life as he found it.

Richard Burton
Professor, Duke University

I was intimidated by Jay's reputation when I first met him about 15 years ago. From his work, I knew how impactful his ideas had been in both the academic community and industry. As a person, I found the same pragmatism and lack of pretension in Jay that he displayed in his work. What his work didn't adequately reveal was what a warm, supportive, compassionate, and fun person he was. That combination: hugely influential, while being modest and collegial, made me a huge fan of Jay. I still am.

Timothy Carroll
Associate Dean, Moore School of Business, University of South Carolina

Jay Galbraith made many contributions to organizational design. He was particularly good at taking the different organizational designs found in the real world and articulating them within a general theoretical framework. Of his many excellent ideas, the one that most influenced me was that organizations have a volume of information to process in order to help them reach their goals, and structures and processes are the mechanisms for accomplishing this task. In saying this, I feel I am not sufficiently capturing the magnitude of his contribution to organizational design. He will long be remembered by many of us.

Lex Donaldson
Professor, Australian Graduate School of Management

Naturally, the primary thought about Jay Galbraith's contribution to the world of human resources is the Star Model. It is probably the most used idea across the global human resources community. Besides that, Jay Galbraith is really the father of organizational design practice as it exists today. Although he didn't write all of the books, he wrote many of them. And the other books were based on his groundbreaking work. We used Jay Galbraith as a consultant at my current employer, and in addition to his textbook knowledge he had interpersonal abilities that could bring any two opponents together in an organizational design project and get them on the same page. I saw it happen several times. He was a keen observer of organizational dynamics and could come up with the best answer to organizational issues, one that was stated clearly and worked.

Edward Drumm
Corporate VP, Human Resources Administration, Laureate Education, Inc.

Jay Galbraith's 1976 book, *Organization Design*, was to my knowledge the first book to articulate the important idea that organization designs must include a focus on the transfer of information. Jay's book influenced my work from its publication onward, particularly my 1982 and 1983 *Management Science* articles on the same subject and my 1990 *Academy of Management Review* article and 2004 book, *The Necessary Nature of Future Firms*, both of which draw heavily on this idea. Jossey-Bass asked me to review the second edition of Jay's *Designing Organizations* (2002) for the purpose of making suggestions for the third edition (2014) of the book. I benefitted greatly from engaging in this task. Both editions richly explain the important connections between organization design and design implementation, and will certainly influence my work going forward.

George Huber
Emeritus Professor, University of Texas

Currently, I am the Global Business Process Owner for Performance Management at Cummins, Inc. in Columbus, Indiana. I had the pleasure of working with Dr. Galbraith in 2011 when I was the Global Organizational Development Manager responsible for increasing the capabilities of human resources and other units at Cummins. I hired Dr. Galbraith to do a customized workshop. I authored the case study material used in the course under his coaching and guidance. He told me that it was very well written and comparable to that of Harvard Business School students. I also designed the workshop and developed the material, leveraging Jay's expertise and wisdom as a sought-after thought leader in organizational design. He was a humble man of great wisdom and knowledge. I learned from him the art of building a real-life case study that could be further developed and leveraged post-training. It was an incredible experience to work with him, and he will truly be missed in my life and the lives of many, I'm sure. Thank you so much for the opportunity to work with you, Jay, and to share my thoughts. May God bless you now and forever and those loved ones you left behind.

Jácquelyn Eley Jean-Claude
Cummins, Inc.

I first met Jay at the national Academy of Management meeting in Kansas City in 1975. I had already thoroughly studied his groundbreaking first book, *Designing Complex Organizations*, as part of a field experiment in matrix structure I was conducting at the time. He was already a mentor to me, even though the relationship was only through his writing. He hired me at the Wharton School when I finished my Ph.D. that year, and I inherited his great course in organizational design when he left Wharton shortly thereafter.

Jay was not only my mentor; he was also a close personal friend. Because we often worked and traveled together I got to know him very well. Others contributing to this project will undoubtedly speak of Jay's many contributions to organizational design. I believe that my comments will be most interesting and complementary to those of others if I focus not so much on his achievements, which were many, but the way he thought about things, his personal qualities, and why his work is so valuable.

Once while having dinner and discussing organizational design (as we usually did), Jay provided an elaborate and convincing argument that academics were not advancing the field of organizational design. In his opinion, it was managers who were innovating new organizational forms, and he believed that academics must look to those innovations as a source for advancing the field. The search for new organizational forms dominated his career as both an academic and a consultant. When he found new forms, he added something to them that speaks to the personal qualities I mentioned above and that greatly inform the theory of organizational design.

Jay was very humble for a person with so many accomplishments. He studied with James D. Thompson and was deeply influenced by his thinking, as was I. Jay often said to me he really hadn't added much to organizational theory – all that he had done was "re-say Thompson, in

words that people can understand." Of course, it was far more than this, but Jay's humility and interest in practice resulted in the greatest contributions to the field of organizational design of any scholar to date. Jay studied new organizational forms that emerged with their roots firmly in practice, but did it in a way that made fundamental and enduring contributions to theory. He always worked from practice to theory and not the reverse.

When I left Wharton to join the Tuck School at Dartmouth in 1983, one of my then senior colleagues remarked that this would be good for my career. I asked him why, and he said that I was a promising researcher who had been led astray by Jay Galbraith. Jay and I often laughed about this, usually in a great restaurant, while working on a project of significant practical import. Like the protagonist in Robert Frost's poem, "The Road Less Taken", I believe that I too "took the road less travelled by, and that has made all the difference."

Thank you, Jay, for showing me the way.

William F. Joyce
Professor, Dartmouth College

This may sound simplistic but Jay made me realize how much people matter in implementing an organization design. Though "people" have always been represented as one point in his Star Model, it was his later work on matrix organizations and information flows through senior personnel that really hit home the importance of aligning internal stakeholders and decision makers. His examination of how organizations can effectively use executive rotation programs to foster this alignment and better process knowledge was a significant contribution to understanding the issues of increasingly complex organizations.

Samina Karim
Associate Professor, Boston University

The question of "What ideas or insights regarding organization design have you obtained from the work of Jay Galbraith" is not easy for me to answer briefly. I knew Jay for twenty years, and no one has been more important to my professional identity, success, and knowledge base as he has been. As a young consultant, when I first heard him speak at Citibank in 1994 I didn't honestly understand what he was talking about, but I knew this was someone I wanted to learn from. When he asked my late partner, Diane Downey, and me to write a workbook with him in 2000 it was an honor. That work became the start of my deep education in organization design. Over the next ten years, Jay and I taught organization design, spoke at conferences, consulted with clients around the world, and wrote another book together. I see my professional focus as building on Jay's work and spreading his ideas, now with my partner, Greg Kesler.

Every book, article, presentation, and program that I am involved with always starts with the Star Model. That profound model is at the core of everything I do. But, another idea of Jay's also pervades almost all my work. He taught me about complexity. I frequently paraphrase him: "A complex strategy cannot be achieved with a simple organization. But, you must keep it simple for the customer and the front-line employee. Therefore, it is management that has to shoulder the complexity of multi-faceted strategies and multi-dimensional organizations. That is why we need to focus on management processes, building networks, and creating metrics and people processes that encourage collaboration where it is needed." Regardless of what a leader is specifically trying to achieve, I find that following this straightforward guidance always leads to a better design and a clearer path to successful implementation.

Amy Kates
Co-founder, Kates Kesler Organization Consulting

Jay stands out as the single most important thinker in the field of organization design, to be sure. His influence on me started in the fall of 1975 in a graduate course where his book on strategy execution was required reading. His first book in the Addison-Wesley OD series was the next of his books added to my early library. So the impact of his work was foundational for me, and it is impossible to over-state the importance of that work for a 24-year old, aspiring OD professional.

There are two things that stand out, however, as I reflect back over the subsequent forty years of his work. The first is his true originality. There is simply no one who created as much original thinking in the field. In a way, most of the work that others did was derivative of Jay's books, which kept coming over the years, always with new thinking and constructs for the rest of us to work with.

The second standout for me is the extent of his global business knowledge. Jay was a business management expert first. His understanding of financial markets, global competitive markets, and industry segment knowledge astounds me. His work was all the more impressive due to his ability to connect his organizational models to the business world that companies are struggling with. And he kept that business knowledge current, evident in his later writings on the impact of digital technology on business and organization.

His impact on the field of organization development is well known to all. His impact on my thinking and approach to the field was simply enormous.

Greg Kesler
Co-founder, Kates Kesler Organization Consulting

I came across Jay Galbraith's work while participating in ODC's conference on Big Data and Organization Design in 2013 and deliberating the implications of big data and analytics for organization design. Galbraith may be best known for his Star Model, but for me his conclusions on the co-development of strategy and structure have been of particular value. His insights pertaining to the need for multi-dimensional matrix structures in the face of increasingly complex organizational contexts are ingenious and of perennial quality.

Janne Korhonen
Ph.D. Candidate, Aalto University

Jay Galbraith was a pioneer and leader in the field of organizational design, helping to establish the field as a proper business and academic discipline. His famous Star Model recognizes the point that business capability is critical to the success of a business, and it requires structure, process, rewards, metrics, and talent to be aligned with the strategy of the business to establish such a capability. Great work, great man.

Paul Lambert
Associate Director, Hay Group

During my thirty-plus years of knowing Jay and using his Star Model, I can say it profoundly impacted how I (and Procter & Gamble) thought about organization design. This powerful tool taught us about the need to: (a) look at an organization's design holistically, (b) begin with strategy (or purpose) and then address the other organizational building blocks, and (c) recognize that design is all about making choices.

Most importantly, I learned from Jay how to be a consultant, teacher, mentor, and friend. He was ALWAYS there when you needed him. He was a voracious learner, always seeking to pick up new ideas. He loved life and will always be someone I deeply admired and sought to emulate.

Keith Lawrence
Procter & Gamble

Jay Galbraith's brilliant insights about knowledge work in engineering organizations have been seminal to my research over the past three decades. Jay's primary insight for my work was that "exceptions" – information/knowledge shortfalls that arise during task execution and thus require input from others – can be viewed as simply another kind of knowledge work that adds to the quantity of work to be done by members of an interdisciplinary project team. This insight was the inspiration for my research group to develop the Virtual Design Team simulation of cross-disciplinary project organizations engaged in fast-paced, concurrent engineering work.

Inspired by Jay, my graduate students and I quantified the magnitude of exceptions in typical engineering organizations and implemented a discrete event simulation of information processing and flow through an organization required to carry out direct work, supervision, and coordination. Following Jay – and Burton and Obel – we assumed that organizations must have the requisite information-processing capacity at every node to process the amount of information needed to carry out direct work, plus handle exceptions related to both supervision and coordination. Moreover, following Jay, we asserted that this is a necessary but not sufficient condition for successful project execution. Jay and I talked about how requisite information-processing capacity was the equivalent of "information-flow physics" for project or company organizations. Using a civil engineering analogy from my own field, if the physics is wrong, the bridge collapses immediately. If the physics is right, the longer-run success of the organization (or bridge) depends on getting the chemistry correct to avoid "corrosion" and attendant loss of load-carrying capacity.

Jay's subsequent work on the "physics and chemistry" of matrix organization structures and how to make them work effectively was also an inspiration for much of my own organization design consulting to large, multidisciplinary engineering and construction organizations.

Jay was both an insightful and constructive critic of our project organization simulation research, and an inspiring mentor and colleague in consulting engagements in which we collaborated.

I join my colleagues in the Organizational Design Community in celebrating Jay Galbraith's prolific and influential writings on organization design, his inspired teaching at multiple universities and conferences worldwide, his path-breaking organization design consulting practice, his good humor, and especially his decency and humility. Jay will be sorely missed by our community.

Raymond E. Levitt
Professor, Stanford University

My work on organizational design has been heavily influenced by Jay Galbraith's contingency and information-processing perspective, which I believe has become even more relevant and insightful given that (a) today's environment is becoming increasingly dynamic and relational in nature, and (b) organizational researchers like myself have relied more on information-based modeling techniques that can account for more contingency conditions.

Zhiang "John" Lin
Professor, University of Texas at Dallas

I consider Jay Galbraith to be the preeminent thinker in the field of organization design. As such, Jay's thinking informed most everything I do in my work. Whether it is his own perspective or the clear way he summarizes the field, it is impossible for me to pick out a specific idea or insight as it is the whole of his thinking that informs my practice. I will miss his reflections on how organizations optimally operate and his clear way of describing the sometimes complex issues associated with design. I will continue to draw on his writings and, hopefully, generate new insights to make up for his absence.

Eric Lloyd
OD Director, The Clorox Company

Jay's work on the information-processing view heavily influenced our studies on the use of collaboration software in large multinationals in the 1990s, especially on complex global machinery construction projects (and the impact of using Lotus notes software on coordination challenges). This resulted in a widely used Harvard case, a dissertation, and several articles. We are still following his ideas in how software development work is coordinated in open source software projects. His ideas are always inspiring due to their simplicity, clarity, and conceptual power.

Kalle Lyytinen
Professor, Case Western Reserve University

It is Jay Galbraith's explanation about organization design through his Star Model that shows an organization is more than just a structure; an organization includes processes, people, and rewards as well. Galbraith communicates this message about organization design with equal success to three different worlds: academe, practice, and students.

Academe speaks the language of scientific theory using words in a way to describe a coherent and internally consistent system in which conclusions follow given laws and premises. The world of practice seeks empirical content – words that refer to things that can be observed, or at least have implications that can be observed. Sometimes when we are using "common" organization design terminology when speaking with practitioners, we may experience them looking puzzled. Though organization design is a practice-oriented field of social science, practitioners often do not understand the language we use. The misunderstandings might come from the fact that some organization design terms are also used in everyday conversations but do not necessarily cover the underlying complexity of the phenomenon. Galbraith's approach to organization design communicates fluently with both of these, often detached, worlds. His work is built on scientific rigor but does not put aside the practical aspect of the discipline. His approach to organization design and language used is easily absorbed and applied by managers practicing organization design every day in their work.

I deliberately differentiated the world of students from the world of academe. Students are a particularly important group because they have little practical experience. Based on my teaching experience in organization design, I recognize that they accept the Star Model as one of the best explanations of organization design.

The work of Jay Galbraith inspires me as a teacher, consultant, and an author in the field to shape my work so that it can be understood by or easily translated for each of the three worlds in organization design: academe, practice, and students.

Ana Aleksić Mirić
Assistant Professor, University of Belgrade

Jay's work was not theoretical but intimately tied to business issues, both strategic and operational. His books were highly relevant and reflective of the economic, technological, and business needs of their time, ensuring that I never lost sight of the reason(s) for a particular design approach or configuration. Because he was such an extraordinary observer, his analyses were based on well-organized and transparent empirical data and experience. He opened a window to the world's largest, global, complex businesses, to which most of us practitioners did not have access. He brought us real and workable solutions, ones that we could incorporate into our own work, regardless of size and scope.

In short, I learned from Jay that (a) there is no one "right" solution; (b) what works for the client and their strategy is the "right" design at the time; (c) no design is final; and (d) designs evolve to meet the needs of the organization and its environment. Jay showed us year after year at Organization Design Forum conferences that the fun of design never ends – in the joy he shared in learning about new challenges and new creative design responses. I assume he is still designing, wherever he is now.

Kathy Molloy
Principal, ChangeWorks International

I knew Jay through his books. I remember when the first one came out it was chock full of useful perspectives to help me think through the design issues of some of my clients. The notion of information flow/exchange/processing was my first takeaway, and it is still valuable today.

Gene Morton
Consultant

Jay Galbraith's idea of designing an organization where the information-processing demand is met by the organization's information-processing capacity has been one of the fundamental ideas on which my research on and application of organizational design has been based. As simple as this idea may sound, it has been shown to be both powerful and sustainable. This principle has allowed many areas of research to be brought together into a multi-contingency model of organizational design that has significant predictive power. Also, Jay's idea has become even more relevant in a world of dramatic increases in information availability and sharing. Information processing has to be a concern of every organization today. I had the privilege to work with Jay on getting the Organizational Design Community up and running. He never turned down a request. His work and personality will continue to be a great inspiration.

Børge Obel
Professor, Aarhus University

So, you want to create a government from scratch? And you want it to be a new kind of government in which the people, rather than the "subjects," choose their leaders and determine the course of the new nation? Such was the dilemma faced by our Founding Fathers. As Alexander Hamilton and James Madison summed it up, "In framing a government which is

to be administered by men over men, the great difficulty lies in this: you must first enable the government to control the governed; and in the next place oblige it to control itself."

As the social, technological, and political environment changes, organizational structures must adapt. The challenge has been to ensure the organizational structure keeps up with the changes since its inception and adjusts to the environmental landscape while keeping intact the original governmental functions. Changes are constant in an ever-changing system like a national government. The work of Jay Galbraith has been instrumental in this endeavor for the U.S. federal government. Much of the work done in this area has been influenced by Jay's ideas even if all the practitioners did not know they were following a specific methodology or that it came from Jay Galbraith.

Recent examples include the inception and development of the Consumer Financial Protection Bureau (CFPB). CFPB was established under Title X of the Dodd-Frank Wall Street Reform and Consumer Protection Act ("Dodd-Frank Act"). To create a single point of accountability in the federal government for consumer financial protection, the Dodd-Frank Act consolidated many of the consumer financial protection authorities previously shared by seven federal agencies into the CFPB and provided the Bureau with additional authority. This agency did not exist prior to this point and was designed and built to meet the letter of the law with three separate functions: Educate, Enforce, and Study to give consumers the information they need to understand the terms of their agreements with financial companies; work to make regulations and guidance as clear and streamlined as possible so providers of consumer financial products and services can follow the rules on their own; and research consumer behavior to ensure success of the first two areas.

Another recent example is the Office of the Comptroller of the Currency (OCC), which took over supervision of 700 institutions and absorbed 700 employees from the Office of Thrift Supervision (OTS). This regulatory merger came under the Dodd-Frank Act. Lawmakers wanted to end the ability of lenders to shop regulators, which Countrywide Financial Corp. did in 2007 by switching from the OCC to the OTS. Just one year after the switch, the failing mortgage giant was forced to sell to Bank of America in a fire sale. The OCC issued final rules on how it will govern these smaller institutions. For instance, it added language, clarifying that federal savings associations will be subject to the same standards as national banks when determining if a state law obstructs or impairs a bank's powers. The OCC also revised rules on investigations, allowing state attorneys general to bring enforcement actions in court to enforce applicable state laws. After the transition was complete, the OCC provided a single assessment schedule for both national banks and federal savings associations. The agency appropriately tightened its process for preemptory decisions, and the merger will solidify regulations under a single umbrella. This makes sense in a national economy. An efficient, well-regulated national system makes it easier for banks to grant credit to customers across state lines, promotes job creation, and preserves our industry's competitive structure. A patchwork quilt of inconsistent state laws drives up the price of financial products and makes consumers' financial lives more complicated. Both of these illustrations are examples of how the work of Jay Galbraith has influenced the creation of a new entity and how it influenced the concatenation of two separate agencies into one effective organization, all guided by law and influenced by ever-changing financial and political forces.

A third example of the organizational design work done in the federal government and influenced by Jay Galbraith is the Financial Crimes Enforcement Network (FinCEN). FinCEN carries out its mission by receiving and maintaining financial transactions data; analyzing and disseminating that data for law enforcement purposes; and building global cooperation with counterpart organizations in other countries and with international bodies. FinCEN exercises regulatory functions primarily under the Currency and Financial Transactions Reporting Act of 1970, as amended by Title III of the USA Patriot Act of 2001 and other legislation, a legislative framework commonly referred to as the "Bank Secrecy Act" (BSA). The basic concept underlying FinCEN's core activities is "follow the money." The primary motive of criminals is financial gain, and they leave financial trails as they try to launder the proceeds of crimes or attempt to spend their ill-gotten profits. Law enforcement agencies successfully use similar techniques, including searching information collected by FinCEN from the financial industry, to investigate and hold accountable a broad range of criminals, including

perpetrators of fraud, tax evaders, and narcotics traffickers. More recently, the techniques used to follow money trails also have been applied to investigating and disrupting terrorist groups, which often depend on financial and other support networks. This entailed building an organization around the collection, analysis, and dissemination of "big data" which is shared both nationally and internationally. This is not unique, but the scale and speed in which the organization needed to function was a design requirement new to the federal government. Jay's writings on how to incorporate big data analytical capability into an organization were very helpful in this regard.

These are but a few examples of the work done and influenced by Jay Galbraith's work in Washington, D.C. I have been the lead consultant on dozens of organizational design and organizational development activities in the federal government for over 12 years and have always guided and educated my clients on the methodologies formulated and influenced by Jay Galbraith. My first work and interaction with Jay Galbraith's body of work was in the early 1990s while serving in the military and working on a joint taskforce to solve the issue of inter-communication among the services during conflict engagement. My involvement came about from an incident of fratricide I was involved in, when my special operations ground team was engaged by friendly fire from an aircraft. We did an analysis of how to minimize this type of incident in the future and what processes and procedures to put in place. We used the Star Model to ensure that what we solved did not cause other organizational or procedural problems. The problem still exists today, but there is a much lower incident rate because of our work and the influence of Jay Galbraith.

The work of Jay Galbraith has always been a guiding beacon of my practice and has continuously helped me engage and define for my clients the reasons and purposes for the actions I have taken with them. Thank you, Jay!

Brent Oberholtzer
CEO and Founder, Org-Ology

This was a recent blog post we featured on the Organization Design Forum's website written by one of our Board members. On behalf of the Board of Organization Design Forum, we'd like to submit the following for your tribute article.

Jay Galbraith and ODF, a Memory and Tribute

I always look forward to the Organization Design Forum (ODF) Conference, but this year I am particularly anticipating being in my professional home. We have lost one of our own, a dear thought leader in our field, and I am eager to come together as a community to remember his contribution to our profession.

Jay Galbraith died on April 8, 2014, and we are all reeling from the news. He was as alive a person as you could ever see. He was working with clients and writing books and articles up until his death, and he reminds us that if we do what we love, it doesn't seem like work.
In 2004, at my first ODF Conference in Chicago, I found myself feeling anxious, while privileged, to be in the midst of the likes of Stu Winby, Bill Pasmore, Paul Tolchinsky, and Dick Axelrod, just to name a few. My colleague, Dr. Craig McGee, and I busily prepared to make our presentation on a design project where our approach was based on the Galbraith Star Model (*Designing Complex Organizations*, 1973). I had been an eager student of Dr. Galbraith's work while in graduate school and found it a simple and pragmatic organizing framework that was also easily understood by the client. As I turned around to begin the presentation, Jay had walked quietly into the back of the room and sat down. I couldn't believe it. There he was! In person! Real life! My voice quaked as I welcomed the group and began to tell the story of a project that is still one of the high points of my career. We had led the leadership team through strategy development and were in the midst of the design work. When I finished and was mingling with participants, Jay took me gently by the arm and said, "Well done. And, remind your client that strategy is never done." Ever the teacher, mentor, researcher, learner.

Jay embodied what I love about ODF. We come together to learn, to push each other, to share and to support. Our work can be lonely and difficult. It is a pleasure and a privilege to be among such accomplished and generous colleagues and a relief not to try to explain what we do. We all know what we do and the conversations start at deeper points.

I feel lucky to be part of a profession that was led by a man such as Jay Galbraith. He was brilliant, humble, and committed to making our field more accessible and respected. He showed his commitment to ODF by working on our Advisory Board, contributing to our thinking, and supporting us as we worked on ways to meet the expectations of our community members. We are in debt to his trail-blazing thought leadership, and I look forward to coming together as a community to honor him and renew ourselves in his spirit.

With the news of Jay's passing, it feels the perfect time to take stock and consider his influence on our work and to think about what's next for our field.

Claudia Murphy
ODF Board Member

We appreciate your efforts in assembling this tribute on behalf of Jay. His loss will be felt in our community worldwide.

Sincerely,
Organization Design Forum Board Members:

Emily Axelrod, Nuala Campany, Todd Christian, Rick Hardin, Wendy Helmkamp, Lisa Kimball, Diana Larsen, Evan Leonard, Claudia Murphy, Jude Udedibia, Stuart Wigham, Bill Zybach

Jay's work, in the design and deployment of his Star Model, has been a cornerstone of my professional practice for the last ten-plus years, facilitating organizational design change initiatives from the basic to the transformative, while also leaving leaders at all levels with a deeper understanding of capability through the model's applicability and simplicity.

Jay also had a way, because of his thorough understanding of both the academic and practitioner communities, of truly bridging the gap between the two, by empirically validating elements of his model while ensuring its business applicability. On behalf of Jay, we within this collective community have an opportunity to continue his legacy of "applicable application" by seeking out and embracing the value each community can bring to continue to evolve our practice and enable achievement of this larger purpose architected by Jay Galbraith.

Tracy Platt
Senior HR Director, CVG Strategic Initatives, Medtronic Inc.

Jay R. Galbraith, who transformed the field of organisation design, and was the creator of the highly influential Star Model of organization development, passed away on April 8, 2014, at the age of 75.

I first encountered the ideas of Jay Galbraith as a doctoral student in the late 1990s, nearly a decade before I encountered him in person.

At the core of Jay's thinking was a vision of organizations as collections of individuals that must process information, individually and collectively, in order to achieve the organization's goals. Therefore, an organization's design should take into account the amount of information required to be processed by its decision makers. When uncertain business conditions demand that the organization assume a greater informational burden, the design must be altered.

I remember being amazed by three things about his first book that I read in a doctoral seminar. First, the sheer ambition and courage of his ideas. Jay meant to do nothing less than provide a complete toolkit to analyze and design complex organizations of all shapes,

sizes, and sectors – and he wanted to do that in a slim volume of around 150 pages. Second, the anchoring of his arguments in concrete detail, gleaned unmistakably from first-hand experience. Third, the humility with which Jay presented this ambitious set of ideas. For instance, in the preface to his 1973 book, *Designing Complex Organizations*, he wrote: "… A third warning is that the reader will find nothing new...What I have tried to do is synthesize a number of phenomena which are usually treated separately… It is this synthesis which is the contribution, if any, that this book makes." He went on to acknowledge his intellectual debt to the founding fathers of modern organization design theory: "I have been influenced by James D. Thompson. It was he who influenced me to begin studying organizations and provided a basis for some of the content. The other person is Herbert Simon. There are times when it seems to me that I have merely rewritten his thinking on the basis of the last ten years' empirical evidence."

As I read more of Jay's work (he was always Professor Galbraith to me), I began to appreciate why his name had become synonymous with the theory and practice of organization design. His ideas were fairly abstract, but around this core, Jay built a detailed framework that interpreted structural features of organizations such as hierarchy, departmentalization, policies, lateral roles, and so on in terms of their information-processing functions. This mapping from structure to function later became an integral part of all the thinking about and research on organization design.

A final layer of ideas involved how to make these concepts useful to those who design organizations. Jay's Star Model identified five key "levers" — strategy, structure, process, people, and rewards — by which managers can shape employee behavior toward a desired outcome. It is easily one of the most influential ideas of all time in the world of practical organization design and change.

At some stage, I discovered, to my surprise, that Jay used to be a professor at the same business school where I was studying for my doctoral degree (Wharton). I wondered what had prompted a successful theorist like him to give up academia for the world of practice. I lost no time in asking him that the very first time I met him, at a small workshop in Brussels many years later. His candid answer basically was that he left academia when his ideas began "turning out to be too useful to publish." Around 1979, Jay said, he began getting more requests for consulting than the academic rules would allow. He felt he was learning a lot through these projects, perhaps more than through his regular academic position, so he resigned his professorship. That must have taken courage and intellectual ambition of an unconventional sort. As he wrote in his book *Designing Matrix Organizations that Actually Work* in 2008: "My academic colleagues thought I was crazy. In part they were correct. I have never regained my academic credibility." This was patently false, of course, as his ever-growing citation count within academic circles clearly showed, but he could never overcome his innate modesty.

Over the years, I got to know Jay, particularly in his role as co-founder of the Organizational Design Community. This initiative aims to put organization design squarely back onto the academic agenda, from where it has gone missing for a couple of decades and to ensure it gains the same importance there that it already enjoys in the world of practical management. Over multiple meetings, discussions, and brainstorming sessions, I repeatedly saw in Jay the same attributes that so impressed me about his early work: Ambition, courage, an anchoring in reality, awareness of the latest phenomena, and above all, a sense of humility. His very last paper was about the organization design implications of big data, and the third edition of his book, *Designing Organizations*, hit the shelves two months before he died and was a total rewrite of the second edition.

I last saw Jay at a conference in 2013. We were enjoying what felt like a well-earned drink at the end of a long day, and I casually mentioned a doctoral student at INSEAD who wanted to build agent-based models of matrix structures for his dissertation. Jay's eyes lit up; for the next thirty minutes I got a glimpse of the kind of academic he must have been as a younger man. He laid out the problems with the pessimistic rhetoric about matrix structures ("utter nonsense!"), and how the label itself was being bandied about without any precision. He cited examples from his extensive experience, and we argued a bit about what would be a good way to abstract from the phenomenon in a useful way. Jay was clearly excited by the prospect

of an analytic look at the phenomenon and couldn't wait to read the work.

That's the Jay Galbraith I will always remember.

Phanish Puranam
Professor, INSEAD (Singapore)

In tribute to Jay Galbraith from a four-decade student of his work: "In the narrative sense of organizational architecture, Jay has truly given us our solid foundation, the strength and drive behind all future Organizational Design and Development."

James Grant Regan
CEO, QaBe Developments

Jay Galbraith's major accomplishments arose from his ability to combine theory and practical application. In my own quest for creating synergy between the academic side of organization design and practical experiences in doing design projects in authentic organizational settings, I consider Jay's work as one of the very few role models available. As such, Jay's ability and perseverance in travelling back and forth through the entire knowledge chain, from client problems and challenges to tooling and academic theorizing, has been exceptional. From Jay, I therefore learned two things. First, Jay's scholarly work inspired, and continues to inspire, me in bringing together and systematically connecting the worlds of "design" and "science" in the management discipline. And, second, Jay's professional life has demonstrated that such a quest is not only a prerequisite to becoming a truly professional discipline but that it also is an entirely feasible course to pursue.

Georges Romme
Professor, Eindhoven University of Technology

I learned three things from the work of Jay Galbraith that have served me throughout my career as a strategy and organization professor.

Jay was trained as both an engineer and a management researcher, so he knew how to study organizational behavior in a rigorously analytical way. But he was equally interested in the practical side of organizations. He always sought to know how a particular organization should be designed so that it could accomplish its purpose. As a result of his insight and emphasis on practicality, everything I ever read by Jay made sense to me. His work was always current and useful, and I tried to emulate his approach to studying organizations as much as I could.

Jay wrote an influential article in 1974 entitled "Organization design: an information processing view." In that article, he laid out the fundamental idea that an organization's design should help the organization process information. Thus, a good design helps the organization gather and analyze information, make decisions and formulate plans, and learn. This is the essence of organizational behavior.

Jay wrote about what he called "enterprise" designs – organizational structures and processes used to operate the total enterprise. Jay consulted with some of the largest, most complex organizations in the world. Alfred Chandler, a business historian, had chronicled the rise of American enterprise designs from their origins in the railroads in the late 1800s to the large multidivisional corporations of the post-World War II period. Jay began his work where Chandler left off and carried it through to the present day. Jay wrote a book about each major development in enterprise design that has occurred since the 1960s. Each of his books is rich in insight and description, and they have been an inspiration to me in how to write clearly and sparingly.

Charles Snow
Emeritus Professor, Penn State University

I co-authored an article in Spanish last year with Jay, which focused on the organizational challenges of Colombian companies in expanding into other countries in the Americas region. I was delighted to write this article with him and impressed by his humility and generosity to contribute on this topic, especially since we met virtually through Linked-in. I am enclosing the article so that you can include it in the tribute that you are preparing to this wonderful and insightful colleague.

Alvaro Triana
Director, Triana, Uribe, and Michelsen LTDA

Jay Galbraith has been influential in shaping the discipline of organization design for more than forty years. He has created a theory of organization (around information processing), provided a logic for how to diagnose and improve organizations (his Star Model), defined the choices and consequences for alternative organization designs, and advised hundreds of companies on how to make sure that their organization is designed to deliver desired results. Jay's work has also shaped the professional lives of most organization designers today. The genealogy chart of those he has directly and indirectly influenced would include business leaders, human resource professionals, organization consultants, and academics who have built their research logic on his insights.

At a personal level, Jay helped me refine my thinking more than thirty years ago. In the 1980s, there were many "organization models" being used: McKinsey had the 7-S model; Dave Nadler and Mike Tushman had an organizational architecture framework with congruence of key systems; Russ Ackoff (and others) were advocating systems models for organizing. Entering into this fray, Jay's Star Model became a standard that both synthesized and extended this organizational diagnostic work. He was able to elegantly and simply define the key processes for an organization and then articulate choices both for those processes and for their alignment with each other.

At the same time these organizational process models were being deployed, others were looking at organizations as bundles of capabilities. For example, C.K. Prahalad and Gary Hamel worked on the "core competence" of the organization, focusing on technical competencies around which to integrate organizational practices. Dale Lake and I published *Organization Capability* to define the culture requirements of an organization. We proposed managing the organizational practices to define and deliver organizational capabilities. We were particularly interested in how human resource practices could build competitive advantage through better alignment of those practices.

I was privileged to do workshops with Jay where he would present his organizational diagnosis models, and I would present some of the culture and capability models. I will always remember a conversation with him in a car to an airport after one of these workshops where he graciously challenged me to extend my thinking. He asked a simple question, How can you specify the critical capabilities that an organization needs to succeed? We had been advocating organization audits, but we were not clear about articulating the capabilities that would create uniqueness and add value to customers. I pondered on his question then and in the ensuing years.

We have since become much more rigorous about what we mean by organizational capability, how capabilities can be defined and measured, how they can be audited, and how they can be created though the practices specified in the Star Model. The concept of an organization as a bundle of capabilities has shaped both academic thinking and professional practice. Jay's gentle probing helped me, and others, to much better articulate how to think about and improve organizations.

Jay was a mentor in other ways. He was generous with his time and ideas. He would read and comment on papers. He would attend workshops. He would share his ideas and be open to comments on them. He would support alternative points of view. He was clearly the thought leader in organization design but was modest in his personal demeanor and collaborative in his interactions with colleagues. And, he kept learning and continually had fresh ideas. His most recent works were as innovative as his early works. He anticipated the challenges global

organizations would face and how to respond to them.

He will be missed professionally and personally, but his ideas will far outlive him, and his legacy will be the people and organizations he has shaped.

Dave Ulrich
Professor, University of Michigan

While Jay Galbraith introduced many pioneering ideas and insights on organization design, I am particularly impressed with his sophisticated theorizing about strategic choice and equifinality in designing organizations. Commonplace during the 1970s and 1980s was a deterministic contingency theory, which argued that the internal design of an organization must match its environment (Lawrence & Lorsch, 1967) and that there is one particular design that is most effective for each contingency (Donaldson, 2001). Galbraith (1977) invoked equifinality arguments to criticize this deterministic formulation of contingency theory. Equifinality introduces an element of choice into the design of organizations because it means that a given outcome can be reached in several equally effective ways and from different initial conditions (Doty, Glick & Huber, 1993). Galbraith's information-processing model of organization design became highly influential and widely adopted. However, I believe his thinking about equifinality and strategic choice deserves more attention than was generated by our review three decades ago (Van de Ven & Drazin, 1985). I want to resurrect this review of Galbraith's theorizing because it potentially provides an important way to advance organization design theory and research.

Realistic choices in the design of an organization are always limited by the feasible alternatives available to decision makers. The greater the number of equally effective options for a given situation, the greater the opportunities for managerial choice in contingency theory. Equifinality, or the existence of several feasible and equally effective design options for given contexts, provides choices in designing organizations.

Galbraith argued that a single ideal design for a given setting is not theoretically viable. With his information-processing model, he proposed that in the face of increasing environmental uncertainty managers have at their disposal numerous design solutions. Increased uncertainty may be responded to by centralizing decisions and investing in a higher capacity decision support system, or by decentralizing and creating lateral relations at lower levels of the organization. Both strategies can effectively serve as substitutes or complements of each other and increase information-processing capacity.

Other researchers at the time also recognized some of these alternative strategies. For example, Child's (1977) airline study offered some data in support of Galbraith's assertions by finding that both centralized and decentralized organizations were capable of high performance while operating in similar uncertain environments. Similarly, Khandwalla (1973), Kerr and Jermier (1978), Mintzberg (1979), and Miller (1984) documented a variety of other substitution effects. However, none of these researchers systematically examined how one might theoretically explain equifinality in a contingency theory of organizations.

Galbraith's information-processing model provides a sophisticated theory of equifinality by distinguishing the levels of abstraction of concepts into manipulable manifest variables at the observable level and unobservable latent constructs at a theoretical level, as shown in Figure 1. The basic proposition in Galbraith's (1973, 1977) model is that the information-processing requirements an organization faces must match (fit) its capacity to yield information if the organization is to be effective. This may sound like the typical imperative formulation of contingency theory, but in reality it is not. As Figure 1 illustrates, information required and yielded are abstract or latent (theoretical) concepts that result from the contribution of many manifest (measurable and observable) features of organizational context and design.

Ladder of Abstraction	Organization Context	Fit	Organization Design
Latent, Abstract Concepts	Information Required	Efficient Match	Information Yield
Middle-Range Constructs	Interdependence Number of exceptions Number of issues	Mechanisms to reduce need for information processing	Mechanisms to increase capacity to process information
Manifest, Observable Variables	Environmental complexity Task uncertainty Organization size Division of labor	Environmental management Increase performance tolerances Create self-contained tasks	Invest in IT and MIS Create lateral relations Narrow span of control Planning and goal setting Rules and procedures Hierarchy of authority

Fig 1. Galbraith's Information Processing Model of Organization Design

A variety of contextual and design configurations may produce the same degree of information required and yielded. The choice among alternative combinations is probably a reflection of the decision makers' history, ideology, and performance criteria. For example, in designing an organization using Galbraith's model, a designer will presumably first consider the information-processing requirements confronting the organization. Relevant features would include: environmental complexity, task uncertainty, the size of the organization, and its present division of labor. These factors contribute to the number of issues, exceptions, and interdependencies that require information processing in order to be managed. The organization designer considers these factors jointly not individually. They are aggregated into an abstract theoretical concept called information requirements.

On the organization design side we see a similar pattern. Designers have many alternative mechanisms at their disposal to both increase information-processing capacity in the organization and to reduce the need for it. Hierarchy of authority, rules, planning, spans of control, lateral relations, and MIS are all methods for increasing information capacity. If these mechanisms, relative to their benefits, are viewed as too costly, the designer has a repertoire of alternatives for reducing the need to process information. For example, creating self-contained tasks, slack resources, increasing performance tolerances, extending deadlines, and reducing environmental demands are all methods for decreasing interdependence and the need for coordination and control.

By ascending and descending the ladder of abstraction, Galbraith illustrates an insightful and logical way to advance equifinality and strategic choice in designing organizations. Adopting Galbraith's conceptual moves, the overall organization design problem becomes one of finding ways to combine, substitute, and aggregate alternative options for expanding and contracting an organization's information-processing capacity to achieve a match with the overall amount of information required. Moreover, it becomes one of designing a research study that permits one to empirically examine substitution effects among some of the manifest structural features contributing to the unmeasured latent organizational concept being studied. In Galbraith's case, that concept is information processing; in other cases, it could be another organizing concept such as networking, sense-making, coordination, learning, and so on.

Andrew H. Van de Ven
Professor, University of Minnesota