
The Road to Maturity: Process Management and Integration of Strategic Human Resources Processes*

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This study develops the concept of integration in the context of strategic human resource processes. Integration is a state of association among organizational processes that promotes unified, harmonious effort toward the effective achievement of organizational goals. Highly integrated processes are likely to be more strategic in character. This study proposes that integration improves as processes mature along both collaborative and coordinative dimensions, driven by structural outcomes of process management that reflect organizational maturity. Analysis of data obtained from organizations engaged in evaluations based on the Malcolm Baldrige Criteria for Performance Excellence supports a general relationship between human resource process integration and maturity. Results also indicate differences in rate of integration, degree of integration achievable at high levels of process maturity, and blend of collaborative and coordinative structure among various human resource processes. The authors' findings suggest that integration is a multidimensional construct that can advance the understanding of strategic human resource processes.

Key words: human resources, improvement, quality management, structure

INTRODUCTION

Strategic human resource management (SHRM) concerns the management of people and conduct of work in the context of organizational performance (Becker et al. 1997; Colbert 2004; Lengnick-Hall et al. 2009; Wright and McMahon 1992). A focus of SHRM has been on identifying specific human resource practices tied to general performance (Becker and Gerhart 1996). A human resource practice is a specific activity, such as using an employee survey to assess work climate. Those practices thought to be strongly linked to performance often earn "best practice" or similar labels. Pfeffer and Veiga (1999), for instance, proposed seven universal human resource practices thought to drive high performance including employment security, selective hiring, self-managed teams, generous performance-based compensation, extensive training, reduction in status differences, and information sharing.

The practice-based tradition of SHRM faces several limitations. Implementing specific practices observed to be effective elsewhere will have minimal strategic impact if the practices are not consistent with an organization's broad strategic infrastructure (Becker et al. 1997). Moreover, imitators of static practices are unable to develop evolutionary paths to practice development that permit dynamic learning and adaptation over time (Amit and Belcourt 1999). Further, practices that can be readily observed, understood, and adapted are unlikely sources of sustainably high performance because they

can be imitated by competitors (Barney 1991; Colbert 2004). Institutional pressures to adopt such practices may be significant (DiMaggio and Powell 1983), leading to leveling effects across organizations that attenuate performance advantage.

Alternatively, SHRM can be viewed from a process perspective (Amit and Belcourt 1999). Generally defined, processes are collections of activities that together transform inputs into outputs (Garvin 1998). Human resource processes are sequences of action by which an organization attracts, socializes, trains, motivates, evaluates, and compensates its human resources (Amit and Belcourt 1999). Such processes are organization-specific in that they arise from the development and exchange of information within the organization. Human resource processes are constantly evolving and remain inside the organization, even if specific practices are discarded or if individuals leave (Amit and Belcourt 1999). Because they are unique to the organization, difficult for outsiders to imitate, and prone to get better with use, human resource processes provide a basis for strategic advantage (Amit and Schoemaker 1993; Teece, Pisano, and Shuen 1997).

Central to the process perspective is the notion of linkage or connection among organizational processes (Benner and Tushman 2003). Linkages are enabled by structural mechanisms, such as cross training and shared measurement systems, which facilitate inter-process collaboration and coordination. Strengthening connections between processes fosters a state of integration that motivates unified, harmonious effort and collective goal achievement (Lawrence and Lorsch 1967). While integration has been recognized as a characteristic that renders human resource activities more strategic in nature (Amit and Belcourt 1999; Becker and Huselid 2006; Devanna, Fombrun, and Tichy 1981; Schuler 1992), the integration concept remains underdeveloped in the human resource domain. Substantial issues linger regarding the shape and achievement of integration. For instance, knowledge about the progression of processes toward integrated conditions remains largely speculative and anecdotal, and little is known about the characteristics that might foster integration in some processes more so than in others.

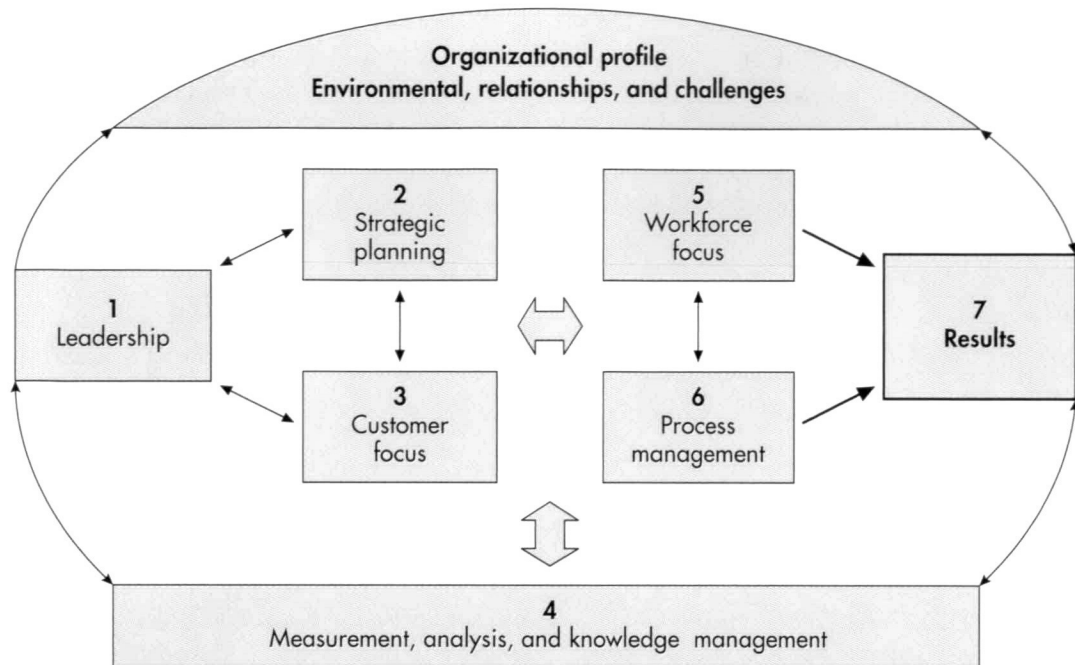
To advance the understanding of integration in the human resource context, this investigation borrows from the field of quality management where the process perspective has been well established. After providing a conceptual foundation for the cross-disciplinary study of human resource processes and their linkages, the authors develop propositions that view human resource process integration as a function of maturity stemming from structural outcomes of process management. Using data obtained from organizations engaged in evaluations based on the Malcolm Baldrige Criteria for Performance Excellence, patterns of human resource process integration are examined to explore the validity of the conceptualizations. The evidence supports a general relationship between integration and process maturity. Findings also suggest differences in the rate of integration, degree of integration achievable at high levels of process maturity, and blend of collaborative and coordinative structure among various human resource processes. Research and practical implications of these findings are subsequently discussed. In this manner, the authors extend the SHRM and quality literatures by employing a process perspective that views integration as central to the strategic character of human resource activities.

BACKGROUND AND CONCEPTUAL DEVELOPMENT

Process Perspective in SHRM

While relatively new to SHRM, the process perspective is a familiar one to the field of quality management. Indeed, a central tenet of quality management is that an organization represents a system of interlinked processes that can be understood and improved (Benner and Tushman 2003; Flynn, Schroeder, and Sakakibara 1995; Hackman and Wageman 1995). An empirical manifestation of this concept can be found in the Malcolm Baldrige National Quality Award Criteria for Performance Excellence (NIST 2009). The Baldrige criteria express a model of organizational performance composed of six categories of processes related to leadership, strategic planning, customers, and markets

Figure 1 Baldrige criteria framework.



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Table 1 HR processes and relationship to Baldrige criteria.

HR process	Description	Associated Baldrige area to address*
Organization of work	Designing and managing work and jobs	5.1a
Performance management	Evaluating employees, providing feedback, and rewarding performance	5.1b
Hiring and career progression	Acquiring and retaining talent	5.1c
Education and training	Developing employee talents and skills	5.2a
Work environment	Securing the workplace from health, safety, and other threats	5.3a
Support and satisfaction	Maintaining employee well being and satisfaction	5.3b

*Based on the 2005 version of the Baldrige criteria (NIST 2005). Detailed requirements appear in Appendix A.

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(referred to as customer focus in Baldrige nomenclature), information management (measurement, analysis, and knowledge management), process management, and human resources (workforce focus). These processes are specified as driving performance results of various types. Figure 1 depicts the elements and general relationships of the Baldrige framework.

Human resource processes are sequences of action by which the organization attracts, socializes, trains,

motivates, evaluates, and compensates its human resources (Amit and Belcourt 1999). Table 1 enumerates six human resource processes consistent with these behaviors. Organization of work concerns the design and management of jobs. Activities dealing with work design are perhaps the most fundamental of all human resource processes due to work's direct effect on the value of organizational output. Performance management evaluates work and provides performance

feedback to employees. This process also rewards employees through compensation and other incentive practices. Hiring and career progression acquires talent for the organization and provides for employee retention. Education and training develops employee talent and skill. Work environment secures the workplace from health, safety, and other threats that might prevent or inhibit work. Lastly, support and satisfaction maintains employee well-being and contentment. Activities associated with these processes are consistent with those commonly thought to express SHRM (for example, Devanna, Fombrun, and Tichy 1981; Pfeffer and Veiga 1999; Schuler 1992).

These processes also align well with human resource-related requirements specified in the Baldrige criteria. Similarities between contents of the Baldrige criteria and concepts of SHRM have been noted for some time (for example, Hart and Schlesinger 1991). Moreover, findings from formal evaluations of the performance management model expressed by the Baldrige requirements suggest considerable validity for the general model and its human resource components (for example, Flynn and Saladin 2001; Wilson and Collier 2000). It is possible to map subsets of the Baldrige requirements, known as "areas to address," specified under the human resource category of the Baldrige criteria to the six human resource processes discussed previously. Referencing a recent version of the Baldrige criteria, Table 1 associates Baldrige areas to address with the six human resource processes. Baldrige area to address 5.1a, for example, is linked to organization of work. Each area to address is supported by one or more "items" that detail specific Baldrige requirements. A complete list of the items that detail Baldrige-related requirements for the human resource processes considered in this study appear in Appendix A.

Integration, Process Management, and Maturity

The process perspective views the organization as a system of processes linked together in an integrated fashion (Benner and Tushman 2003). Classically speaking, integration involves the collaboration among work units necessary to achieve unity of effort

that helps an organization cope with environmental demands (Lawrence and Lorsch 1967). The collaborative view of integration emphasizes socialization, group work, and interaction among group members (O'Reilly, Caldwell, and Barnett 1989). It is expressed by structural mechanisms such as job sharing, standardized practices, and other work arrangements that promote flexibility, cooperation, and collective goal achievement (Chen, Daugherty, and Roath 2009; Simsek et al. 2005).

From a process and SHRM perspective, confining the notion of integration to a collaborative sense is insufficient if the purpose of integration is to foster strategic performance outcomes. Collaborative processes are subject to groupthink and other errors of collective decision making (Janis 1972). Well-socialized work units might collaborate toward the wrong end, and consequently produce output that does not enable the organization to achieve its strategic goals.

Achieving effective performance outcomes suggests another dimension for the integration construct, a dimension related to coordination. Generally defined, coordination is the skillful and balanced movement of different parts at the same time. Among organizational processes, coordination facilitates identification and arrangement of remote activities that must be linked (Fredrickson 1986), and lends objectivity to collaborative efforts that keeps progress on track toward effective outcomes (Hambrick 1994; Schweiger, Sandberg, and Rechner 1989). Coordination is fostered by structural mechanisms that harmonize interprocess activities and steer them in common directions (Sherman and Keller 2011). Such mechanisms include strategic planning systems, vertical and horizontal information channels, and a reporting structure that encourages managerial review (Chen, Daugherty, and Roath 2009; Simsek et al. 2005; Swink, Narasihan, and Wang 2007).

From a process perspective, then, integration can be seen as possessing both collaborative and coordinative characteristics. Integration can be defined as a state of association among organizational processes that promotes unified, harmonious effort toward effective achievement of organizational goals. Integration is expressed through structural mechanisms that link remote activities embedded in organizational processes.

Because these structural linkages foster collective goal achievement, integration renders processes more strategic in nature (Amit and Belcourt 1999; Becker and Huselid 2006; Devanna, Fombrun, and Tichy 1981; Schuler 1992).

The notions of integration and linkage among processes pervade the Baldrige criteria. In the 2009-2010 version of the criteria (NIST 2009), words derived from "integration" and "integrate" appear nearly 50 times. Words derived from "linkage" or "link" appear about 20 times. From a Baldrige standpoint, integration refers to the harmonization of plans, processes, information, resource decisions, results, and analyses to support key organizationwide goals. It is achieved when individual components of a performance management system operate as an interconnected unit (NIST 2009, 59). This interpretation is consistent with the multidimensional characterization of the integration construct developed earlier. The Baldrige criteria suggest that, when conducting assessments of an organization's performance management system, integration constitutes a primary factor for evaluating the effectiveness of organizational processes.

The Baldrige criteria propose several interprocess linkages that require attention when managing processes. For example, the criteria posit a connection between strategic planning and employee education, training, and development (NIST 2009, 12). Due to its nonprescriptive nature, however, the criteria provide little guidance on precisely how processes should be integrated or what those integrating mechanisms should be. Using nomological networks and systems-theoretic concepts, Evans (1997) proposed dozens of implicit linkages likely to exist among elements of the Baldrige criteria. Assisted by the core input-activity-output concept that underpins the process perspective (Garvin 1998), similar reasoning can distill structural forms likely to serve as mechanisms for interprocess collaboration and coordination. For example, on the input side of a process, structure related to planning and skill development permits acquisition of resources and the skills necessary to use them. Process activities are enabled by structure that defines the conduct of work itself, and by information that facilitates process control and improvement. On the output side of a process,

oversight, incentive, and goal structure increase the likelihood of products that enable effective achievement of organizational objectives. Specific forms of collaborative and coordinative structure that provide integrative capacity in the input-process-output context appear in Table 2, including examples particular to human resource processes. Items in Table 2 present a sense of integration's operationalized form as well as a basis for its identification in methods of inquiry.

The centrality of the process perspective to quality management (Flynn, Schroeder, and Sakakibara 1995; Hackman and Wageman 1995) has motivated a variety of practices collectively known as process management. Techniques of process management such as activity mapping, statistical process control, and team-based improvement (Garvin 1995; Hackman and Wageman 1995; Powell 1995) embody efforts to understand, control, and improve organizational processes (Benner and Tushman 2003; Linderman, Schroeder, and Sanders 2010). Process management generates structure such as work standards, performance metrics, and control systems that improve the capability for generating effective process output. As they employ these capability-enhancing devices, processes become more mature. Maturity can be viewed as the condition of sophistication or discipline in a process as reflected by the presence of capability-enhancing structure (Harter, Krishnan, and Slaughter 2000; Paulk, Weber, and Curtis 1995). Mature processes tend to carry more such structure than do immature processes.

The Baldrige criteria describe four phases of process maturity (NIST 2009; 65). The first, most immature phase is characterized by processes that act in isolation with unpredictable behavior to address immediate needs or problems. At this stage, goals are poorly defined. The second phase finds processes displaying some repeatability, evaluation, and improvement with a degree of coordination among units. Strategy and goals are being defined at this point. In the third phase, processes are repeatable and regularly evaluated for improvement, with significant coordination among units. At this stage, processes are addressing key strategies and goals. The fourth, most mature phase is characterized by repeatable processes that are regularly evaluated for change and improvement in collaboration with other units.

Table 2 Collaborating and coordinating mechanisms in human resource processes.

Process element		Collaborating mechanisms	Coordinating mechanisms
Inputs	Resource plans	Cross-functional planning and shared plans (e.g., joint marketing and HR planning)	Multi-unit or strategic plans (e.g., HR elements in business strategy) Planning for continuity, succession, emergency (e.g., disaster planning)
	Skill development	Skills training w/multi-unit, flexible application (e.g., quality, safety) Skill broadening (e.g., acting positions, apprenticeships, mentoring)	Employee orientations Selection standards (e.g., profile testing, recruiting process) Use of stakeholders for training (e.g., customers as instructors)
Activity	Work conduct	Group production of output (e.g., cross-functional teams, job sharing) Work standardization (e.g., standard operating procedures) Group-based improvement (e.g., quality improvement teams)	Activities (e.g., training, performance evaluation, compensation) consistent with/supportive of organization goals Configuring for coordination (e.g., matrix structure) Managerial involvement in activities (e.g., performance reviews, project reviews, mgrs as trainers)
	Information	Shared information systems (e.g., safety reports, climate survey data)	Use of external (e.g., other unit, output, stakeholder) data (e.g., customer satisfaction, in-process measurements, benchmarking) to guide internal activities Horizontal, vertical, multichannel communications
Output	Oversight	Oversight sharing (e.g., cross-functional committees, interview panels, employee development plans)	Steering committees (e.g., hiring, safety, compensation) Use of coordinators (e.g., training, wellness)
	Incentives	Rewards for team achievement (e.g., compensation for department goal achievement)	Rewards to encourage broad goal achievement (e.g., pay for performance)
	Goals	Shared goals (e.g., between HR and operations units)	Work (e.g., individual, unit) goals tied to broad (e.g., organizational) goals

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Cross-unit efficiencies are achieved and shared, and measures track progress on strategic and operational goals. Given the escalating conditions of collaboration and coordination in this progression, it is clear that the Baldrige-based interpretation suggests increasing integration as processes mature.

Proposition Development

As methods of process management are applied to organizational processes, structure is generated that fosters integration (Benner and Tushman 2003). Using the human resource process of performance management discussed previously as an example, process management activities might generate several mechanisms that serve to integrate the process into the organization. A standard performance review procedure could be created to make desirable process outcomes, such as the mutual

understanding of subordinate work quality as perceived by supervision, more predictable. To expand the new procedure's scope of use, a document that describes the performance review procedure could be disseminated to all supervisors in the organization. Policies may be enacted that require supervisors to document their performance reviews with subordinates. Records of performance reviews provide information to managers about the new procedure's degree of diffusion as well as levels and trends of work performance between units. A human resources professional may coordinate the various performance review activities across work units.

Such standards, policies, records, and positions advance the maturity of organizational processes as work is repeated, evaluated, and improved. As maturity is advanced, processes become more integrated, as structure enables work and information sharing among units as well as collective progress toward organizational goals.

Many collaborating and coordinating mechanisms may be necessary to thoroughly integrate human resource processes into the overall system for generating favorable organizational outcomes. As human resource processes undergo process management, structure is generated that fosters integration and maturity. This leads to the following proposition:

- *Proposition 1: Integration of human resource processes will generally increase with process maturity.*

A highly integrated process requires both collaborative and coordinative structure. A process that contains only collaborative structure lacks mechanisms for keeping group work on track toward organizational goals. On the other hand, if the process contains only coordinative structure, then it lacks mechanisms for sharing and unity of effort. In order to facilitate unified effort toward the effective achievement of organizational goals, both collaborating and coordinating mechanisms are likely to be added to processes as they mature. Therefore, the authors propose the following:

- *Proposition 2: Collaborative and coordinative structure will generally increase with process maturity.*

It is unlikely, however, that the character of integration will be the same across all processes. Crossing various human resource processes with numerous integrating mechanisms creates possible differences in rates of integration, degrees of integration ultimately achievable, and blends of collaborative and coordinative structure among processes. Structural factors, such as centralization, complexity, and formalization, may influence integration (Fredrickson 1986). Some human resource processes, such as support and satisfaction, are prone to centralization and are often managed by a functional human resources (HR) group. For instance, an HR manager may be responsible for overseeing benefit programs available to employees. Centralized processes may be candidates for intense integration since they often employ dedicated process managers who can advance maturity.

Other human resource processes, such as organization of work, may be less conducive to integration.

Organization of work involves designing and managing an organization's spectrum of jobs and work. Tendency toward specialization endows many jobs with idiosyncratic components that are difficult to standardize. Job sharing may be difficult except in local areas, thus impeding potential for integration along the collaborative dimension. Coordination may be difficult as well due to complex relationships between jobs and work units that are difficult to identify and manipulate. Processes that possess eccentric or complex character are more difficult to standardize and formalize, thereby making integration more difficult.

The condition of resources available for process management activities could also shape differences in integration. Some human resource processes require access to broad information systems in order to be effective. For example, work environment processes often benefit from databases that house employee health and safety records. Lack of such information systems, or of technological capacity to develop them, limits process management efforts and their integrative outcomes. In general, then, disparities in structural characteristics and organizational resources should lead to significant variation in the character of integration among human resource processes as they mature. This suggests the following:

- *Proposition 3: At a given level of process maturity, the character of integration will differ across human resource processes.*

SAMPLE AND MEASURES

Research Setting and Sample

To assess the validity of the propositions, data were obtained from organizations that participated in a state-level evaluation and award program based on the Malcolm Baldrige Criteria for Performance Excellence over a four-year period. The Baldrige criteria can be seen as a suitable expression of the process management viewpoint (Benner and Tushman 2003) since they model organizational performance as a function of interlinked processes in a manner that possesses considerable validity (for example, Flynn and Saladin

2001; Pannirselvam, Siferd, and Ruch 1998; Wilson and Collier 2000).

In the evaluations undertaken by the study organizations, participants submitted written applications describing how their organizational processes aligned with the requirements expressed by the Baldrige criteria. Teams of examiners, trained in the Baldrige process by the award administrators, were assigned to each applicant. The teams evaluated reports in which applicants described how their processes addressed Baldrige requirements. Each team also observed applicant processes in person during an organizational site visit. After the visit, the team met to reach consensus on the applicant's major "strengths" and "opportunities for improvement" relative to the criteria. Strengths summarized effective and positive approaches that applicants used to respond to the criteria. Opportunities for improvement focused on deficiencies in meeting criteria requirements, but did not prescribe specific practices or examiners' opinions on what the organization should be doing. All applicants subsequently received a comprehensive feedback report that summarized the strengths and opportunities for improvement as identified by the examiners.

A total of 42 feedback reports were obtained for this study. Organizations were evaluated according to various categorical "tiers" established through the award program that reflected the general level of process maturity. Those in lower tiers were required to address only portions of the Baldrige criteria, meaning that some applicants did not address requirements related to all human resource processes studied here. Table 3 indicates that the number of applicant feedback reports containing data relevant to particular human resource processes ranged from 24 to 36. Representation of the three tiers was relatively even across the human resource processes under investigation. Table 3 indicates that the sample was skewed toward nonprofit sectors of government, healthcare, and education. Business applicants represented a small fraction (about 5 percent) of the sample. Small organizations (less than 500 employees) constituted about 70 percent of the sample.

Table 3 Organization respondents for each HR process.

	Organization of work; Performance management system; Hiring and career progression	Education and training	Work environment; Support and satisfaction
Maturity level			
1	8	7	8
2	5	17	17
3	11	11	11
	24	35	36
Sector			
Government	10 (42%)	19 (54%)	19 (53%)
Health Care	6 (25%)	8 (23%)	8 (22%)
Education	7 (29%)	6 (17%)	7 (19%)
Business	1 (4%)	2 (6%)	2 (6%)
Size			
Small	16 (67%)	25 (71%)	26 (72%)
Large	8 (33%)	10 (29%)	10 (28%)

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Measures

Strategic human resource processes. The authors used the six human resource processes listed in Table 1 for their analysis. Earlier they noted the similarity between activities associated with these processes and those commonly thought to express SHRM (for example, Devanna, Fombrun, and Tichy 1981; Pfeffer and Veiga 1999; Schuler 1992). The authors also previously observed the validity of the Baldrige performance management model and its human resource elements as reflected by various scholarly evaluations (for example, Flynn and Saladin 2001; Wilson and Collier 2000). They mapped subsets of the 2005 Baldrige requirements (NIST 2005), known as "areas to address," specified under the Baldrige human resource category to the six human resource processes identified in Table 1. The 2005 Baldrige criteria were employed because they reflected the requirements in place during the period when the sample organizations underwent their state-level evaluations. Each Baldrige area to address

noted in Table 1 is supported by a number of “items” that elaborate the specific Baldrige requirements deemed to express the conceptual domains of each process. These items constituted a “data dictionary” for interpreting feedback report content and linking it to the various human resource process concepts. The items that specify the detailed requirements associated with each of the six human resource processes appear in Appendix A. Note that the number of items ranged from 3 to 11 depending on the process.

Integration. The strength section of a Baldrige-based feedback report describes effective and positive approaches used by the applicant, as observed by the team of examiners. Because examiners are trained to be sensitive to practices or structure that facilitate integration, noteworthy observations relevant to integration should be evident in the strength section of the reports and detectable by qualitative analysis techniques. To extract integration-related observations in the sample, each member of their three-person research team individually coded the strength sections of each feedback report to identify all strengths noted by the examiners. After coding each report individually, the research team met as a group to compare their codes and reach consensus on all recorded strengths for each applicant. The feedback report text associated with each strength was then catalogued in a database using labels linked to the items listed in Appendix A. The text was then analyzed for the presence of collaborating or coordinating mechanisms similar to those listed in Table 2. If one or more mechanisms (for example, cross training, shared information system, standardized procedure) was detected, then a score of “1” were credited, signifying that an integrating mechanism was present in that item for that applicant. Using Table 2, the item was also classified as either primarily collaborative or coordinative in

nature. If more than one mechanism was present, then the classification was made by judging the dominant theme (that is, primarily collaborative or coordinative) of the mechanisms present in that item. If no integrating mechanism was detected in the item, then no point was credited and no classification was made.

As an example, the feedback report of a tier 3 applicant included the following strength comment under item 5.3a.2 associated with work environment:

Workplace health, safety, security, and ergonomics are factors addressed through the Safety and Health Committee, 10 Step Safety Business Plan and Safety Department. A safety focus group comprised of bargaining unit employees meets quarterly to discuss safety issues raised by any employee, review current policy and procedure and makes recommendations to executive leadership as needed. An annual safety retreat is held each year to evaluate the safety program for effectiveness and relevance.

Using Table 2 as a guide, the comments suggest the presence of multiple coordinating mechanisms

Table 4 Integration score example using organization of work process 5.1a.

Related items (see Appendix A)	Number of integrative mechanism credits		
	Maturity Level 1	Maturity Level 2	Maturity Level 3
5.1a.1	5	6	10
5.1a.2	2	1	4
5.1a.3	2	1	5
5.1a.4	7	5	9
Total	16	13	28
Number of organizations (from Table 3)	8	5	11
Number of items (from Appendix A)	4	4	4
Integration score	$16 \div 8 \div 4 = 0.50$	$13 \div 5 \div 4 = 0.65$	$28 \div 11 \div 4 = 0.64$
Note: These integration scores appear across the top row of Table 5.			
A similar method was applied to data for the other five human resource processes.			

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(Safety and Health Committee, Safety Business Plan, Safety Department, annual safety retreat) as well as a collaborating mechanism (cross-functional safety focus group that works with executive leadership). Because at least one mechanism was detected, the applicant was credited with one point. The item was also classified as coordinative because of the dominant theme of coordination. Strengths associated with all items were analyzed in a similar fashion. The present/not present counts for all items, pooled by tier and human resource process, provided the raw material for analysis of integration patterns.

Maturity. Each applicant's tier level was employed as an estimate of process maturity. Based on mutual determination of process sophistication by the applicants and award judges, organizations were designated for evaluation in one of four tiers. Tiers 1 and 2 were meant for organizations that possessed relatively immature processes. Evaluation at these levels was restricted to a subset of the Baldrige criteria deemed by the judges as appropriate for organizations at an elementary level of process maturity. The third and fourth tiers were meant for organizations with relatively mature processes. Evaluation at these levels required applicants to address all criteria requirements. Because the fourth tier (which represented the highest level of recognition) included only three organizations, the third and fourth tiers were combined into a single tier 3 category for this study. The differing evaluation scopes permitted most applicants to self-select into the appropriate tier level. In a few cases, the award administrators decided to lower the applicant's tier level after reviewing the results of completed evaluations. Processes of tier 1 organizations were assumed to be immature, while processes of tier 3 organizations were assumed to be relatively mature.

RESULTS

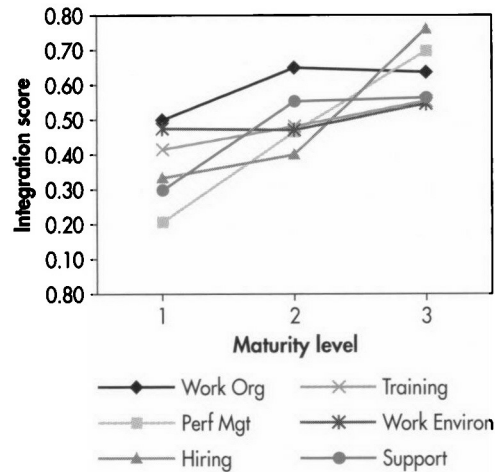
Because the data sets associated with each human resource process differed in terms of the number of sample organizations and the number of evaluation items, "integration scores" were calculated. For each human resource process, the number of integrating mechanisms credited to each maturity level were divided by: a) the number of organizations whose

Table 5 Integration scores by process maturity level.

	1	2	3
Organization of work	0.50	0.65	0.64
Performance management	0.21	0.47	0.70
Hiring and career progression	0.33	0.40	0.76
Education and training	0.42	0.48	0.55
Work environment	0.48	0.47	0.55
Support and satisfaction	0.30	0.55	0.56
Average	0.37	0.50	0.63

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Figure 2 Integration and process maturity.



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feedback reports for evaluated at that maturity level; and b) the number of items that reflected each human resource process. An example of the calculation appears in Table 4. The normalized integration scores enabled the comparison of the various human resource processes across the categorical levels of maturity. The complete set of integration scores, segmented by human resource process and maturity level, appears in Table 5. Results indicate increasing levels of integration with maturity for all human resource processes. Figure 2 visually reinforces the positive relationship between maturity and integration across the various processes. Patterns in Figure 2 also suggest differences in integration level as well as in rate of integrative

change as processes mature. For example, organization of work and work environment exhibit high integration levels at low maturity, but integration of these processes improves the least with maturity. On the other hand, integration scores of support and satisfaction and performance management range from lowest to highest as maturity proceeds.

To study rate of change more closely, integration scores were indexed using maturity level one as the basis. The indexed scores appear in Table 6 and Figure 3. Figure 3 in particular suggests two groups. One group, consisting of the three processes of performance management, support and satisfaction, and hiring and career progression, displays relatively large increases in integration with maturity. This is interesting because these processes tend to be relatively centralized. They are often managed or overseen by a coordinator— frequently someone from a functional HR group. The second group, consisting of organization of work, work environment, and education and training, displays a relatively flat integration profile as maturity proceeds. These processes, particularly organization of work and work environment, tend to be relatively decentralized. They are often managed close to where work is done, which is typically distant from HR offices. Moreover, because these processes tend to involve idiosyncrasies of work, there may be less opportunity for the standardization and formalization that facilitates integration.

Finally, to gain a sense of the blend of collaboration and coordination that shapes integrative structure, component scores appear in Table 7. Note that the sum of the collaboration and coordination component scores equals the overall integration scores (within rounding error). This is because each item that received credit for integration was classified as either collaborative or coordinative in nature, based on judgment of the dominant theme of integration structure present as outlined in Table 2. Thus, there was no double or multiple counting of collaboration or coordination in an item. Results in Table 7 suggest increases in both collaborative and coordinative components of human resource processes with maturity. Note also a tendency for more coordinative structure in the integration blend.

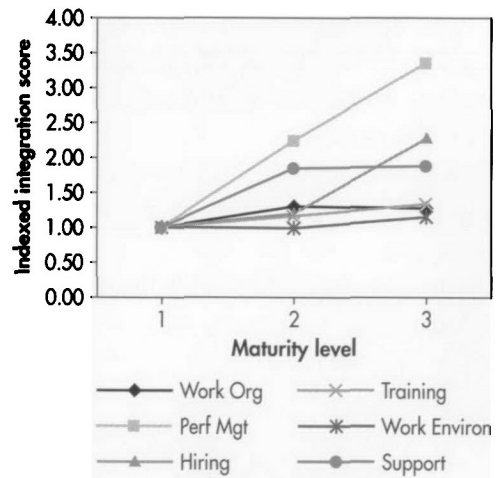
Figure 4 plots the data from Table 7 graphically. The format visually captures changes in the magnitude

Table 6 Indexed integration scores by process maturity level (Level 1 = 1.00).

	1	2	3
Organization of work	1.00	1.30	1.27
Performance management	1.00	2.24	3.35
Hiring and career progression	1.00	1.20	2.27
Education and training	1.00	1.16	1.33
Work environment	1.00	0.99	1.15
Support and satisfaction	1.00	1.84	1.88
Average	1.00	1.35	1.68

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Figure 3 Indexed integration and process maturity (Maturity level 1 = 1.00).



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and composition of integration as maturity proceeds among the various human resource processes. The arrows reflect the direction of integration as processes moved from low to high maturity. There is a general tendency for integration to proceed up and to the right as processes mature. The upper right of the graph represents a state of integration that might be considered ideal in that processes achieving this position would be high in both collaboration and coordination. It is evident, however, that the integration of some human resource processes favored a particular dimension as maturity increased. Performance management, support and satisfaction, and work environment tended to migrate along the coordination axis as maturity

Table 7 Collaboration and coordination component scores.

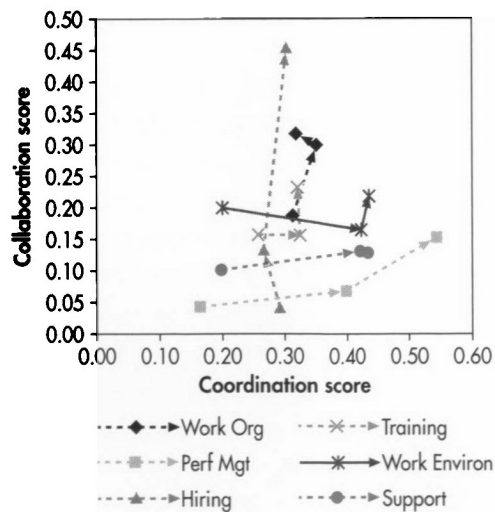
	Maturity	Collaboration	Coordination	Overall	Coordination/Overall
Organization of work	1	0.19	0.31	0.50	0.625
	2	0.30	0.35	0.65	0.538
	3	0.32	0.32	0.64	0.500
Performance management	1	0.04	0.17	0.21	0.800
	2	0.07	0.40	0.47	0.857
	3	0.15	0.55	0.70	0.783
Hiring and career progression	1	0.04	0.29	0.33	0.875
	2	0.13	0.27	0.40	0.667
	3	0.45	0.30	0.76	0.400
Education and training	1	0.16	0.26	0.42	0.625
	2	0.16	0.33	0.48	0.678
	3	0.23	0.32	0.55	0.582
Work environment	1	0.20	0.20	0.48	0.421
	2	0.16	0.42	0.47	0.900
	3	0.22	0.44	0.55	0.800
Support and satisfaction	1	0.10	0.20	0.30	0.667
	2	0.13	0.42	0.55	0.766
	3	0.13	0.44	0.56	0.774

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increased. On the other hand, organization of work and hiring and career progression appeared to integrate more in the collaborative direction. Figure 4 demonstrates that tracking integration in a visual manner along both coordinative and collaborative dimensions provides a useful basis for pattern analysis.

Overall, findings from the analysis offer provisional support for the study's propositions. The evidence suggests that integration of human resource processes generally increases with maturity (Proposition 1). Findings also support a general tendency for increases in both collaborating and coordinating mechanisms as processes mature (Proposition 2). There is also evidence of interprocess differences in the rate of integration, degree of integration achievable at high levels of maturity, and blend of collaborative and coordinative structure among the various human resource

Figure 4 Migration of integration with increasing process maturity.



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processes investigated here (Proposition 3). There is some evidence to suggest that differences in integration may relate to structural factors such as degree of centralization, but more research is necessary before conclusions can be reached.

DISCUSSION

Literature that considers integration in the strategic context continues to expand. From early perspectives that viewed integration as a categorical strategy for enhancing vertical and horizontal control (for example, Harrigan 1984; Porter 1985), the concept of integration has evolved toward evaluative or descriptive characteristics of strategy (for example, Burgelman and Doz 2001; Fuchs et al. 2000) and top management team behavior (for example, Hambrick 1994; Simsek et al. 2005). Recently, attention has been shifting toward integration at the process level (for example, Chen, Daugherty, and Roath 2009; Swink, Narasihan, and Wang 2007). Process-oriented studies are sensible from both theoretical and practical standpoints. For scholars, processes offer a useful platform for studying the dynamics of change (Pettigrew, Woodman, and Cameron 2001). For managers, processes constitute an intuitive level of analysis, as reflected by the large number of practical frameworks that position processes as centerpieces of organizational effectiveness (for example, Hammer 2001; NIST 2005). As such, process-oriented inquiry brokers better exchange between research and practice deemed necessary to advance evidence-based management in the human resource domain (for example, Rynes, Giluk, and Brown 2007).

This study extends both the SHRM and quality literatures by elaborating the concept of human resource process integration in the context of process management. Process management motivates the control and improvement of processes that drive organizational performance (Benner and Tushman 2003; Flynn, Schroeder, and Sakakibara 1995; Hackman and Wageman 1995; Linderman et al. 2010). Integration concerns the structural links that exist between those processes that enable better collective outcomes. Attending to these linkages is therefore necessary to develop the strategic character of organizational

processes such as those related to human resources (Devanna, Fombrun, and Tichy 1981; Golden and Ramanujam 1985; Schuler 1992). Evidence from this study supports the notion that human resource process integration can be viewed as a function of maturity that flows from process management.

Another contribution of this investigation is the emphasis on both collaborative and coordinative dimensions of integration, and how these dimensions are expressed in mechanisms that promote human resource process integration. The collaborative dimension captures the classic view of integration as job sharing and social interaction necessary to achieve unified effort (Lawrence and Lorsch 1967), while the coordinative dimension addresses the requirement for direction and objectivity necessary to keep efforts on track toward effective goal achievement (Fredrickson 1986; Schweiger, Sandberg, and Rechner 1989). This study elaborates various structural mechanisms available for integration purposes (see Table 2) and demonstrates how process integration can be assessed by measuring characteristics of these mechanisms. However, this study stops short of exploring the circumstances under which particular mechanisms might or should be pursued. The results provide some evidence that structural characteristics such as centralization, standardization, and formality influence the degree and nature of process integration. Future work that investigates the fit between particular collaborative and coordinative mechanisms and various human resource processes, and on the moderating effects of centralization and other structural factors, constitutes one approach for extending this stream of research toward more detailed specification of interprocess differences in integration at a given level of maturity.

Inquiry into the intentionality of integration also seems warranted. The notion that focused effort is necessary to connect human resource activities with other organizational behavior pervades the literature (for example, Golden and Ramanujam 1985; Schuler 1992). However, straddling functional boundaries can be difficult, and managers may have trouble assessing levels of latent task interdependence between units (Sherman and Keller 2011). Plausibly, integration might indirectly evolve as a consequence of process

management. Teamwork, standardization, measurement, and other features of process management may provide a basis for generating collaborative and coordinative mechanisms in an unplanned manner from improvement efforts. Comparative study of intentional and evolutionary approaches to process integration could prove interesting.

Benner and Tushman (2003) proposed that process management promotes incremental innovation while discouraging radical innovation. The researchers also posited that process management increases organizational adaptation in stable environments but decreases adaptation in turbulent environments. Integrative linkages established by process management activities were suggested among the factors that limit adaptive capacity. However, rival propositions may be grounded in arguments that certain integrative mechanisms facilitate, rather than impede, large-scale change and adaptation by fostering collaborative work structure modifications and coordinated resource adjustment. In the human resource context, it is difficult to imagine effective strategic change that employs organizational processes void of integrative mechanisms. Moreover, some work suggests a salient role for integrative structure in facilitating processes of change (for example, Ford and Greer 2006). As research advances, studies that further consider the effects of process management and integration on organizational adaptation are necessary.

This study possessed several limitations. The organization sample was heavily weighted toward nonprofit sectors of government, healthcare, and education. Classic studies (for example, Pugh et al. 1968) suggest differences in the structural profiles of nonprofit and for-profit organizations. As such, it is possible that the integration patterns observed here might differ were the sample to contain more for-profit organizations. Due to the study's sample size, analytical methods were confined to simple statistics and pattern analysis. Measures of collaboration and coordination were binary in nature, as item integration scores were classified as being completely collaborative or coordinative in nature. Future studies might develop parsimonious measures that reflect both dimensions.

From a practical standpoint, this investigation suggests process management as an integration enabler.

Particularly when guided by empirical frameworks such as the Baldrige criteria, the outcomes of process management integrate organizational processes in a manner that develops their strategic character. The human resource context employed in this study demonstrates the progression. The strategic nature of human resource activities can be enhanced by identifying key workforce-related processes such as those in Table 1, and implementing integrative mechanisms such as those in Table 2 via process management initiatives. Because particular mechanisms may favor either the collaborative or coordinative dimensions of integration, process managers should seek a diversity of integrative structures that collectively provide a suitable blend of collaboration and coordination. Well-integrated processes encourage collaborative work that is coordinated in a manner that keeps unified effort on track toward strategic goal achievement. Properly employed, process management efforts enable integration as human resource processes mature and improve over time.

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APPENDIX A Human Resource Processes and Assessment Items*

5.1a Organization of Work (four items)

5.1a.1 How do you organize and manage work and jobs to promote cooperation, initiative, empowerment, innovation, and your organizational culture?

5.1a.2 How do you organize and manage work and jobs to achieve the agility to keep current with business needs?

5.1a.3 How do your work systems capitalize on the diverse ideas, cultures, and thinking of your employees and the communities with which you interact?

5.1a.4 How do you achieve effective communication and skill sharing across work units, jobs, and locations?

5.1b Performance Management (three items)

5.1b.1 How does your employee performance management system, including feedback to employees, support high performance work?

5.1b.2 How does your employee performance management system support a customer and business focus?

5.1b.3 How do your compensation, recognition, and related reward and incentive practices reinforce high performance work and a customer and business focus?

5.1c Hiring and Career Progression (three items)

5.1c.1 How do you identify characteristics and skills needed by potential employees?

5.1c.2 How do you recruit, hire, and retain new employees? How do you ensure the employees represent the diverse ideas, cultures, and thinking of your employee hiring community?

5.1c.3 How do you accomplish effective succession planning for leadership and management positions, including senior leadership? How do you manage effective career progression for all employees throughout the organization?

Education and Training (11 items)

5.2a.1 How do employee education and training contribute to the achievement of your action plans?

5.2a.2 How do your employee education, training, and development address your key needs associated with organizational performance measurement, performance improvement, and technological change?

5.2a.3 How does your education and training approach balance short- and longer-term organizational objectives with employee needs for development, learning, and career progression?

5.2a.4 How do employee education, training, and development address your key organizational needs associated with new employee orientation, diversity, ethical business practices, and management and leadership development?

5.2a.5 How do employee education, training, and development address your key organizational needs associated with employee, workplace, and environmental safety?

5.2a.6 How do you seek and use input from employees and their supervisors and managers on education and training needs?

5.2a.7 How do you incorporate your organizational learning and knowledge assets into your education and training?

5.2a.8 How do you deliver education and training? How do you seek and use input from employees and their supervisors and managers on options for the delivery of education and training?

5.2a.9 How do you use both formal and informal delivery approaches including mentoring and other approaches as appropriate?

5.2a.10 How do you reinforce the use of new knowledge and skills on the job?

5.2a.11 How do you evaluate the effectiveness of education and training, taking into account individual and organizational performance

5.3a Work Environment (five items)

5.3a.1 How do you improve workplace health, safety, security, and ergonomics?

5.3a.2 How do employees take part in improving them?

5.3a.3 What are your performance measures or targets for each of these key workplace factors?

5.3a.4 How do you ensure workplace preparedness for emergencies or disasters?

5.3a.5 How do you seek to ensure business continuity for the benefit of your employees and customers

5.3b Support and Satisfaction (five items)

5.3b.1 How do you determine the key factors that affect employee well-being, satisfaction, and motivation?

5.3b.2 How do you support your employees via services, benefits, and policies?

5.3b.3 What formal and informal assessment methods and measures do you use to determine employee well-being, satisfaction, and motivation?

5.3b.4 How do you use other indicators such as employee retention, absenteeism, grievances, safety, and productivity to assess and improve employee well-being, satisfaction, and motivation?

5.3b.5 How do you relate assessment findings to key business results to identify priorities for improving the work environment and employee support climate?

*Based on 2005 version of Baldrige criteria (NIST 2005)