

AN UPDATE ON BUSINESS-IT ALIGNMENT: “A LINE” HAS BEEN DRAWN¹

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Executive Summary

For almost three decades, practitioners, academics, consultants, and research organizations have identified “attaining alignment between IT and business” as a pervasive problem. Is it as difficult as drawing “a line in the sand”? Although we have seen improvement, there are reasons why alignment is a persistent issue—as will be discussed.

Our research has found that no alignment silver bullet exists. Rather, alignment involves interrelated capabilities that can be gauged by measuring six components: communications, value, governance, partnership, scope and architecture, and skills. These six components can then be placed in a five-level maturity model, where Level 5 is the highest maturity. From measuring these six components in 197 mainly Global 1,000 organizations in the United States, Latin America, Europe, and India, we found that most organizations today are at Level 3.

Our research, and others’ research, has also found positive correlations between the maturity of IT-business alignment and (1) IT’s organizational structure, (2) the CIO’s reporting structure and (3) firm performance. Federated IT structures are associated with higher alignment maturity than centralized or decentralized structures. Companies with CIOs reporting directly to the CEO, president, or chairman have significantly higher alignment maturity than those where the CIO reports to a business unit executive, the COO, or the CFO. And higher alignment maturity correlates with higher firm performance.²

THE PERSISTENT ISSUE OF ACHIEVING IT-BUSINESS ALIGNMENT

The issue of achieving IT-business alignment was first documented in the late 1970s³ and was in the Top-10 IT management issues from 1980 through 1994, as reported by the Society for Information Management (SIM). Since 1994, it has been issue #1 or #2. These results are consistent with other studies, such as CSC’s survey rankings and The Conference Board’s surveys of CEOs.⁴

We have found three primary reasons why attaining IT-business alignment has been so elusive.

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³ The IT-business alignment issue was first raised by Ephraim McLean and John Soden in *Strategic Planning for MIS*, John Wiley and Sons, New York, 1977.

⁴ See the 14th annual survey of Critical Issues of Information Management (North America)-CSC 2001 and: Earl, M. J. *Corporate Information Systems Management*, Richard D. Irwin, Inc. Homewood, Illinois, 1983; Ball, L., and Harris, R. “SIM Members: A Membership Analysis,” *MIS Quarterly* (6:1), March 1982, pp. 19-38; Dickson, G. W., Leitheiser, R. L., Wetherbe, J. C., and Nechis, M. “Key Information Systems Issues for the 1980s,” *MIS Quarterly* (8:3), September 1984, pp. 135-159; Brancheau, J. C., and Wetherbe, J. C. “Key Issues in Information Systems Management,” *MIS Quarterly* (11:1), March 1987, pp. 23-45; Brancheau, J. C., Janz, B. D., and Wetherbe, J. C. “Key Issues in Information Systems Management: 1994-95 SIM Delphi Results,” *MIS Quarterly* (20:2), June 1996, pp. 225-242.

The first reason is that the definition of alignment is frequently focused only on how IT is aligned (e.g., converged, in harmony, integrated, linked, synchronized) with the business. Alignment must also address how the business is aligned with IT. Alignment must focus on how IT and the business are aligned with each other; IT can both enable and drive business change.

The second reason is that organizations have often looked for a silver bullet. Originally, some thought the right technology (e.g., infrastructure, applications) was the answer. While important, it is not enough. Likewise, improved communications between IT and the business help but are not enough. Similarly, establishing a partnership is not enough nor are balanced metrics that combine appropriate business and technical measurements. Clearly, mature alignment cannot be attained without effective and efficient execution and demonstration of value, but this alone is insufficient.

More recently, governance has been touted as the answer—to identify and prioritize projects, resources, and risks. Today, we also recognize the importance of having the appropriate skills to execute and support the environment. Our research has found that all six of these components must be addressed to improve alignment.

The third reason IT-business alignment has been elusive is that there has not been an effective tool to gauge the maturity of IT-business alignment—a tool that can provide both a descriptive assessment and a prescriptive roadmap on how to improve. From measuring the six components in organizations in the United States, Latin America, Europe, and India, we found that most organizations today are in Level 3 of a five-level maturity assessment model.

Our research suggests that while there is no silver bullet for achieving alignment, progress has been made. In fact, we believe that our research demonstrates that “a line” has been drawn.⁵ When organizations cross it, they have identified and addressed ways to enhance IT-business alignment. The alignment maturity model is thus both descriptive and prescriptive. CIOs can use it to identify their organization’s alignment maturity and identify means to increase it. Yet, that “line” is dynamic and continually evolving. So alignment can always be improved.

5 Luftman, J. *Competing in the Information Age: Align in the Sand*, Oxford University Press, 2003.

A STRATEGIC ALIGNMENT MATURITY MODEL

The Strategic Alignment Maturity (SAM) model used in this article comes from the lead author’s work since 2000.⁶ The model consists of six components of an organization that can indicate IT-business alignment maturity. An organization’s score for each one is then placed on a maturity model, which will be discussed shortly.

Six Components of Alignment Maturity

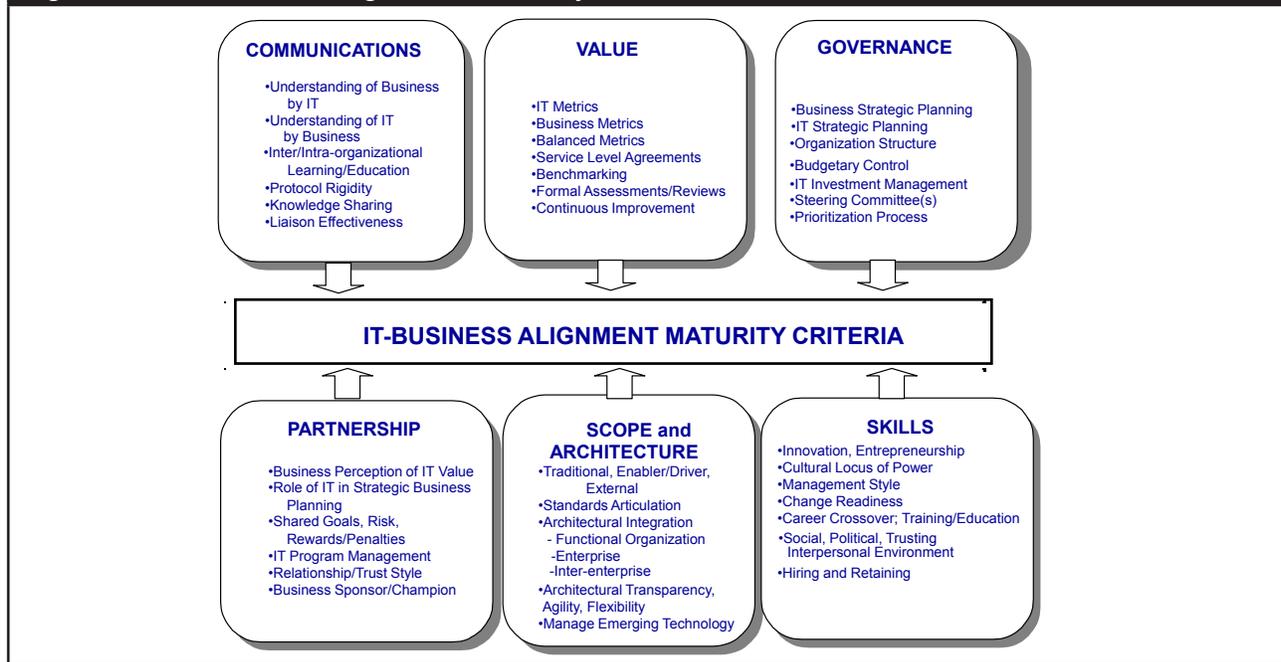
The six components for assessing alignment maturity are briefly explained below. The specific criteria measured in each are listed in Figure 1.

1. **Communications:** Measures the effectiveness of the exchange of ideas, knowledge, and information between IT and business organizations, enabling both to clearly understand the company’s strategies, plans, business and IT environments, risks, priorities, and how to achieve them.
2. **Value:** Uses balanced measurements⁷ to demonstrate the contributions of information technology and the IT organization to the business in terms that both the business and IT understand and accept.
3. **Governance:** Defines who has the authority to make IT decisions and what processes IT and business managers use at strategic, tactical, and operational levels to set IT priorities to allocate IT resources.
4. **Partnership:** Gauges the relationship between a business and IT organization, including IT’s role in defining the business’s strategies, the degree of trust between the two organizations, and how each perceives the other’s contribution.
5. **Scope and Architecture:** Measures IT’s provision of a flexible infrastructure, its evaluation and application of emerging technologies, its enabling or driving business process changes, and its delivery of valuable

6 Luftman, J. “Assessing Business-IT Alignment Maturity,” *Communications of the Association for Information Systems*, Volume 4, December 2000.

7 A “balanced measurement” includes metrics for assessing both IT and the business. The metrics should be easy to understand, derived jointly by IT and business stakeholders, and prescribe a clear direction for improvement.

Figure 1: IT-Business Alignment Maturity Criteria



customized solutions to internal business units and external customers or partners.

- Skills:** Measures human resources practices, such as hiring, retention, training, performance feedback, encouraging innovation and career opportunities, and developing the skills of individuals. It also measures the organization's readiness for change, capability for learning, and ability to leverage new ideas.

Five Levels of Alignment Maturity

The scores an organization achieves for these six components of maturity are then compared to a five-level maturity model to denote the organization's IT-business alignment maturity. These five maturity levels draw on the core concepts of the Software Engineering Institute's Capability Maturity Metric (CMM), but the focus here is solely on IT-business alignment. Following are the definitions of the five levels of alignment maturity, which are summarized in Figure 2.

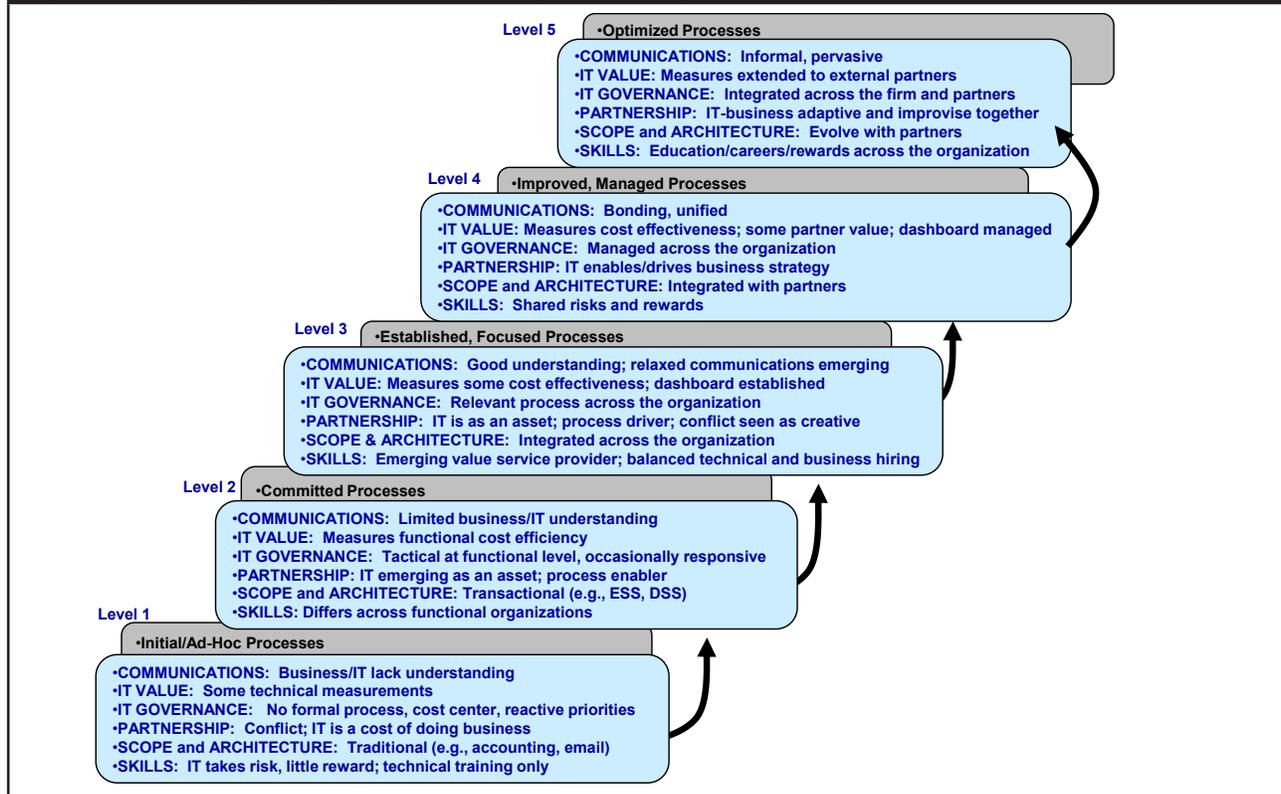
Level 1: Initial or ad-hoc processes. Organizations at Level 1 generally have poor communications between IT and the business and also a poor understanding of the value or contribution the other provides. Their relationships tend to be formal and rigid, and their metrics are usually technical rather than business oriented. Service level agreements tend to be sporadic. IT planning or business planning is ad-hoc. And IT is viewed as a cost center and considered "a cost of doing

business." The two parties also have minimal trust and partnership. IT projects rarely have business sponsors or champions. The business and IT also have little to no career crossovers. Applications focus on traditional back-office support, such as e-mail, accounting, and HR, with no integration among them. Finally, Level 1 organizations do not have an aligned IT-business strategy.

Level 2: Committed processes. Organizations at Level 2 have begun enhancing their IT-business relationship. Alignment tends to focus on functions or departments (e.g., finance, R&D, manufacturing, marketing) or geographical locations (e.g., U.S., Europe, Asia). The business and IT have limited understanding of each others' responsibilities and roles. IT metrics and service levels are technical and cost-oriented, and they are not linked to business metrics. Few continuous improvement programs exist. Management interactions between IT and the business tend to be transaction-based rather than partnership-based, and IT spending relates to basic operations. Business sponsorship of IT projects is limited. At the function level, there is some career crossover between the business and IT. IT management considers technical skills the most important for IT.

Level 3: Established, focused processes. In Level 3 organizations, IT assets become more integrated enterprise-wide. Senior and mid-level IT management understand the business, and the business's understanding of IT is emerging. Service level agreements (SLAs) begin to emerge across

Figure 2: Strategic Alignment Maturity Summary



the enterprise; although the results are not always shared or acted upon. Strategic planning tends to be done at the business unit level, although some inter-organizational planning has begun. IT is increasingly viewed by the business as an asset, but project prioritization still usually responds to “the loudest voice.” Formal IT steering committees emerge and meet regularly. IT spending tends to be controlled by budgets, and IT is still seen as a cost center. But awareness of IT’s “investment potential” is emerging. The business is more tolerant of risk and is willing to share some risk with IT. At the function level, the business sponsors IT projects and career crossovers between business and IT occur. Both business and technical skills are important to business and IT managers. Technology standards and architecture have emerged at both the enterprise level and with key external partners.

Level 4: Improved, managed processes. Organizations at Level 4 manage the processes they need for strategic alignment within the enterprise. One of the important attributes of this level is that the gap has closed between IT understanding the business and the business understanding IT. As a result, Level 4 organizations have effective decision making and IT provides services that reinforce the concept of IT as a value center. Level 4 organizations leverage their IT assets enterprise-wide, and they focus applications

on enhancing business processes for sustainable competitive advantage. SLAs are also enterprise-wide, and benchmarking is a routine practice. Strategic business and IT planning processes are managed across the enterprise. Formal IT steering committees meet regularly and are effective at the strategic, tactical, and operational levels. The business views IT as a valued service provider and as an enabler (or driver) of change. In fact, the business shares risks and rewards with IT by providing effective sponsorship and championing all IT projects. Overall, change management is highly effective. Career crossovers between business and IT occur across functions, with business and technical skills recognized as very important to the business and IT.

Level 5: Optimized processes. Organizations at Level 5 have optimized strategic IT-business alignment through rigorous governance processes that integrate strategic business planning and IT planning. Alignment goes beyond the enterprise by leveraging IT with the company’s business partners, customers, and clients, as well. IT has extended its reach to encompass the value chains of external customers and suppliers. Relationships between the business and IT are informal, and knowledge is shared with external partners. Business metrics, IT metrics, and SLAs also extend to external partners, and benchmarking is routinely performed with these partners. Strategic

Figure 3: Industry Maturity Levels by the Six Criteria

Industry Name	# of Companies	Communication	Competency	Governance	Partnership	Scope of IT Architecture	Skills	OVERALL Average
Retail	7	3.65	3.57	3.52	3.9	3.81	3.51	3.7
Transportation	3	3.1	3.8	3.57	3.53	3.63	3.6	3.54
Hotel / Entertainment	6	3.46	3.46	3.53	3.44	3.62	3.45	3.49
Services	27	3.18	3.21	3.28	3.32	3.28	3.22	3.2
Insurance	6	3.16	3.15	3.3	3.17	3.24	2.9	3.15
Manufacturing	46	3.22	3.1	3.15	3.3	3.17	2.9	3.15
Health	5	3.06	2.79	3.34	3.06	3.24	3.17	3.11
Chemical	7	2.78	2.84	2.93	2.87	3.28	2.84	2.93
Financial	57	2.83	2.92	2.98	2.86	3.03	2.7	2.9
Government	6	2.94	2.7	3.07	3.07	2.99	2.67	2.9
Oil / Gas / Mining	3	2.96	2.86	2.92	2.84	3.22	2.64	2.9
Utilities	7	2.96	2.94	2.81	2.84	3.13	2.6	2.88
Pharmaceutical	14	2.74	2.58	2.71	2.64	2.85	2.71	2.7
Educational	3	1.86	1.74	1.66	1.41	1.78	1.833	1.71

Overall Alignment Average Score: 3.04

business and IT planning are integrated across the organization, as well as outside the organization.

ANALYSIS OF THE ALIGNMENT DATA

This study involved analyzing the responses of business and IT executives from 197 companies, primarily Global 1,000 companies.⁸ Of the 197 organizations, 124 were based in the United States, 38 were in Latin America (the largest in the region, although below the Global 1,000 level), 11 were in Europe, and 24 were in India (half were in the IT services industry). This article only discusses the companies at Levels 2, 3, and 4, which comprise about 96% of the participants. We found Level 5 companies in an earlier pilot.

Four Main Observations

We analyzed the responses in numerous ways.⁹ Our analyses uncovered four main observations, which are briefly presented below, along with an accompanying figure for each one.

Industries vary in their alignment maturity. One analysis was by industry. As can be seen in Figure 3, the average overall maturity score for all the companies was 3.04—shown by the midpoint dark line. The three industries with the highest maturity scores—retail, transportation and hotel/entertainment—were well above the midpoint for Level 3 companies; however, these industry samples were quite small.

Alignment maturity is rising. A second analysis compared maturity scores across years. As can be seen in Figure 4, the first set of data was collected from 2000 to 2003. The average alignment maturity was a high Level 2 (2.99). The second set of data was collected from 2004 to 2007. The average maturity

was a low Level 3 (3.18). This rise demonstrates that maturity did increase.

The figure also shows that some 96% of the 197 organizations were either at Level 2, Level 3, or Level 4 during these timeframes—11.68% were at Level 2, 63.96% at Level 3, and 20.3% at Level 4. In the 2000-2003 data, about 75% of the U.S. companies were at Level 3 or higher. In 2004-2007, about 94% of the U.S. companies were Level 3 or above. Obviously, a marked improvement took place; “a line” has been drawn.

Business executives score alignment higher than IT executives. A fourth comparison was between IT and business respondents, at the granular level of the individual criteria within the six components of maturity. In all, we had 1,527 respondents, with 727 from IT (105 CIOs, 10 CTOs, and 612 other IT executives) and 800 from the business (88 CEOs, 97 CFOs, 159 VPs, and 456 other business executives). Figure 5 notes that their average alignment score overall was 3.04. It also illustrates that the business executives generally ranked alignment maturity higher than the IT executives.

This overall score of 3.04 indicates that IT is becoming embedded with the business. Interestingly, Scope and Architecture scored the highest of the six (average maturity 3.14), while Skills scored the lowest (2.90). Those criteria with the lowest combined IT and business scores are highlighted in the figure.

Rankings among Level 2, 3, and 4 companies are remarkably consistent. A fifth analysis compared the maturity scores of the companies in Levels 2, 3, and 4. As shown in Figure 6, the rankings are very consistent. Respondents in the Level 4 companies ranked almost every criterion in the Level 4 range—as you would expect—and only one criterion was rated lower by Level 3 respondents than Level 2 respondents—again, as you would expect. Furthermore, overall, the three sets of lines mirror each other.

Similarities and Differences Among the Criteria

Figure 6, with the comparisons among the Level 2, 3, and 4 organizations, deserves more analysis. So we now look at their differences and similarities.

Scope and Architecture: Scope and Architecture received the highest overall score of 3.14 among the six components. This finding reveals that the typical firm in this sample is well within Level 3 in this maturity component. Scope and Architecture is the

8 The six components of alignment maturity were initially validated by evaluating 25 Fortune 500 companies. Early studies included five companies that were invited to participate because of their exemplar reputation; these companies were assessed at Level 5. Our procedure for assessing maturity is described in the Appendix. Some two-thirds of the data was gathered from interviews or group discussions. The rest came from questionnaires.

9 The findings for subsets of participants have been reported in Luftman, op. cit., 2003, as well as Nash, E. “Assessing IT As a Driver or Enabler of Transformation in the Pharmaceutical Industry Employing the Strategic Alignment Maturity Model.” Doctoral Dissertation, Stevens Institute of Technology, 2005; Sledgianowski, D., Luftman, J., and Reilly, R. “Identification of Factors Affecting the Maturity of IT-Business Strategic Alignment,” *Proceedings of the Americas Conference on Information Systems*, August 2004; Sledgianowski, D. “Identification of IT-Business Strategic Alignment Maturity Factors,” Doctoral Dissertation, Stevens Institute of Technology, 2005.

Figure 4: Maturity Levels by Years

Years	Number of Companies	% of companies in level 1 ¹	% of companies in level 2 ²	% of companies in level 3 ³	% of companies in level 4 ⁴	% of companies in level 5 ⁵	Overall Average
2000-2003	83	2.41	20.48	46.99	24.10	6.02	2.99
2004-2007	114	0.88	5.26	76.32	17.54	0.00	3.18
Overall	197	1.52	11.68	63.96	20.30	2.54	3.04

1. Level 1: organizations with maturity average in the range of 1.0-1.99
2. Level 2: organizations with maturity average in the range of 2.0-2.99
3. Level 3: organizations with maturity average in the range of 3.0-3.59
4. Level 4: organizations with maturity average in the range of 3.60-4.50
5. The level 5 companies with maturity average > 4.50 were selected as part of a pilot group benchmarked because of their exemplar reputation; the overall 2000-2003 average would only be 2.90 if these 5 companies were excluded

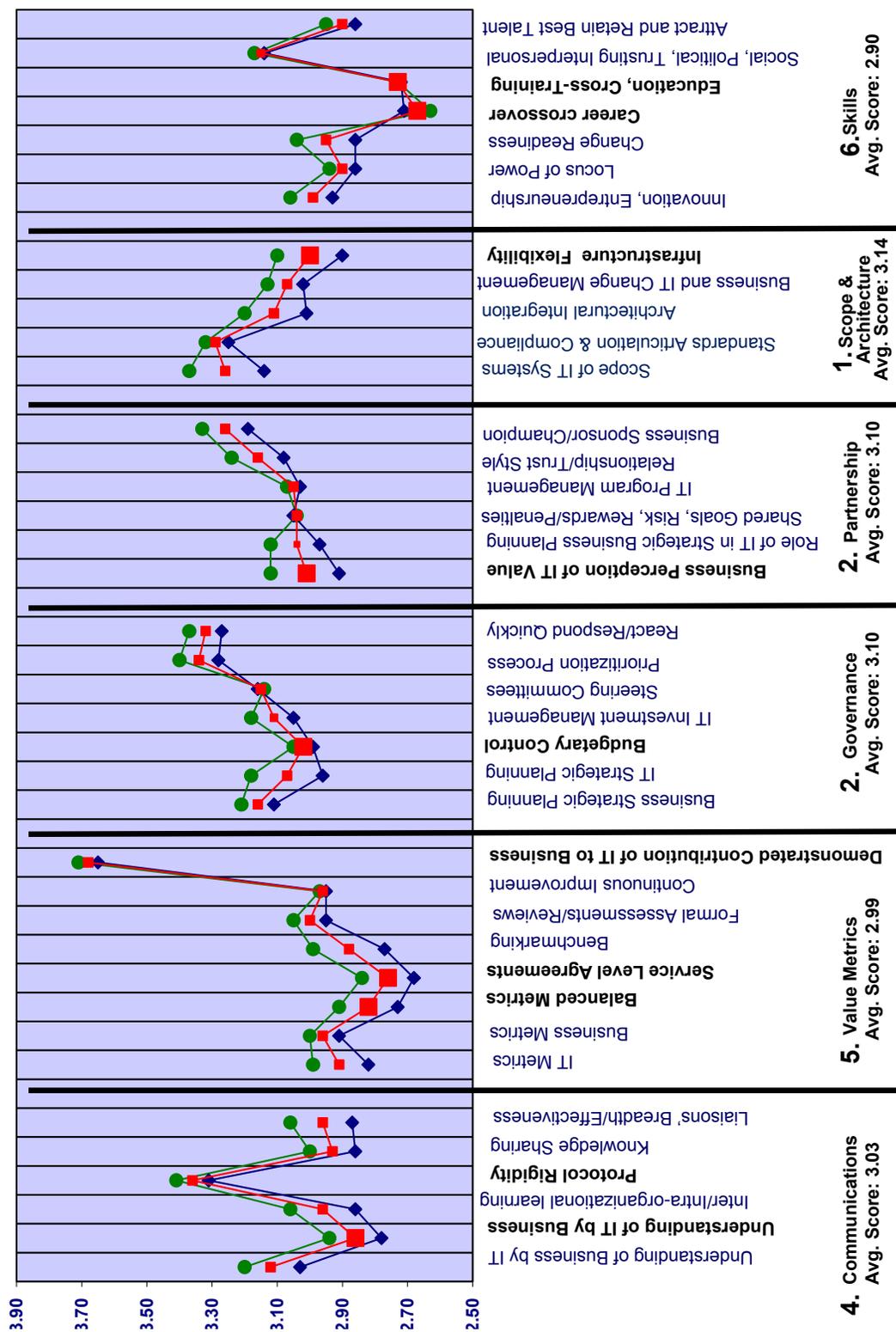
only technical component in the model. It indicates how well IT provides a flexible infrastructure, introduces emerging technologies, fosters business process change, and delivers value to the business, customers, and partners. As business executives recognize the importance of integration across their enterprise and external partners, they realize the importance of understanding how to leverage information technologies to carry out their business strategies. Figure 6 provides an interesting comparison among the responses from Level 2, 3, and 4 companies in Architectural Flexibility (one of the five criteria in Scope and Architecture). Level 2 and 3 respondents gave it the lowest score in Scope and Architecture. But those from Level 4 did not, which suggests that Level 4 companies place more importance on Architectural Flexibility. The rationale for this difference is probably that Level 2 and 3 organizations tend to view IT infrastructure as a utility that provides basic IT services at minimum cost. Level 4 organizations, on the other hand, view their IT infrastructure as a resource to enable fast response to changes in the marketplace. Standards Articulation and Compliance provides another contrast across the maturity levels. Level 2 organizations define and enforce standards at the function level, whereas Level 4 organizations define and enforce them across business units, because they recognize the importance of integrating across the firm. In fact, many Level 4s are beginning to integrate their standards with external business partners. With Level 4 architecture, business or IT change can be made transparently across the organization, as the following example illustrates. One online retailer in this study, with a Level 4.0 maturity, has a customer base of 60 million and more than one million external partners. It has driven its technology scope and IT

architecture based on its customers' expectations. Its IT architecture is based around Web services, which permit its transaction layer systems to handle online business applications, while shielding its partners' databases from having to change. The difference between a Level 4 and Level 5 company is how much an enterprise has expanded its IT impact externally to its customers and partners. This company has the earmarks of approaching Level 5 architecture maturity.

Governance: Governance received an overall maturity score of 3.10, as shown in Figure 6, as did Partnership. These two components of alignment maturity tied for the second highest maturity score. IT Governance measures how much IT decision-making authority is defined and shared among organizational units and how much both IT and business managers participate in setting priorities for allocating IT resources. Governance also involves managing external partners and ensuring regulatory compliance. Governance is not just about specific decisions. It is about the underlying principles—who makes the decisions, why, and how. Governance maturity increases as the processes for integrating business and IT priorities, planning, and budgeting become more efficient and effective.

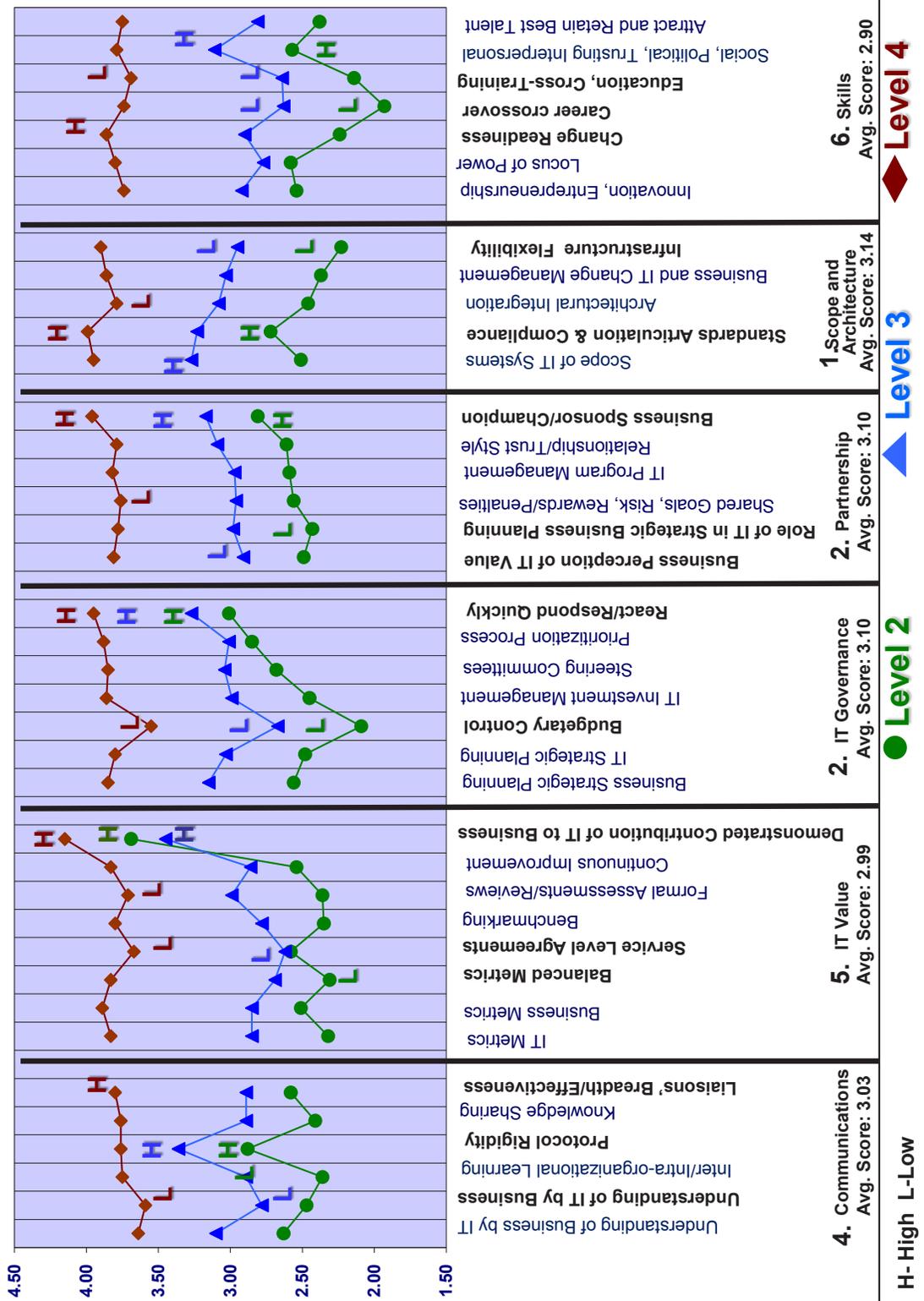
For effective IT governance, companies also need effective communications, partnerships, and value metrics between IT and the business. The overall score of 3.10 places the typical firm in this sample at Level 3 governance maturity. All three levels of organizations scored Budgetary Control lowest in this Governance component. Even though budgetary control is considered the most basic governance mechanism, it tends to promote the perception of IT as a “cost” rather than as an investment or a generator

Figure 5: Comparisons of Business and IT Executives' Responses



Overall Alignment Average Score: 3.04 ■ **Lowest** ■ **Bus** ◆ **IT** ◆ **Avg**

Figure 6: Comparisons of Level 2, 3, and 4 Responses



of profit. Perhaps that is why all levels rated this maturity low. All three levels also gave their highest Governance rating to React/Respond Quickly, which indicates that IT recognizes the importance of being flexible with its business partners. As could be expected, the Level 4 firms rated this item considerably higher than Levels 2 and 3. We found that Business Strategic Planning with IT participation and IT Strategic Planning with business participation tended to occur only at the functional level, with some IT participation. For example, one large finance company (3.0 maturity level) employs over 300,000 people and has revenues of more than \$1 billion every 11 days. It has a federated IT governance structure (an important governance consideration) with “separation of powers.” Its “executive branch” is executive management and its board of directors, which oversee strategic aspects as well as development and design priorities. Its “legislative branch” establishes the goals and directions of its service oriented architecture (SOA) efforts. And its “judicial branch” is comprised of enterprise architectural boards, which deal with conflict resolution and compliance audits. SOA initiatives are also divided hierarchically, with enterprise, division, line of business, and departmental levels. Management believes that mature alignment requires effective steering committees that address strategic, tactical, and operational decisions.

Partnership: Partnership is the relationship between the business and IT and includes IT’s role in defining business strategies, the degree of trust between the parties, and each one’s perception of the other’s contribution. Mutual trust and sharing of risks and rewards are key attributes. The overall score of 3.10 reveals that the typical firm in this sample has a Level 3 Partnership maturity, where IT does play a role in defining business strategies. All three levels of firms in this sample scored Business Sponsor/Champion as the highest Partnership item, which suggests that business sponsorship of initiatives is critical to partnering. Level 2 organizations generally only have a senior IT sponsor/champion for IT-based initiatives. Level 3 organizations often have a senior IT and business sponsor/champion at a functional unit level. Level 4 organizations often have a senior IT and business sponsor/champion at the corporate level. Business executives must be visible in their roles as project sponsor and champion because only they, not IT executives, can require the business to make the appropriate changes to the business for an IT project to deliver its full value. For example, a large electronics manufacturer with an overall maturity level of 3.13 successfully implemented a global supply chain management system. Its success stemmed from the

senior business partners making sure that the business actually implemented the appropriate organizational and business process changes in concert with the IT changes. These changes extended beyond the company to foreign suppliers, integrating them into the company’s design, build, and distribution of its products. Without the visible and active involvement of the business sponsor and champions, this project would have failed.

Communications: Communications captures how well IT and business executives understand each other. The overall score of 3.03 in this study places Communications in fourth place among the components and at a Level 3 maturity.

As Figure 6 shows, Liaisons’ Breadth/Effectiveness is ranked highest by all three levels of organizations. Interestingly, at one large Level 3 insurance company, communications between the IT and business organizations became so effective that management decided the liaisons were no longer necessary. Unfortunately, this is rare. Too frequently, liaisons serve mainly as translators—buffers between IT and the business—rather than as facilitators who enhance the IT-business relationship.

As also shown in Figure 6, Level 2 firms rank Inter/Intra-Organizational Learning lowest, likely because it generally takes place via traditional newsletters, reports, and group e-mails. In addition, both Level 2 and Level 3 organizations gave Protocol Rigidity (which means difficulty in accessing stakeholders) their highest score. In general, the communication style between the business and IT at Level 2 tends to be one-way, from the business. At Level 3, it tends to be two-way. Apparently, the respondents were satisfied with these styles, hence the high scores. Importantly, Level 3 and Level 4 organizations gave Understanding of IT by Business the lowest Communications score. While it is important for both IT to understand the business and the business to understand IT, clearly, respondents believe that business understanding of IT is a larger concern than IT’s understanding of the business. IT and business need to work together to identify opportunities for enhancing effective and efficient communications among the organizations.

As an example, another large insurance company with a Level 3.3 maturity realized that its IT staff members first needed to understand the business’s processes before they could identify opportunities to leverage IT in those processes. So IT staff are continually given opportunities to work closely with senior business managers, as well as take courses that focus

on the insurance industry and the business processes important to the firm's future success.

Value: Value is the contribution that IT and the IT organization make to the business in terms that the business and IT understand and accept. To demonstrate their business value, many IT organizations need a balanced "dashboard" that demonstrates IT's contribution to the business.

As illustrated in Figure 6, all three levels of respondents rated Demonstrated Contribution of IT to the Business the highest in the Value component. Yet, Value ranks fifth of the six components, garnering only a 2.99 overall. So the rank within Value is high, but not overall. Even so, this high ranking illustrates that both the business and IT at all levels recognize the importance of measuring the contribution that individual IT initiatives make on the business.

Interestingly, Level 2's rating of Demonstrated Contribution of IT to the Business is actually higher than Level 3's rating—which is unexpected. Perhaps this result is due to Level 3 firms' focus on benchmarking and formal reviews, which they may see as obviating the need to measure IT contribution.

Level 4 organizations rank Demonstrated Contribution of IT to the Business as the most mature of all the criteria. A large trucking company, with an alignment maturity of 4.4, demonstrates why. It has leveraged its internal value metrics to change the face of competition. Originally, its metrics aimed to encourage more efficient and competitive IT-enabled processes, because its transportation industry faced falling demand and highly competitive pricing. Its metrics led the trucking company to enhance customer service. Customers can dial directly into the company and review the status and location of any delivery. Satellite technology lets the company pinpoint truck location. The company collects this data not only for its customers but to improve its business processes. This data is continually analyzed. "If we can measure it, we can manage it" reflects the company's success in IT-business alignment.

On the other hand, Level 3 and 4 organizations gave SLAs the lowest score in the Value category. Perhaps their rating is low because they see SLAs as only setting the baselines for IT delivery, not for contributing to business success. SLAs define expectations for IT support. To create proper SLAs, and effective management processes around them, the business needs to understand IT processes. Level 2 SLAs are primarily technically oriented. Level 3 SLAs are both technically and relationship oriented. They

are at the functional level and are emerging at the enterprise level. Level 4 SLAs mature beyond Level 3 at the enterprise level.

Skills: Skills is the human resources practices in IT—such as training, performance feedback, encouraging innovation, and providing career opportunities—as well as the IT organization's readiness for change, capability for learning, and ability to leverage new ideas. Skills received the lowest overall score (2.90) of the six components, which reveals that the typical firm is at a Level 2 in this aspect of IT-business alignment maturity. With the low scores for Attract and Retain Best Talent, it is no wonder this concern has surpassed IT-business alignment in the 2007 SIM survey of major issues. The Change Readiness scores are also revealing. The high rating by the Level 4 organizations indicates that they recognize the importance of having an effective change management process where IT and the business work closely together. Career Crossover similarly shows a distinct maturity gap between the Level 4s and the Level 2s and 3s. The Level 4s see this criterion as an excellent vehicle for preparing business and IT staff with the empathy and the experience needed to build strong IT-business relations. The Level 2s and 3s do not take advantage of this practice. For example, a large aerospace company assessed its Skills maturity at Level 2. It had a command-and-control management style across IT and the business. Power resided in siloed operating units. Diverse business cultures abounded. To move upward in its alignment maturity, this organization would need to instill a non-political, trusting environment between the business and IT. Risks would need to be shared, and the culture would need to reward innovation and entrepreneurship. Since completing its maturity assessment, management realized the potential value of addressing these issues. In the past year and a half, it has raised itself to Level 3.2. It created a well-defined education program, as well as implemented rotational assignments among its operating units.

Hopefully, the level of detail of the criteria provides CIOs and their business partners fodder for evaluating their own alignment maturity. Our research has also uncovered links between alignment and IT organizational structure, and alignment and CIO reporting structure.

Alignment and IT Organizational Structure

Does organizational structure affect alignment maturity? We think so. The participants in this study reported having three IT organizational structures:

- *Central* IT organization (40% of respondents): All IT resources report to one unit, usually led by a CIO.
- *Decentralized* IT organization (13% of respondents): Each business unit has its own IT organization.
- *Federated* IT organization (47% of respondents): Some parts of IT are centralized (e.g., IT infrastructure, standards, common systems) and other parts are decentralized (e.g., application resources specific to the business units).

Previously, IT organizational structure has been associated with strategic alignment.¹⁰ So we looked for differences in alignment maturity among the three structures. We found that organizations with a federated IT had significantly higher alignment maturity (3.31) than those with centralized (2.86) or decentralized (2.89) structures. Therefore, it appears that IT organizations that combine the strengths of centralization and decentralization, while minimizing their weaknesses, enhance their IT-business relationship. However, organizing IT federally will not by itself ensure mature alignment because there is no silver bullet. But the evidence suggests that IT organization structure can enable alignment.

Alignment and the CIO Reporting Structure

Another frequent IT governance topic of discussion is the reporting structure of the senior IT executive because it can affect IT-business alignment. The participants in this study reported four CIO reporting structures. The CIOs report to the:

- *CEO/President/Chairman* (46% of companies),
- *Business Unit Executive* (23% of companies),
- *COO* (19% of companies),
- *CFO* (12% of companies).

Our analysis found that organizations whose senior IT executive reported to the CEO, president, or chairman had significantly higher alignment maturity (3.42) than those whose senior IT executive reported to a business unit executive (3.23), the COO (3.02), or the CFO (2.89). This finding suggests that having the senior IT executive reporting to the CEO, president, or chairman could provide the best structure for maturing their IT-business alignment. However, having the senior

10 See Agarwal, R., and Sambamurthy, V. "Principles and Models for Organizing the IT Function," *MIS Quarterly Executive* (1:1), March 2002, pp. 1-16.

IT executive reporting to the most senior business executive will not by itself ensure mature alignment because, again, there is no silver bullet. But the evidence suggests that the CIO reporting structure also enables alignment.

ALIGNMENT AND FIRM PERFORMANCE

Research over the past three decades has consistently identified IT-business alignment as a pervasive problem. This research shows that organizations can evolve multiple IT capabilities and management mechanisms to better align IT and business. Although this study focused on Global 1,000 organizations, it can apply (and has been applied) to organizations of all sizes.

Even more compelling a reason to address the IT-business alignment issue is recent evidence of a link between IT-business alignment and firm performance. The same assessment criteria discussed here were used in two research projects—one in pharmaceuticals¹¹ and the other in banking.¹² These studies found an association between higher levels of IT-business alignment maturity and higher levels of firm performance. Such findings add credence to the belief that developing IT capabilities to achieve a higher level of IT-business alignment maturity is important.

This study provides a roadmap for improving IT-business harmony, through the six components that affect maturity. Organizations can begin by benchmarking their IT-business alignment and then developing their own path for maturing their alignment.

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11 Based on data collected in 2004 and 2005 from 145 IT and business executives in nine large pharmaceutical firms, Nash found that companies with higher total sales and higher productivity generally reported higher levels of alignment maturity. See Nash, E. "Assessing IT as a Driver or Enabler of Transformation in the Pharmaceutical Industry Employing the Strategic Alignment Maturity Model," Doctoral Dissertation, Stevens Institute of Technology, 2005.

12 Based on data collected in 2006 and 2007 from 27 companies in the banking industry for an in-progress doctoral dissertation at Stevens Institute of Technology, Dorociak has reported finding a strong association between higher company performance measures (market share, use of new products, customer reputation, quality, return on investments (ROI), and technical innovation) and higher IT-business alignment maturity levels.

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APPENDIX: THE RESEARCH PROCESS

The maturity levels for about two-thirds of the organizations in this study were gathered from interviews or group (evaluation team) discussions; the data from the remaining one-third were gathered from questionnaires. The procedure using "evaluation teams" was as follows.

1. Each of the criteria within the six components were first assessed individually by an evaluation team that was typically comprised of leading IT and business executives from the organization being assessed. All items for each component were rated on a 1–5 point Likert scale, where "1" denoted very ineffective and "5" denoted very effective. Based on these ratings, each of the 47 criteria (only the criteria used as maturity vehicles are included in the figures) and the six components were categorized at Level 1, Level 2, Level 3, Level 4, or Level 5. The figures do not include the items used to measure organization structure and IT reporting.
2. The evaluation team of IT and business executives (usually with an outside facilitator) then used their individual ratings to converge on an overall assessment level/score of maturity for the organization. This process applied the model as a descriptive tool.
3. The evaluation team then applied the next higher level of maturity as a prescriptive roadmap to improve the alignment of IT and business by identifying specific opportunities for moving to that next higher level.