

A marketing maturity model for IT: Building a customer-centric IT organization

R. Hirschheim
A. Schwarz
P. Todd

Despite a variety of management tools, valuable management prescriptions, and the desire of information technology (IT) managers and business managers alike to build a better relationship, the current state of the IT-business relationship is far from ideal. Although many believe the difficulty in managing this relationship is rooted in differences in knowledge, culture, motivation, and language, we argue in this paper that the key to managing relationships is in the frame of reference and that a marketing perspective can prove valuable. We outline how concepts from marketing (e.g., price, product, customer, place, and promotion) are useful within an IT context and propose a marketing maturity model for IT executives to assess how to enhance their relationship with their business counterparts.

INTRODUCTION

Providing business value through the delivery of information technology (IT) is the core mission of IT organizations.¹ It is generally understood that to accomplish this mission it is critical to have an effective IT-business relationship, yet achieving this objective is no simple task. Two main reasons have been offered for the hindrance of effective relationships. First, the belief in the value of the IT function (in general) and the chief information officer (CIO) (in particular) appears to be declining,²⁻⁵ and second, which is closely related, the dramatic cycles of restructuring, reengineering, downsizing, outsourcing, back sourcing,⁶ and now offshoring^{7,8} of the IT function have led to a view that the IT department is a commodity.⁵ Although some of these activities were undertaken to save costs, many—it can be argued—have been the result of a

failure to build an effective relationship between IT and the business. Indeed, efforts to transform IT, such as reengineering and outsourcing, have concentrated on process and structure, but have not been as successful at achieving the goal of fostering a sound and effective relationship between IT and the business as has been hoped for.

The importance of achieving better relationships between IT and the business cannot be overstated. Achieving strategic alignment with the business is advocated as a critical step to realizing business

©Copyright 2005 by International Business Machines Corporation. Copying in printed form for private use is permitted without payment of royalty provided that (1) each reproduction is done without alteration and (2) the Journal reference and IBM copyright notice are included on the first page. The title and abstract, but no other portions, of this paper may be copied or distributed royalty free without further permission by computer-based and other information-service systems. Permission to republish any other portion of the paper must be obtained from the Editor. 0018-8670/05/\$5.00 © 2005 IBM

value from IT investments.^{9,10} Yet, whereas the concept of alignment is a powerful one, achieving alignment has proved to be a significant managerial challenge.^{11,12} IT organizations struggle through almost perpetual cycles of restructuring and restrategizing as they attempt to establish the right balance in response to a complex set of contingencies.¹³ Today, the key is to be “agile.”¹⁴

Dropping down to the IT project level, we see a similar situation. User participation and involvement in project development is widely acknowledged to be critical to project success. Yet, effectively managing such involvement in a way that leads to successful implementation has proven to be challenging.¹⁵ Similarly, measuring user satisfaction is thought to be a key tool in managing IT operations. However, translating these measurements into more effective systems and organizations has been far from easy.^{16,17}

Many believe the difficulty in managing these relationships is rooted in differences in knowledge, culture, motivation, and language that exist between IT and the business.^{18,19} To some extent these barriers lead to goal abstraction whereby common words, such as strategic alignment, have different meanings due to a lack of shared understanding.

One way to ameliorate this problem is to provide IT managers with a frame of reference that helps them analyze IT issues from a business perspective, that is, the perspective of their customers. To be sure, IT managers *do* currently attempt to understand the business perspective, but we believe that it remains an enduring challenge and suggest that the literature has been relatively naïve in providing prescriptive advice on how to bridge the gap. We further believe that focusing on IT managers alone is not the solution, for the relationship is two-sided and includes both the leaders of the business units and IT managers.²⁰ Hence, the frame that we provide is intended for both business and IT managers, to allow for a dialog on how both sides can approach the relationship. The audience of this paper is thus not limited to IT and should include business executives as they seek opportunities to further enhance the relationship between IT and the business units.

We believe that a marketing frame is a powerful and simple way to provide such a perspective. This

provides the motivation for our paper—to explore how the relationship between IT and the business can be strengthened through the application of a marketing lens to the management of the IT organization. We suggest that the marketing perspective will help IT management to look at the challenges they face from the perspective of their customers and will help business unit management to look at opportunities to enhance their already existing relationships. By adopting such a *customer-centric* perspective—where the customer is the focus of attention—the contribution of IT to the business and the realization of IT business value should be enhanced.

The remainder of the paper is organized as follows. After first explaining the need for a marketing perspective, we argue that this new lens can be used by IT managers to guide the development of a customer-centric IT management strategy. We culminate our discussion of the prior approaches to customer-centric IT management with our marketing maturity model, followed by a discussion of each of the elements of this model. To illustrate the strength of this approach, we analyze the past 40 years of IT at Texaco Corporation, demonstrating that the marketing approach can be useful in explaining problems with the perceptions of the IT function. We conclude with some recommendations for practitioners.

THE NEED FOR A MARKETING PERSPECTIVE

How can the IT-business relationship be strengthened? We posit that marketing, and taking a marketing perspective on IT in particular, can help IT managers better understand their customers within the business and can guide the development of a customer-centric IT management strategy. By a marketing perspective, we mean that *the IT function views its structures, processes, and relationships as if it were delivering a product and thus adjusts the price, the promotion, and the place to meet the unique needs of the customer*. Evidence from the internal marketing literature suggests that success with internal marketing efforts translates into greater success with customers.²¹ This is the ultimate goal of any IT investment.

To understand the need for a marketing perspective on IT, we must first highlight the limitations of current management approaches. Within the practitioner literature, three main prescriptive tools exist

Table 1 Current management approaches to facilitating a relationship between IT and business

	Portfolio Management	Balanced Scorecard	Structural/ Organizational
Approach	IT and the business units discuss each project and rank them in order of importance	IT and the business units discuss what is meant by “success”	IT enacts governance changes to place IT closer to the business units
Pro	• Provides a tool to discuss how IT invests time and money • Facilitates dialog between IT and the business	• Provides a tool to discuss what defines success • Facilitates dialog between IT and the business	• Provides a prescription for facilitating a better relationship • Provides opportunities for dialog
Con	Useful for what should be discussed but not for fostering a better relationship	May lead to increased success but does not tell how to foster a better relationship	While the structural solution helps, it does not provide a broad view of how to foster a better relationship

to guide CIOs to increase success—portfolio management, the balanced scorecard, and structural/organizational approaches. We argue that these approaches, although useful in their own right, are deficient in guiding how to achieve a successful IT-business relationship.

According to the *portfolio management* approach,^{22–25} IT assesses four areas for each project: the economic value of the project, the strategic value of the project, the project risk, and the project reward. All projects are examined on each of these dimensions, and they are then ranked in order of importance. This examination is based on a dialog between the business and IT executives. The rationale behind the portfolio management approach is to provide a common basis by which IT and the business can discuss and prioritize the work of IT. However, whereas the portfolio management technique does provide a basis for the discussion to take place, the focus is not on how IT can manage the relationship, but rather what to talk about.

The second management approach is the *balanced scorecard*, which has attracted much academic attention.^{26,27} The balanced scorecard directs IT to define the key metrics (typically areas related to finance, customers, internal processes, and learning and growth) that define “success.” Each of these dimensions is measured, and IT makes adjustments to the appropriate business processes. In other

words, the process of developing the balanced scorecard allows IT and the business to jointly determine what dictates success, which, in turn, should increase the likelihood of the perception of success. While the balanced scorecard allows IT and the business units to jointly determine what success looks like, we believe this is only part of what IT needs to do.

The third management approach is *structural/organizational*, which consists of a series of recommendations on how to create a better working relationship. These suggestions range from ensuring the CIO has a place on the board to the creation of account executive positions within the business units. Whereas these structural changes provide the impetus for achieving a successful relationship, once these governance arrangements are in place, little advice is offered about how to leverage the structures to actually achieve a better relationship (apart from “relationship management” skills).

We have summarized these three approaches in *Table 1*.

With the limitations of the three major management approaches in mind, we contend that a marketing perspective focuses attention on “determining the needs and wants of the target customers and then delivering satisfaction more effectively and efficiently than competitors.” This has a number of

effects on an IT organization. First, such a perspective can help understand and manage customer expectations, ensuring these expectations are realistic with regard to what IT can truly deliver at a certain cost.²⁸ Second, it can change the focus of the IT organization from delivering finished products to providing ongoing services. This involves the transfer of the IT function to a service organization with a customer focus.²⁹ Third, it forces IT to embrace the concept of becoming, through competition with the external market, the preferred supplier of service to the business units. In order for IT to become the preferred provider, it must afford high quality service.³⁰ Fourth, given the wealth of shared service organizations (e.g., human resources, marketing, etc.), the internal IT function will be one of many options open to the business units; as IT struggles with the proliferation of outsourcing options, IT is constantly being benchmarked by the business units.³¹ And fifth, with IT services increasingly facing the “real” customer of the organization, the need for a positive experience on the part of the customer becomes critical.^{32,33} In many cases, IT has become responsible for the way in which customers interact with the organization, that is, through Web pages and electronic data interchange. Taken together, these motivations suggest that there is considerable value in thinking about IT from a marketing perspective. To do this effectively it is important to understand that customers have a variety of IT needs and that these needs will drive the IT-business relationship.

To understand how a marketing perspective may be used by IT managers, we drew on our combined experience of studying IT managers and, more generally, the IT function. In particular, our interpretation is based on formal and informal interviews of hundreds of IT managers on three continents over a 20-year period. These culminated in a variety of publications,^{10,34–45} and we further suggest that our interpretation is consistent with other researchers who have studied IT management practices.^{14,46–52}

In order to establish how a marketing perspective (lens) can help the relationship between IT and the business units, we defined the marketing lens as the IT function viewing its structures, processes, and relationships as if it was delivering a product and then adjusting the price, promotion, and place to meet the unique needs of the customer. The basic elements of the marketing lens—price, promotion,

place, and customer—are derived from the classic “marketing mix” concept in marketing.

Beyond this marketing mix, it is our thesis that IT organizations evolve through three stages of maturity, which we refer to as “competency,” “credibility,” and “commitment” and which we discuss later. Within each of these stages are different views of product, price, promotion, place, and customers, as well as alternative views of what constitutes “success.” At each stage the IT function employs unique strategies, and these strategies impact the elements of the marketing mix and the view of success. In *Figure 1*, we depict the maturity process and the relationship between the stages, involving their attributes and strategies used, in the form of a *marketing maturity model*. In the figure, we present the three stages of marketing maturity—competency, credibility, and commitment. Within each of the stages are differential aspects of the marketing maturity mix and different definitions of success. Finally, by adhering to a strategy that we discuss later, the IT firm progresses through the stages of the maturity model.

The proposed marketing maturity model is descriptive in nature, reflecting how we believe the IT function evolves. We are not suggesting that the hierarchy is automatic, but that IT and business management must work together to achieve the level desired for the organization. To explain the model, we now turn to a deeper discussion of the three elements: (1) the marketing mix, (2) the definition of success, and (3) the evolutionary stages.

ESTABLISHING A MARKETING MIX

We suggest that a marketing strategy be created by IT management around the elements of the marketing mix.⁵³ Such a strategy must first involve the identification of IT customers, a task that is not as simple as it might seem. After the customers have been specifically identified and their needs understood, the marketing strategy consists of a combination of the classic 4 Ps:

- *Product* refers to the characteristics of the product or service and its relationship to the customer’s needs.
- *Price* refers to the pricing strategy for determining how much is charged for a particular product or service. Even if an internally provided IT service is

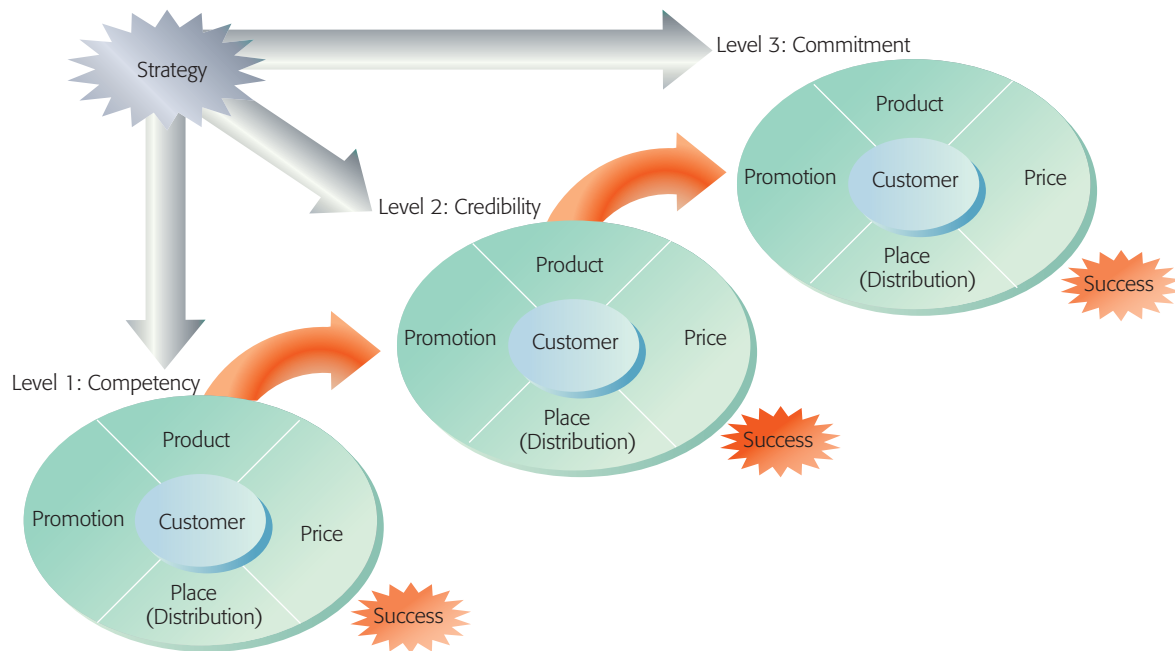


Figure 1
Marketing maturity model

not charged for, this still constitutes a pricing strategy. Pricing strategies should reflect the total cost to the consumer as well as the value received.

- *Distribution* (or place) addresses options and alternatives for how and where the service or product is delivered and the resulting convenience (or inconvenience) to the customer.
- *Promotion* includes personal selling, communication, public relations, and other strategies used to build customer commitment.

Adapting these elements to an IT context yields the following correspondences:

- *Product* corresponds to the IT services that represent the customer's informational and operational wants and needs.
- *Price* is the cost incurred by the customer in order to obtain IT products and services.
- *Distribution* represents convenience of access to information and IT services.
- *Promotion* corresponds to the means of communicating with the user community and the way IT services are sold.

The creation of a marketing strategy around these elements requires decisions to be made by IT management. In execution, managing these four

marketing issues requires trade-offs to be made between such factors as price and type of product (service) or price versus the distribution or access to information services. It is the job of the promotional effort to resolve these conflicts and convince the customer that the proper mix has been achieved. In a typical organization, it is common for promotion or communication strategies to be the only aspect of IT management that might be addressed through a marketing lens. Other factors are usually only considered, if at all, as matters of operations and control.

Who are the customers?

Customers of the IT organization come in all shapes and sizes, often holding different (and competing) values. A first important distinction is between customers who are external to the business and those internal customers for whom IT provides support and services. Internal customers have typically bought and paid for the system. External customers use the system to make purchases or otherwise do business with the organization. With the extension of systems beyond the bounds of the organization to directly touch external customers, a marketing-related perspective on IT management becomes even more valuable. We note however, that the commitment of internal customers has been

observed to be critical to the success of marketing efforts with external end customers.²¹ Hence, the remainder of our focus is on marketing to internal customers of the IT organization.

Based upon the consumption of IT services, we suggest that there are three classes of customers with whom IT interacts: transactional customers, relationship customers, and IT influencers. These customer classes differ in the services that they consume, in their needs and wants, and in their sales tactics. We now review each of these customer types.

Transactional customers typically purchase and consume individual services and have transactional interactions with IT. These are most closely related to retail customers in consumer marketing. A typical example would be the desktop user. Such customers typically focus on the value they derive from each individual service encounter and will likely be most focused on assessing IT competency. Thus, reliability and tangibility become the key drivers of value assessment. Although they may focus on price, this factor may be transparent in many organizations. In fact, one of the challenges for the IT organization is sensitizing this type of customer to the price associated with the services he or she uses. This is important both for the purpose of effective rationing of resources and for judging the relative value of the service received. Thus IT organizations that service these customers may want to think about how to communicate pricing information to them in a clear, concise, and understandable fashion—something that often has not been effectively done in the past.

Relationship customers use and pay for multiple services and typically have a longer term relationship with IT. Such customers are looking for more than support from the IT group and will be more focused on business value than the transactional customer. Whereas reliability in service delivery remains important, responsiveness will likely be a more critical attribute driving perceptions of overall quality. From a marketing-mix point of view, relationship customers are more likely to be value sensitive than purely price sensitive. Clearly defining business value for the relationship customer and appropriately matching charges to service delivery are important. The product focus of relationship customers must take into account both their need for ongoing operational support as well as the

delivery of new products and services with demonstrable business value.

Finally, the *IT influencer* is typically a business-side senior executive, external to the IT organization, who can help develop visions, marshal resources, influence decisions, and is critical for the success of any project. These individuals may have significant impact on decisions related to infrastructure investments as well as individual projects. An influencer may not only sway a decision to proceed with an IT initiative but also can be critical to the organization's perception of success. IT might be positively viewed by the vast majority of business users, but a single key IT influencer who is not satisfied can affect senior management's belief about IT value. Although marketing to the IT influencer requires competency and credibility, it is more about gaining commitment. Empathy with the IT organization becomes a key determinant of support. Assurance that IT can deliver will be core to the commitment of the influencer, who more often than not, may be expending political capital to advance (or inhibit) the cause of the organization.

Customer groups differ in their requirements, and consequently, the marketing approach that most directly affects their perceptions of IT service delivery varies. In making this segmentation, we are not suggesting that the grouping of customers be done on a functional unit basis, but rather, by clearly identifying the individual players within the unit, noting that an individual may play different roles in different situations. We highlight in **Table 2** the key wants and needs for each customer group.

To illustrate how such a concept applies in practice, consider a Fortune 100 oil and gas company that differentiates among the customers served by IT. The IT executive creates a corporate-wide IT accountability matrix and defines four levels of accountability for each of the customer types (person or group):

1. *Accountability*—Accountable for achieving the results but not necessarily in charge of doing the work.
2. *Responsibility*—Shares responsibility for obtaining the results and accountable for a portion of the results.
3. *Consultative*—Advises and provides input and validation (has to be consulted before decision making).

Table 2 Wants and needs of different IT customers

Dimensions	Transactional Customer	Relational Customer	Influencer
Consumption pattern	Uses and pays for individual services	Uses and pays for multiple services	Uses multiple services; pays for none directly
Nature of relationship	Transactional interaction	Long term interaction with multiple points of contact	Helps to develop visions, marshal resources, and influence decisions
Needs	Access to training	1. Convenient /no hassle implementations 2. Stated benefits realized 3. Help in determining current and future needs	Made to feel special
Wants	Clarity and understandability	Clear link with their expectations	Build a foundation for the future
How to sell to the customer	Be responsive to needs	Complete each project on time	Match the projects to their vision of the future
Expectations	Systems that are easy to use	Projects completed within budget	Creative solutions
How to make the customer happy	Good quality products and services	High quality products and services	Results that make them look good
What the customer values	System and service reliability	System and service reliability	Knowing how the system is going to work
What to sell to the customer	Panache/Image	Concrete value (ROI)	Confidence that IT can deliver
Maturity level focus	Competency	Credibility	Commitment

4. *Informatory*—Receives information on the results.

Every stakeholder in IT-related decisions is assigned one of the four levels of accountability. Thus, when decisions need to be made, every stakeholder is at least informed of the decision. This arrangement provides a tangible example of how to identify the customer and how to manage each type of customer. This is consistent with our marketing lens approach in which customers are categorized and serviced according to their differentiated needs and wants.

What is the product?

The IT product consists of *the services and solutions that reflect the customer's informational and opera-*

tional wants and needs. More recently a distinction has been made between IT infrastructure and applications, each of which requires different management approaches. Additionally, the advent of enterprise software has significantly blurred the line between application and infrastructure and has complicated the division of activities between internal and external providers of IT for organizations. These perspectives on product are technology-centric, putting technology at the core of IT thinking. The danger of such an approach is that the technology becomes an end in itself.

Taking this into account, we believe it is useful from a marketing perspective to divide IT products broadly into services and solutions. *Services* deal

Table 3 Characteristics of services compared with solutions

	Service	Solution
Tangibility	System complexity largely transparent to the user	System complexity built through consultation with user
Reliability	Continuous availability	Provided by offering direction
Responsiveness	100% responsiveness	Provided by leadership
Assurance	Established through service-level agreements	Established by the fulfillment of promises
Empathy	Delivered by credibility	Delivered by demonstrating the strategic business value

with infrastructure, support, and ongoing maintenance activities. From a service perspective, the customer regards IT as a utility that should be continually available and 100 percent reliable. Services should be delivered in such a way as to make system complexity largely transparent to the user. Thus, the emphasis in service offerings is in establishing and maintaining credibility. *Solutions*, on the other hand, are concerned with the development of new IT applications that are acquired or built with the intention of providing strategic business opportunities. To effectively deliver solutions, IT must provide leadership and direction, helping to demonstrate the strategic value of the project. Here the IT organization is trying to fulfill promises tied to credibility and commitment.

Nonetheless, the marketing of the IT product is different from the marketing of other products. Whereas services tend to be easier to evaluate and price (and hence benchmark), solutions tend to be largely intangible and are difficult to evaluate and price, often prompting the seller to sell promises. Services and solutions are perishable; they cannot be inventoried; yet there needs to be enough to meet peak demand (whenever it may arise), and unused capacity is gone forever. Services tend to be more easily outsourced, whereas solutions are less amenable to outsourcing.

Service and solution providers are often critical to the success of a business function, and hence there is a need for strong cooperation between provider and customer. This collaboration entails a high degree of ongoing customer contact, which requires an ability to communicate effectively. Trust has to be built up over time and often only emerges after a series of successful joint endeavors. A successful IT

organization provides a high quality product with the following characteristics:

1. *Tangibility*—A strong physical appearance of the service provider in the service environment
2. *Reliability*—Consistency and dependability of service delivery
3. *Responsiveness*—Willingness and readiness to render services even in exceptional and unplanned situations
4. *Assurance*—Ability to convey trust and confidence that the service will be provided when and where needed
5. *Empathy*—The desire and capability to offer caring and individual attention, as well as the associated image of a caring provider of services⁵⁴

From a marketing-mix perspective, the product that the IT function is “selling” can be categorized as either a service or a solution. The IT function must first determine what is being sold and then align the product with the appropriate product type. *Table 3* summarizes the characteristics of the two product types.

To achieve these five results, a marketing strategy must be created that

- involves customer research and includes listening to IT employees and thus leads to an understanding of the needs of the customer,
- specifies service expectations through codified performance levels and commits management to achieve these expectations,
- educates the IT employees about the “soft skills” of customer relationship management and customer types, and

- manages expectations through effective customer relationships and employee communication networks.

We believe the service and solutions perspective, in contrast to the more common infrastructure-application dichotomy, is important because it helps to maintain an emphasis on process and outcome rather than technology. This is important to building a customer-centric IT organization that is focused on the delivery of business value rather than just the delivery of sound technology. This is not to say that the former does not require the latter, but rather that it is important to ensure that the technology does not become an end in itself. By looking at the product from a marketing perspective, this common trap in IT management may be avoided.

What is the price?

Pricing of IT products to the customer is a sensitive issue with no single best approach. Price can be a particularly important determinant when deciding to try a new product or acquire a product through a new channel. Thus, price is likely to be an important driver of adoption of new IT within organizations. In reviewing the various approaches to pricing, we see three broad types of pricing models.

Pricing approach #1: Cost-based models

Such models are nominally designed to make users responsible for their consumption of IT resources although their actual effects are often more complicated.⁵⁵ A variety of approaches can be used.

Whereas some IT organizations allocate their entire budgeted costs to user departments, others separate out infrastructure costs from project and other direct costs. The direct costs are charged to users with a percentage loaded on for infrastructure costs. When direct costs are charged separately, issues arise as to billable time utilization, labor rates, and managing personnel versus contractor staffing levels. If the goal is to influence consumer behavior and make individuals in an organization more accountable for the consumption of IT resources, it makes sense from a business point of view to charge back the costs consumers are in a position to manage and control. In other words, it does not make sense to charge back for services that the business unit has little or no ability to manage or to impact the price. (For more information on charge-back effectiveness, see References 55 and 56).

The challenge of the charge-back perspective is its focus on cost allocation rather than pricing. Most charge-back schemes distribute or allocate costs incurred by the IT organization based on usage or some other consumption metric. The charges do not reflect value received and, like the IT product focus, tend to place the emphasis on the cost of the technology. Problems result to the extent that these costs are largely fixed and outside the control of the customer being charged. We have found that charges for infrastructure costs that cannot be managed or controlled by the customer raise questions regarding the provider's credibility and competence. To overcome some of the problems associated with cost-based models we turn to pricing approach #2.

Pricing approach #2: Price-based models

By switching the mind-set from cost to price, the value proposition and view of the customer should come into better perspective. For a pricing system to positively influence behavior, it must be clear, understandable, and within the control of the customer. Further, it must include incentives designed to encourage behaviors that benefit the organization as a whole.

Considering the product as solutions, the value of a solution must be determined by the business unit adopting that solution. The business unit must be responsible for weighing the benefits against the costs regardless of where those costs are charged. The influencer (champion) can be vital to the success of this effort. The value of the solution is the difference between the cost of a project and the cost of doing nothing, because opportunity costs clearly need to be factored into the value equation. An IT executive of an oil and gas company we spoke with commented, "You can either have this system developed for a cost of \$10 million, or you can take the money and drill another oil well. It's your choice." But it was the business unit rather than IT that made the choice. Additionally, it is important to recognize that encouraging R&D and innovation may require that the R&D component of the cost not be charged to customers. Thus, the nature of the organization and the degree to which it supports innovation in IT must be factored into the pricing strategy.

Pricing approach #3: Pricing with incentives and outcome metrics

An emerging trend in the pricing of IT is to look to market mechanisms to assist in the pricing of IT. For

instance, outsourcing arrangements and enterprise software package implementation are both ways of obtaining an external market price for IT services

■ By adopting a marketing perspective, IT management can enhance the business value of IT. ■

and solutions. Such market tests can be particularly valuable to organizations in assessing their actual return on IT. The challenge of this approach is to reconcile price comparisons for complex product and service offerings. Internal analysis with detailed information on operations provides an organization a keen advantage in costing its IT service. Of course, pricing is provided by a vendor who may have a goal of obscuring prices and making direct comparison difficult. Thus, whereas market tests are useful and important in comparing IT services, it is critical to ensure that the comparison is equitable. One of the most sensible ways to approach this is to define performance in terms of outcome measures, making sure the measures are both meaningful and intelligible to the customers. The challenge of creating pricing in a meaningful way is exemplified in the following comment by an IT manager:

That's been a big hurdle because if we try to charge the business units for that then they say ... I don't need this to run my business. ... Then it becomes a non-valuating argument debate. So we say if we are going to mandate something to you we will pay for it ... About 30 percent, for example, of our wide area network costs around the globe are paid for corporately, so that we can push things out. We can do things that we need to do corporately, and we don't get into a hassle with the business units about well that's not in my profit objective and all of that.

The issue of pricing again demonstrates that IT and the business unit must engage in a dialog to ensure that there is a relationship between IT deliverables and expenses incurred.

How are products distributed?

How to organize the IT function to optimally deliver services to the organization has been one of the most enduring debates in the IT management

literature. From our experience, we have found that IT departments distribute their products in one of three methods: static, integrated, and dynamic. These correspond to using a static distribution that is not integrated across the enterprise, using an integrated delivery that is slow to adapt in the face of alternative arrangements, and using a dynamic delivery system that is able to adapt to changing business conditions by using alliance and partnership arrangements.

Distribution approach #1: Static delivery

In this approach, IT uses a centralized distribution of products. Although the product is distributed from a central point, the distribution is not customized to the individual business units. The benefits of this approach are economies of scale, improved standardization, and better integration. They come at the cost of a lack of business ownership and control that leads to unresponsiveness to local needs. These limitations typically cause IT organizations to opt for distribution approach #2.

Distribution approach #2: Integrated delivery

In this approach, IT uses a decentralized distribution of products. Although the intent is to offer control to individual business units, the perceived benefits of a decentralized structure are often offset by the narrower designs for IT solutions that may not integrate well across the enterprise. IT organizations using this approach tend to be slow to adapt in the face of changing conditions, a limitation overcome by approach #3.

Distribution approach #3: Dynamic delivery system

In this approach, by using a variety of means to distribute its services, including alliance and partnership arrangements, IT can adapt to changing business conditions. Intranets, for example, enable distribution of IT services and are proving to be a most important technology for businesses. A number of emerging technologies are also changing the nature of support. For example, help desks and technical expertise can now be made available economically on a global basis without labor-intensive duplication of services. Application service providers offer organizations additional choices for the distribution of IT services, which have the potential to change the economics of IT delivery.

New alliances and partnership arrangements are also emerging as means for the distribution of IT

services. One approach that we have seen is for organizations to partner with vendors (Electronic Data Systems Corporation terms this “co-sourcing”) so that instead of staffing all skills in all locations, the IT group can use outsourced skills to supplement local expertise where and when needed.

A marketing view of distribution suggests that economic drivers guide distribution structures and that organizational structures which facilitate unique forms of distribution can provide a basis for competitive advantage to organizations. What’s more, technologies such as the Internet can dramatically transform distribution approaches and can change the economics of product delivery. Further, new distribution channels are often found to “shake up” marketing models and strategies. The challenge for IT organizations is to learn how to harness IT to deliver high levels of service in much the same way that organizations such as Dell Inc. have learned to deliver direct support to customers.

How should IT be promoted?

Although IT organizations seem to recognize the importance of promotion in marketing their products and services, they are perhaps not quite successful at it in terms of actual delivery. Promotion focuses on all forms of communication other than advertising that call attention to marketed products and services. We have found that IT organizations approach promotions through one of three methods.

Promotion approach #1: Narrow focus, non-targeted means

In this approach, the message from IT is on service, support, and infrastructure. Messages are not customized to user groups or a specific customer, but are broadly distributed to all users.

Promotion approach #2: User targeting

Approach #2 is to consider the messages to be communicated, the customers to be targeted, and the best channels by which to deliver the messages. Given the existence of different customer types, it is reasonable to differentiate among the messages needed to reach those customers. The marketing perspective on promotion keeps us attuned to different types of customers and enables us to tailor our messages to them. Transactional and relationship customers, for example, are likely to be interested in different aspects of IT; relational

customers are focused on return on investment (ROI), whereas transactional customers look for low and clearly defined costs. Our services and solutions

■ IT organizations evolve over time through three levels of ascending marketing maturity: competency, credibility, and commitment. ■

dichotomy suggests that there are multiple messages which need to be conveyed. At the very least it is important to consider one set of messages that focuses on transactions around service, support, and infrastructure and another set that emphasizes solutions and may have a stronger business value component.

Promotion approach #3: Governance structures to identify influencers

Good IT managers understand that promoting IT and its services should be done through multiple channels, starting at the top through a relationship with the CIO/CEO (chief information officer/chief executive officer). Steering committees are also a good forum for obtaining supporters and cementing the necessary relationships. For example, one company we visited uses a “guidance review team” made up of project team leaders and influencers, an approach that can also serve as a way to get IT’s message out to the rest of the organization. These individuals could also be regarded as high-level customer service representatives in that they are in the front line, acting as the interface between the IT department and the business unit. Effective use of the guidance review team includes using it as an ongoing “sounding board” or “listening post” to develop new directions and to better understand IT’s relationship with the rest of the organization.

Building on this concept, establishing customer relationship managers (CRM) who manage the individual business-unit account and act as the intermediary between IT and the business unit has become more popular. The CRM ensures that the business unit is satisfied with its IT service, rectifying any problems that arise, and helping plan the slate of solutions and services needed in the future.

In our experiences, the role of the CRM has changed over the years. Nonetheless, the enduring nature of the position suggests that there is merit for its inclusion within a corporate IT governance arrangement. An IT executive at a Fortune 500 company verified in a conversation with us that coordinators acting as account executives for IT can help identify potential IT opportunities for the business units, highlighting how the CRM (or account executive) role can aid in the interface between the IT function and the business units.

Success

With all of the elements in place, the final step is to ascertain if the approach is “successful.” Whereas IT research has attempted to focus on measuring the economic benefits of IT,^{57–60} “many organizations have progressed from elementary cost-benefit analysis, akin to bookkeeping, toward a more entrepreneurial approach, which seeks to deliver firm benefits while considering intangible aspects and elements of risk and uncertainty.”⁶¹ The progression means that IT organizations are now utilizing a multifaceted success metric that is not limited to just financial benefits of IT, but also measures how IT is perceived. An example of a multidimensional approach is the previously mentioned balanced scorecard, which has attracted considerable attention.^{26,27}

We suggest that assuming a marketing perspective is focusing on relationships between the IT organization and its customers. In taking this position, the promotion of the IT organization is akin to developing a brand. Thus, the same metrics that are used to gauge the success of a corporate brand are also crucial to the IT function. In addition to the commonly studied metrics of satisfaction, an IT organization adopting a marketing perspective can also employ metrics such as brand loyalty (the degree to which customers are loyal to the internal IT brand versus looking externally for a solution) and brand imagery (the words and phrases that the internal customers use to describe the IT organization versus other vendors).

One question that the IT organization should ask itself is—what is the perception of doing work internally versus sending it out to an external provider? If the IT organization places barriers in the way of the internal customers to benchmark or find

external solutions, then there is an implicit argument for a lack of success.

Adopting a marketing perspective means viewing the internal IT organization as a brand that is competing in the marketplace. The IT function thus must be competitive and benchmark against competitors (e.g., outsourcing vendors) and others, outside of their direct competition (e.g., other IT groups in the same industry).

A “show and tell” element comes with benchmarking, approaching a multifaceted balanced scorecard, competing against others external to the organization, and viewing the IT organization as being successful when it has an influence upon the organization through its relationships with the business units. Beyond metrics, we have found that IT organizations which assume this position find unintended consequences. For example an executive from a major oil company, discussing his view of success, related that collaboration and agreement on benchmarking and metrics yielded a mechanism that served as a basis for productive discussions of issues instead of finger-pointing.

We have seen that IT organizations that are currently using the balanced scorecard can easily expand current metrics to include measures of brand loyalty and imagery. For example, qualitative descriptions of words and phrases associated with the IT function can be used to determine if IT is viewed as reliable and trustworthy or unreliable and unresponsive. This information can lead IT to assess an appropriate response with an IT promotion strategy.

One example of a successful promotion strategy that we have seen was the creation of wall-size charts that summarize the balanced scorecard assessments from each particular quarter. The IT function created these boards and displayed them at several points throughout the company, highlighting the successes and failures of IT in the areas of finance, employees, customers, and external benchmarks. By doing this, IT was seeking to influence the perceptions of others in the organization and brand the IT function as responsive, fiscally responsible, with satisfied employees and customers, and doing better than competitors.

ASSESSING IT MARKETING MATURITY

Based on our experiences with numerous IT organizations, we believe that IT departments

evolve over time through three levels of marketing maturity—from competency to credibility to commitment. The hierarchy involves three levels of customer perception, each succeeding level requiring the successful fulfilling of the previous level (see *Figure 2*).

The lowest level of maturity, level 1, involves establishing *competency* in providing basic systems and services. In order for people to feel that the IT organization is competent, it must have a proven track record in the delivery of IT services, with 24/7 dependability.

After achieving competency IT can move on to the second level, establishing *credibility*. This refers to the ability of the IT organization to deliver the right systems to the right people, on time and within budget, in such a way as to satisfy a specific business need. Such systems would have to successfully meet business objectives as perceived by the customer. In fulfilling this function IT is viewed as a consultant that can help achieve business goals and objectives.

The highest level, level 3, relates to *commitment*. At this level IT serves as a strategic partner in the business, capable of solving strategic business problems. IT becomes a true business partner and is recognized as such by the executive management of the firm.

The value of the maturity model is that it allows IT managers to focus on the management objectives and tactics that are associated with each level of need. As maturity is assessed, IT management can create effective governance structures to encourage commitment to relationships. However, beyond structures, our research has found that the IT organization at each stage has different elements of the marketing mix, metrics of success, and strategies that are important for an IT executive to understand. We define governance as “IT-related structures or architectures (and associated authority patterns) implemented to successfully accomplish activities in response to an enterprise’s environmental and strategic imperatives.”^{44,62}

In *Table 4*, we relate IT maturity with the elements of the marketing mix to create a marketing maturity model for the IT organization. In creating this maturity model, we suggest that IT organizations exist in one level, during which time they exhibit all of the characteristics for the given stage. As the IT

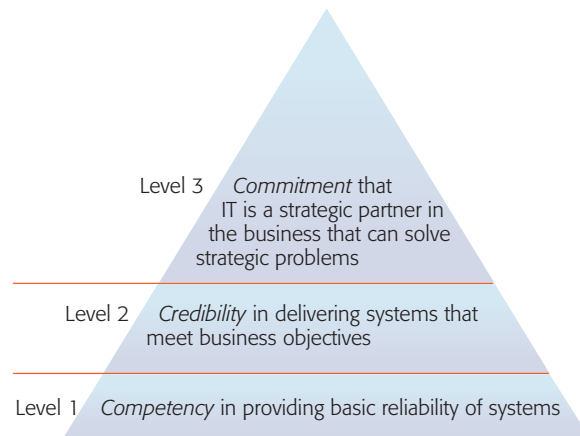


Figure 2
Maturity levels of IT function

function matures, it enters a transition point between levels, during which time the organization exhibits characteristics of both levels. Nonetheless, an IT organization seeking to use the marketing maturity model should attempt to understand its mind-set in each of the areas. Although we have found that no IT organization has all of the characteristics of a particular level, most organizations can characterize themselves using an archetype of the characteristics described. Thus, the maturity model is helpful in diagnosing where the IT organization currently exists and where it could move in the future.

As we have described, our motivation in proposing the IT marketing maturity model is to provide a way to ameliorate the problem by providing IT managers with a frame of reference that helps them analyze IT issues from a business perspective. In this case, we are relying on a marketing frame as a way of exploring how the relationship between IT and the business can be strengthened through the application of a marketing lens to the management of the IT organization.

To better understand how the marketing maturity model can be used in practice, we offer a brief, summarized history of Texaco’s corporate IT function (this occurred before the announcement of the merging of Texaco and Chevron). Today, Texaco’s and Chevron’s IT units have been merged into one to support the combined company called Chevron-Texaco; for a full version of the history, see Reference 43 and Reference 45. This history was completed by interviewing approximately 50 current

Table 4 The IT marketing maturity model in practice

		Level 1: Competency	Level 2: Credibility	Level 3: Commitment
Elements of the Marketing Mix	View of customers	View all as transactional	Segment transactional and relational customers	Appreciate the differences among customer types
	Product focus	Tangibility and reliability	Need for responsiveness and focus on assured delivery of services	Empathy in dealing with emerging business needs
	Price mind-set	Cost	Price	Price with incentives and outcome metrics
	Distribution of product	Static distribution that is not integrated across the enterprise	Integrated delivery, but slow to adapt in the face of alternative arrangements	Dynamic delivery system that is able to adapt to changing business conditions by using alliance and partnership arrangements
	Promotion	Focus on service, support, and infrastructure through broad, non-targeted means	Increasing the absorptive capacity of the firm by targeting specific segments of the user population	Creating governance structures that allow the firm to locate specific influencers in the organization
Success	Metric	Cost/Benefit	Multifaceted, including the impact of the IT function on the organization and end user satisfaction	Multifaceted, including perceptions of IT, brand imagery, and relationships
Strategy	Objective	Establish competence	Build credibility	Develop partnerships
	Philosophical approach	Discipline and control	Play well with others	Enhance business value
	Role of IT	Service provider	Consultant	Business partner
	Pitfall to achieving results	Over-promising	Trying to drive business	Automating rather than rethinking
	Suggested time frame	Less than 1 year	1–2 years	2–5 years

and past IT and business executives within Texaco over an 11-year period, which allows us to provide a broad history of the key events during the past 40 years. In our story of Texaco, we focus on how the CIO's role, IT function, and top management perceptions of IT evolved over four decades. It is an interesting and insightful story.

In *Figure 3* the history of Texaco's IT function is summarized. On the lefthand side are the key events

with the dates indicating the time of the occurrence. On the righthand side is our interpretation of the events, using the lens of the IT marketing maturity model.

In analyzing the history of the IT function at Texaco, we found that Texaco was a level-1 IT organization from 1955 to 1978. The focus during these years was on explaining technologies, thus there was a focus on service, support, and infrastructure through

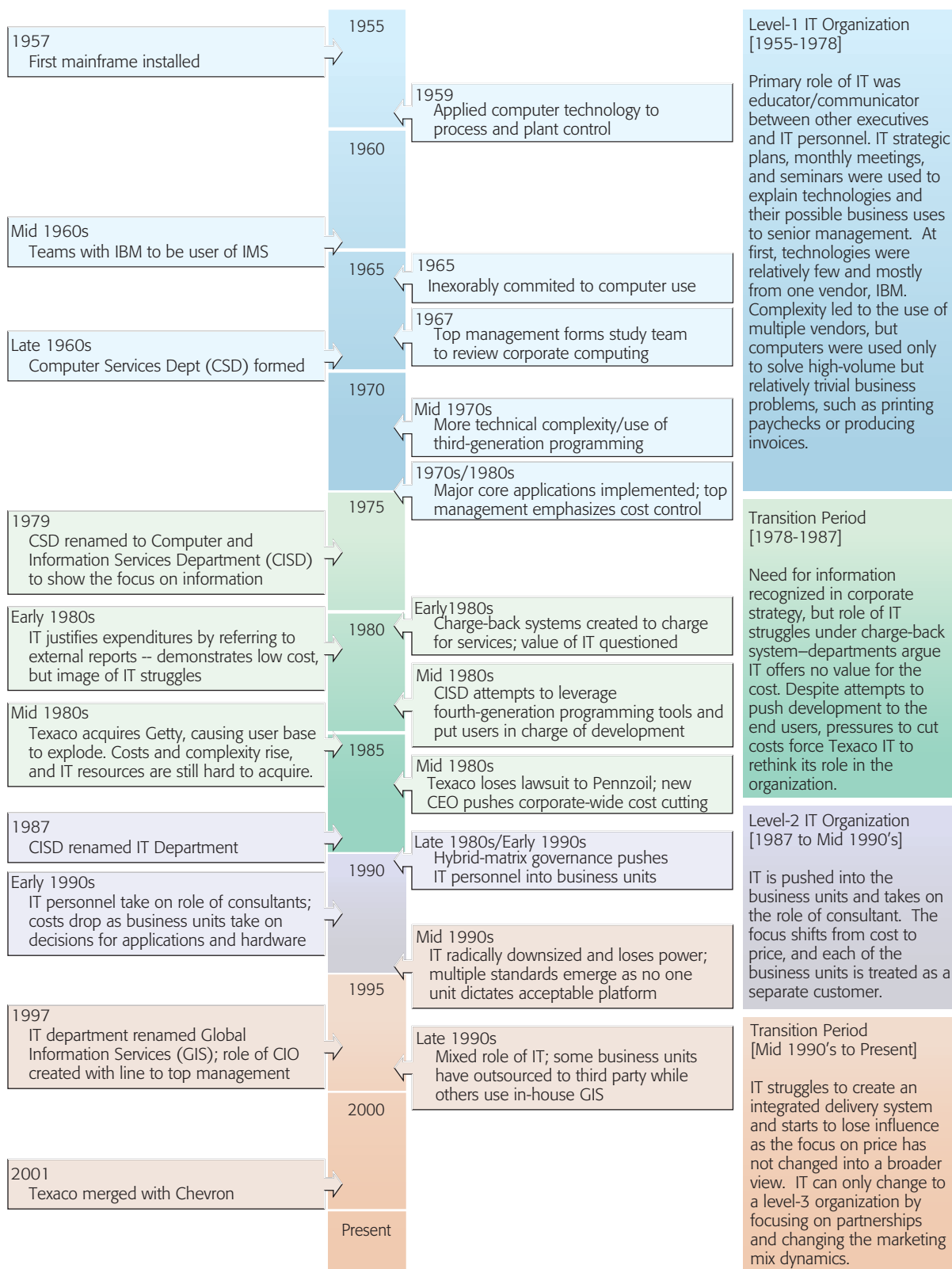


Figure 3
Texaco's IT history

broad, nontargeted means (promotion). The IT function did not segment its customers (all viewed as transactional customers), and the focus was on simple and standardized business problems—thus there was a need for reliable and tangible products. During these years, the IT department attempted to demonstrate competence by holding monthly meetings and seminars to explain available technologies and their business uses to senior management. Its strategic objective was to become a service provider, which would lead to opportunities for better integration with the business.

As corporate Texaco made a strategic decision to focus more on satisfying the need for information, the IT function entered a transition period, which lasted from 1978 to 1987. During this time, the IT department struggled with the level-1 focus on cost, as the business units thought that there was insufficient value for the IT charges incurred. Yet, at the end of the transition, the IT executives made a decision that allowed IT to move from level 1 to level 2, namely, to shift the focus from computing to information (as demonstrated in renaming the organization Computer and Information Services Department instead of Computer Services Department) and to place IT personnel within the business units. The result was a change from the role of IT as a service provider to that of a consultant.

As a level-2 IT organization, which lasted from 1987 to the mid 1990s, IT changed its focus from cost to price. By being close to the business units, IT could segment its customers and focus on specific business units and the absorptive capacity of the firm. Although IT managed to gradually build credibility, it struggled to create an integrated delivery system.

When Texaco merged with Chevron, the IT organization again went through a period of transition. Although some facets of the IT organization functioned at level 3, such as the enhancement of business value through the use of IT and empathy in dealing with emerging business needs, IT had not fully developed the partnerships and alliances necessary to be a true business partner. In time, the IT department may have completed the evolution to level 3, but the merger precluded this from happening.

The Texaco case provides an opportunity for us to reflect upon the struggles that the firm faced when

seeking to evolve through the various stages. We believe the Texaco IT function achieved all the traditional metrics of success: according to external benchmarks, the IT function was among the best in the industry; the CIO occupied a position on the board; and the IT function had a broad, balanced scorecard understanding of success. However, what inhibited the ability of the Texaco IT function to achieve level-3 status was the failure to manage its internal relationships with top executives and to develop the necessary partnerships.

We suggest the Texaco IT function is not alone in this predicament. With the many challenges facing IT today (e.g., outsourcing, the need for agility, IT-business alignment), we speculate that many firms have focused on developing competency and credibility, but still struggle with commitment and the associated forging of the necessary partnerships. While technologically we have seen the emergence of service-oriented architecture (thus allowing for the delivery of technology that is business-unit-specific and flexible), we have not seen a corresponding shift in governance. An example of an organization that has perhaps achieved level 3 can be found in the Gamma Corporation case. In Reference 44 we profiled six firms as they sought to structure their governance. Gamma, a large oil and gas company, had placed an IT manager within each business unit and also created a corporate CIO Forum to make global decisions. Where Gamma succeeded and Texaco struggled was in the positive perception of IT within all of the business units. We suggest there are three differences between Gamma and Texaco: (1) Gamma created a broad balanced scorecard, which was produced quarterly, that covered the entire enterprise; (2) because the Gamma CIO committed to spending at least 50 percent of his time in the business units, IT was able to create partnerships and manage expectations; and (3) Gamma balanced global coordination and localized control by utilizing a governance structure that allowed both local flexibility and standards across the enterprise. Thus, we believe it is possible, albeit not easy, to achieve the level-3 organization discussed above.

CONCLUDING THOUGHTS

As we reflect upon the IT function of the future, we believe that a lack of relationship management skills is one of the key inhibitors to maturity and success. IT will need to learn how to manage the network of

relationships within which it operates in order to achieve success. From internal customers to top management to providers of technology (whether domestic or offshore), in our view the successful IT function that is mature will learn how to successfully manage the multidimensional and multifaceted relationships in which IT is engaged. We suggest that the IT marketing maturity model is a tool that can be used by IT management to achieve this objective.

We believe that tomorrow's IT organization requires skills and attitudes that traditionally were not essential to IT people. In the past, customers were more limited both in number and area of the business, while today, customers are everywhere—both internally and externally. IT operates in an environment in which every perturbation in service becomes the subject of “water-cooler” gossip. It is not easy being in IT, but we hope that our IT marketing maturity model will help promote successful IT organizations.

In this paper we have described a process of maturity through which IT organizations can progress. We have suggested a series of recommendations for those organizations that desire to mature, with a focus on the areas of the maturity model. By presenting our case study, we have shown how our approach can be useful in enhancing the perceptions of IT and in attempting to close the chasm between IT and our colleagues in the business units.

ACKNOWLEDGMENTS

We would like to thank Dave Taylor for his assistance in the write-up of a roundtable discussion we had with senior IT managers held at the University of Houston while pulling together our initial thoughts on this subject. We would also like to thank Jaana Porra for her thoughtful comments.

CITED REFERENCES AND NOTE

1. In this paper, when we use the term IT or IT function we are specifically referring to the corporate IT function.
2. M. L. Markus, “Thinking the Unthinkable: What Happens If the IS Field As We Know It Goes Away?” in *Rethinking MIS*. W. Currie and R. Galliers, Editors, Oxford University Press, Oxford (1999), pp. 175–203.
3. H. Enns and S. Huff, “Chief Information Officer Influence: An Exploratory Study,” in *ECIS2000: A Cyberspace Odyssey; Proceedings of the Eighth European Conference on Information Systems*, R. Hansen, M. Bichler, and H. Mahrer, Editors, Vienna, Austria, July 3–5, 2000, pp. 660–666.
4. R. F. Maruca, “Are CIOs Obsolete?” *Harvard Business Review* (March–April), 55–63 (2000).
5. N. Carr, “IT Doesn't Matter,” *Harvard Business Review* (May 2003), pp. 41–49.
6. L. Willcocks and M. Lacity, Editors, *Strategic Sourcing of Information Systems*, John Wiley & Sons, Chichester (1998).
7. S. Morstead and G. Blount, *Offshore Ready*, ISANI Press, Houston, TX (2003).
8. M. Robinson and R. Kalakota, *Offshore Outsourcing: Business Models, ROI and Best Practices*, Mivar Press, Alpharetta, GA (2004).
9. C. V. Brown and S. L. Magill, “Alignment of the IS Functions with the Enterprise,” *MIS Quarterly*, Volume 18, No. 4, 371–403 (1994).
10. R. Sabherwal and Y. Chan, “Alignment Between Business and IS Strategies: A Study of Prospectors, Analyzers, and Defenders,” *Information Systems Research* 12, No. 1, 11–33 (March 2001).
11. B. H. Reich and I. Benbasat, “Factors That Influence the Social Dimension of Alignment between Business and Information Technology Objectives,” *MIS Quarterly* 24, No. 1, 81–111 (March 2000).
12. Y. Chan, “Why Haven't We Mastered Alignment? The Importance of the Informal Organization Structure,” *MIS Quarterly Executive* 1, No. 2, 97–112 (June 2002).
13. V. Sambamurthy and R. Zmud, “Factors Influencing Information Technology Management Architectures in Organizations: A Theory of Multiple Contingencies,” *MIS Quarterly* 23, No. 2, 261–290 (June 1999).
14. V. Sambamurthy, A. Bharadwaj, and V. Grover, “Shaping Agility through Digital Options: Reconceptualizing the Role of IT in Contemporary Firms,” *MIS Quarterly* 27, No. 2, 237–263 (June 2003).
15. C. Beath and W. Orlikowski, “The Contradictory Structure of Systems Development Methodologies: Deconstructing the Is–User Relationship in Information Engineering,” *Information Systems Research* 5, No. 4, 350–377 (1994).
16. M. Earl and D. Feeny, “Is Your CIO Adding Value?” *Sloan Management Review* 35, 11–20 (Spring 1994).
17. J. Ward, P. Taylor, and P. Bond, “Evaluation and Realization of IS/IT Benefits: An Empirical Study of Current Practice,” *European Journal of Information Systems* 4, No. 3, 214–225 (1996).
18. J. Ward and J. Peppard, “Reconciling the IT/Business Relationship: A Troubled Marriage in Need of Guidance,” *Journal of Strategic Information Systems* 5, No. 1, 37–65 (1996).
19. J. Peppard and J. Ward, “‘Mind the Gap’: Diagnosing the Relationship between the IT Organization and the Rest of the Business,” *Journal of Strategic Information Systems* 8, No. 1, 29–60 (1999).
20. G. Basselier, B. H. Reich, and I. Benbasat, “Information Technology Competence of Business Managers: A Definition and Research Model,” *Journal of Management Information Systems* 17, No. 4, 159–182 (Spring 2001).
21. W. Greene, “Internal Marketing: The Key to External Marketing Success,” *The Journal of Services Marketing* 8, No. 4, 5–14 (1994).
22. R. G. Cooper, S. J. Edgett, and E. J. Kleinschmidt, “Best Practices for Managing R & D Portfolios,” *Research-*

- Technology Management* **41**, No. 4, 20–33 (July–Aug 1998).
23. T. Datz, "Portfolio Management: How to Do it Right," *CIO Magazine* (May 1, 2003).
 24. S. Marlin, "Getting the IT Mix Right," *InformationWeek* (October 27, 2003).
 25. P. Groenvelde, "Roadmapping Integrates Business and Technology," *Research-Technology Management* **40**, No. 5, pp. 48–55.
 26. J. T. M. Van der Zee and B. D. Jong, "Alignment is Not Enough: Integrating Business and Information Technology Management with the Balanced Business Scorecard," *Journal of Management Information Systems* **16**, No. 2, 137–156 (Fall 1999).
 27. M. Martinsons, R. Davison, and D. Tse, "The Balanced Scorecard: a Foundation for the Strategic Management of Information Systems," *Decision Support Systems* **25**, No. 1, 71–88 (1999).
 28. D. Feeny and L. Willcocks, "Core IS Capabilities for Exploiting Information Technology," *Sloan Management Review*, 9–21 (Spring 1998).
 29. R. L. Galloway and G. White, "The Internal Information Systems Function As a Service Operation," *International Journal of Operations & Production Management* **9**, No. 4, 19–27 (1989).
 30. L. Pitt, R. Watson, and C. Kavan, "Service Quality: A Measure of Information Systems Effectiveness," *MIS Quarterly* **19**, No. 2, 173–187 (June, 1995).
 31. A. DiRomualdo and V. Gurbaxani, "Strategic Intent for IT Outsourcing," *Sloan Management Review*, 67–80 (Summer 1998).
 32. M. Bensaou and M. Earl, "The Right Mind-Set for Managing Information Technology," *Harvard Business Review*, 118–128 (Sept–Oct 1998).
 33. M. Broadbent and P. Weill, "Management by Maxim: How Business and IT Managers Can Create IT Infrastructures," *Sloan Management Review*, 77–92 (Spring 1997).
 34. R. Hirschheim, M. Earl, D. Feeny, and M. Lockett, "An Exploration into the Management of the Information Systems Function: Key Issues and An Evolutionary Model," *Proceedings of the Joint International Symposium on Information Systems*, R. Jeffery, Editor, Sydney, Australia (March 1988), pp. 63–86.
 35. R. Hirschheim and J. Miller, "Implementing Empowerment Through Teams: The Case of Texaco's Information Technology Division," *Proceedings of the 1993 ACM SIGCPR Conference Managing Information Technology: Organizational and Individual Perspectives*, M. Tanniru, Editor, St. Louis, April 1–3, 1993, pp. 255–264.
 36. M. Lacity and R. Hirschheim, *Information Systems Outsourcing: Myths, Metaphors and Realities*, John Wiley & Sons, Chichester (1993).
 37. M. Lacity and R. Hirschheim, "The Information Systems Outsourcing Bandwagon," *Sloan Management Review* **35**, No. 1, 73–86 (Fall 1993).
 38. M. Lacity and R. Hirschheim, *Beyond the Information Systems Outsourcing Bandwagon: The Insourcing Response*, John Wiley & Sons, Chichester (1995).
 39. M. Lacity and R. Hirschheim, "Benchmarking As a Strategy for Managing Conflicting Stakeholder Perceptions of Information Systems," *Journal of Strategic Information Systems* **4**, No. 2, 165–185 (1995).
 40. A. Bhattacharjee and R. Hirschheim, "IT and Organizational Change: Lessons from Client/Server Technology Implementation," *Journal of General Management* **23**, No. 2, 1–16 (Winter 1997).
 41. R. Hirschheim and M. Lacity, "Information Technology Insourcing: Myths and Realities," *Communications of the ACM* **43**, No. 2, 99–107 (February 2000).
 42. R. Hirschheim and R. Sabherwal, "Detours in the Path toward Strategic Information Systems Alignment: Excessive Transformations, Paradoxical Decisions, and Uncertain Turnarounds," *California Management Review* **44**, No. 1, 87–108 (Fall 2001).
 43. R. Hirschheim, J. Poora, and M. Parks, "The Evolution of the Corporate IT Function and the Role of the CIO at Texaco—How Do Perceptions of IT's Performance Get Formed," *Database* **34**, No. 4, 8–27 (Fall 2003).
 44. A. Schwarz and R. Hirschheim, "An Extended Platform Logic Perspective on IT Governance: Managing Perceptions and Activities of IT," *Journal of Strategic Information Systems* **12**, No. 2, 129–166 (July 2003).
 45. J. Porra, R. Hirschheim, and M. Parks, "The History of Texaco's Corporate IT-function—A General Systems Theoretical Interpretation," *MIS Quarterly* **29**, No. 4 (2005).
 46. M. Earl, Editor, *Information Management: The Organizational Dimension*, Oxford University Press, Oxford (1996).
 47. L. Willcocks, D. Feeny, and G. Islei, Editors, *Managing IT as a Strategic Resource*, McGraw-Hill, NY (1997).
 48. J. C. Henderson and N. Venkatraman, Editors, *Research in Strategic Management and Information Technology*, Volume 2, JAI Press, Stamford, CT (1999).
 49. W. Currie and R. Galliers, Editors, *Rethinking MIS*, Oxford University Press, Oxford (1999).
 50. C. V. Brown and V. Sambamurthy, *Repositioning the IT Organization to Enable Business Transformation*, Pinnaflex Educational Resources, Cincinnati, OH (1999).
 51. V. Sambamurthy and R. Zmud, "The Organizing Logic of IT Activities in the Digital Era: A Prognosis of Practice and a Call for Research," *Information Systems Research*, 105–114 (June 2000).
 52. R. Zmud, *Framing the Domains of IT Management: Projecting the Future ... Through the Past*, Pinnaflex Educational Resources, Cincinnati, OH (2000).
 53. L. Applegate, F. W. McFarlan, and J. L. McKenny, *Corporate Information Systems Management: Text and Cases*, 4th Edition, Irwin, Chicago, IL (1996).
 54. V. Zeithaml, A. Parasuraman, and L. Berry, *Delivering Quality Service: Balancing Customer Perceptions and Expectations*, The Free Press, New York (1990).
 55. D. H. Drury, "Assessment of Chargeback Systems in IT Management," *Infor* **38**, No. 3, pp. 293–326.
 56. J. Ross, M. Vitale, and C. Beath, "The Untapped Potential of IT Chargeback," *MIS Quarterly* **23**, No. 2, 215–237 (June 1999).
 57. E. Brynjolfsson, "The Productivity Paradox of Information Technology," *Communications of the ACM* **35**, 66–67 (1993).
 58. E. Brynjolfsson and L. Hitt, "Paradox Lost? Firm-Level Evidence on the Returns to Information Systems Spending," *Management Science* **42**, No. 4, 541–558 (1996).
 59. L. Hitt and E. Brynjolfsson, "Productivity, Business Profitability, and Consumer Surplus: Three Different

- Measures of Information Technology Value,” *MIS Quarterly* **20**, No. 2, 121–142 (1996).
60. A. S. Bharadwaj, “A Resource-Based Perspective on Information Technology Capability and Firm Performance: An Empirical Investigation,” *MIS Quarterly* **24**, No. 1, 169–196 (March 2000).
 61. V. Serafeimidis and S. Smithson, “Information System Evaluation in Practice: a Case Study of Organizational Change,” *Journal of Information Technology* **15**, No. 2, 93–105 (June 2000).
 62. P. Weill and R. Woodham, *Don’t Just Lead, Govern: Implementing Effective IT Governance*, MIT CISR WP No. 326, MIT Sloan School of Management (April 2002).

Accepted for publication May 25, 2005

Published online January 20, 2006.

Rudy Hirschheim

E. J. Ourso College of Business, Louisiana State University, Baton Rouge, LA 70810 (rudy@lsu.edu). Professor Hirschheim is the Ourso Family Distinguished Professor of Information Systems in the Information Systems and Decision Sciences Department of Louisiana State University. Previously he was on the faculties of the University of Houston, Templeton College, University of Oxford, and the London School of Economics. He has Ph.D. degree in Information Systems from the University of London. He and Richard Boland are the Consulting Editors of the John Wiley Series in Information Systems. He is on the editorial boards of the following journals: *Information and Organization*, *Information Systems Journal*, *Journal of Information Technology*, *Journal of Strategic Information Systems*, and *Journal of the Association for Information Systems*.

Andrew Schwarz

E. J. Ourso College of Business, Louisiana State University, Baton Rouge, LA 70810 (aschwarz@lsu.edu). Professor Schwarz is Assistant Professor at Louisiana State University. His research interests include acceptance of new technology, IT-business alignment, IT governance, IT boundary choice, and emerging technologies. He has contributed papers on these topics to the *Journal of Strategic Information Systems*, *European Journal of Information Systems*, and *Information Systems and e-business Management*, among others.

Peter Todd

McIntire School of Commerce, University of Virginia, Charlottesville, VA 22904 (ptodd@virginia.edu). Professor Todd is the Chesapeake and Potomac Professor of Commerce and Senior Associate Dean in the McIntire School of Commerce at the University of Virginia. He received a Ph.D. degree in MIS from the University of British Columbia. His research interests relate to the role of information technology in decision making, the adoption and dissemination of IT innovations, and the management of the IT function. He has published in a variety of journals, including *Information Systems Research* and *MIS Quarterly*. ■