Managed service paradox

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In this paper we examine managed service in the information and communication technology (ICT) sector, characterized by the polarization between an infrastructure service that is growing in scale and increasingly becoming a commodity and customized or even one-of-a-kind projects. We refer to the approaches taken by three highly innovative advanced service companies, IBM, Ericsson, and Cable & Wireless, to package and deliver ICT service on a more industrialized basis. We identify the six-stage process that describes their journeys to date. We also describe some of the challenges they faced on that journey as well those currently facing them as they move to a higher degree of industrialization. To address these challenges, we propose a model with three axes: offering development, service delivery, and go to market. The model demonstrates how the increasing industrialization of managed service requires an approach integrating all three of these dimensions. We also show that strong governance is required to address the impacts of technological evolution, marketplace dynamics, and corporate culture.

INTRODUCTION

In a classic paper, Peter Drucker proposed that the greatest management challenge facing developed economies in the twenty-first century is to raise the productivity of knowledge and service workers.[1] In this paper we ask, *Why is it that advanced technology firms are so adept at industrializing the manufacturing of their products, but so challenged by packaging and industrializing the delivery of managed service?* There is a seeming paradox in that, while the high-technology sector struggles with this, more traditional service sectors, such as hospitality, entertainment, and travel, are able to deliver highly industrialized service: they provide their clients with predictable functionality and quality, increase their operating efficiency, and improve their market coverage characteristics through franchising and licensing.

From Pizza Hut to McDonald's, the Ritz-Carlton to Walt Disney World, and British Airways to easyJet, customers and clients expect—and for the most part receive—a service that is designed to minimize surprise and is essentially the same almost anywhere on the globe. This does not mean that every customer receives similar or identical service; the service offered by these companies is often highly configurable—from potentially thousands of choices of meals from the individual food options at McDonald's to a wide variety of hotels, rooms, and

service options within, say, the Accor hotel group. And each client's experience (the way they view the service delivered) will be highly personalized with both carefully orchestrated as well as spontaneous staff interactions.

In contrast to the modular approach of the traditional service sector, the information technology (IT) managed-service sector is almost entirely bespoke (i.e., custom-made). By *managed service*, we refer to the practice of transferring responsibility of day-to-day IT management to an external service provider to improve operational and cost effectiveness. While there is clearly a place for highly tailored service, the extent to which service continues to be individualized and labor intensive rather than asset-based is surprising in view of the maturity of this industry. It also inhibits the exploitation of IT managed services by small- and medium-sized enterprises (SMEs) whose need may be greater than larger enterprises.

We begin by examining the different categories of service and how they relate to the technological and market capabilities of firms. We then explore how vanguard companies, such as IBM, Ericsson, and Cable & Wireless (C&W) are seeking to productize their service offerings and industrialize their service delivery. By *productize*, we refer to the packaging of the service offering as a predefined series of modules or a unified offering to the clients; by *industrializing*, we refer to the service provider's approach to its production and delivery. We describe a six-stage evolutionary process being adopted by advanced service firms to make improvements in the areas of strategy, organizational structure, operational processes, and commercial model. This process begins with the provision of bespoke solutions as these companies hone their capabilities and it ultimately ends by exploiting a large proportion of service components that are replicable and can be rapidly reconfigured to meet each client's specific needs.

Finally we describe a triple-axis conceptual framework to help firms embarking on this process. We compare the approaches taken by our three study companies with more traditional service industries in order to identify what they have in common and what one sector might learn from the other.

This research methodology is based on in-depth collaboration with C&W and Ericsson during the period May 2000 to July 2003 as part of a study of five international companies and an in-depth analysis working with IBM Global Services, EMEA (Europe, Middle East, Africa) between 2003 and 2005. This was an interview-based case study method that examined the companies' strategic decisions and motivations and it involved interviews with 100 CEOs, directors, senior project managers, heads of functional departments, and project managers. It included feedback sessions with each firm and a joint verification workshop with all five companies. This work was published in the spring of 2006.[2] The analysis was subsequently updated with direct practitioner involvement and analysis of the IBM experience of productizing and industrializing the delivery of its managed services in EMEA. In December 2006, the IBM case study and findings were validated and developed further through interviews with the IBM Vice President then responsible for that project and the offerings executive leading the work. The case study at C&W was also updated at that time, following in-depth interviews with the C&W Vice President, Partner Programmes, responsible for C&W hosting and managed-service offerings. (The case studies of IBM, Ericsson, and C&W referred to in this paper and which provide a basis for many of the observations and conclusions should be read as companion pieces. They may be consulted on the Web.[3])

INDUSTRIALIZATION OF MANAGED SERVICE

Products are industrialized by developing standardized and repetitive processes and by creating products that are composed of modular components (*componentization*) which form a platform of interdependent core and complementary products. However, firms have experienced difficulties in achieving similar improvements in the service sector. Some firms, such as IBM, are attempting to improve their service productivity and innovation by emulating the systematic and replicable approaches found in product development. Yet little is known about how firms turn the different services they offer from ad hoc, one-of-a-kind assignments into repeatable and scalable processes; what specific managerial approaches are developed to package, simplify, and reuse service offerings; and whether techniques developed for manufacturing can be easily transferred to the service sector.

It is well known that the service sector strives to industrialize its offerings where appropriate to

improve the performance of a particular service, by substituting technical solutions for service workers (automation), or standardizing service processes. According to Levitt,[4] service can be industrialized using hard, soft, and hybrid technologies:

- Hard technologies and physical processes can replace people, e.g., an automatic teller machine replacing a bank clerk or an airport X-ray surveillance system replacing manual checks by airport security staff
- Soft technologies involve carefully planned industrial systems and procedures that can replace individual service operatives, e.g., self-service restaurants replacing the wait staff in cafes and diners
- Hybrid technologies combining hard and soft technologies can be implemented together to improve the order, efficiency, and speed of service provision, e.g., computer-controlled logistics

But the industrialization of service varies considerably across industries depending on the volume of output as well as the market structure and characteristics of the service provided. It is useful to revisit the product-process matrix (PPM) developed by Hayes and Wheelwright.[5] The PPM shows how product and process capabilities interact over time and provides a way of understanding the industrialization of service in different industries. While the PPM was initially used with manufacturers, Hayes and Wheelwright also applied it to service industries. ***Figure 1A*** depicts its application to the food-service business. It shows that the service sector spectrum is similar to manufacturing process and product stages.

Service can only achieve advances in productivity comparable to high-volume manufacturing processes if technologies are employed that produce reliable, rapid, and low-cost service. High-volume service companies, such as Burger King and McDonald's, have successfully adopted technologies from mass production to provide a standardized menu of service in high volume at low cost. However, such technologies cannot be easily applied to provide bespoke service in low volumes or service on individual projects in order to meet the varying needs of individual customers. Fast-food chains operate in an almost continuous flow model to produce highly standardized services, while fine dining restaurants operate on a job shop or craft basis to cope with the highly specific needs of each customer.

Schmenner developed a similar model showing how service firms move diagonally within a service-process matrix.[6] In his inversion of the PPM, improvements in productivity are gained by moving from the bottom right (high customization and high labor intensity) to the top left quadrant (low customization and low labor intensity).

In this paper, we use Hayes and Wheelwright's framework to emphasize that productivity improvements in IT services, as in other, more traditional services such as food and retailing, depend on movements toward higher-volume production and increasingly standardized outputs. Our revised version of the PPM incorporates one-of-a-kind projects that provide high-value bundles of products and service as integrated solutions tailored to specific customer needs.[7] The customer is no longer simply buying a product or service, but is purchasing the expectation of benefits the solution will provide over time, such as an operating chemical plant or telecommunication system.[8,9] This framework helps us to better understand both the service and the process capabilities required to deliver an integrated product and service offering.

Figure 1B shows the matrix populated with managed services for IT and communications. We can see that service ranges from customized, one-of-a-kind solutions to high-volume and highly standardized service. Each of these categories requires a different delivery model, and these models align well with the production process models in the Hayes and Wheelwright framework and the core capabilities of the firm. As we move from the lower right-hand corner to the upper left of the figure, the nature of knowledge moves from being highly standardized and codified (enabling replicable modes of service production, even the franchising of service businesses) to becoming much more dependent on customized processes and tacit knowledge—that is, the knowledge, insights, and professional expertise known by single individuals. The *appropriability* (the ability to capture the returns that accrue from innovative activity) of this codified knowledge is low, while the dependence on tacit knowledge creates both cultural and practical challenges in terms of productizing offerings or industrializing

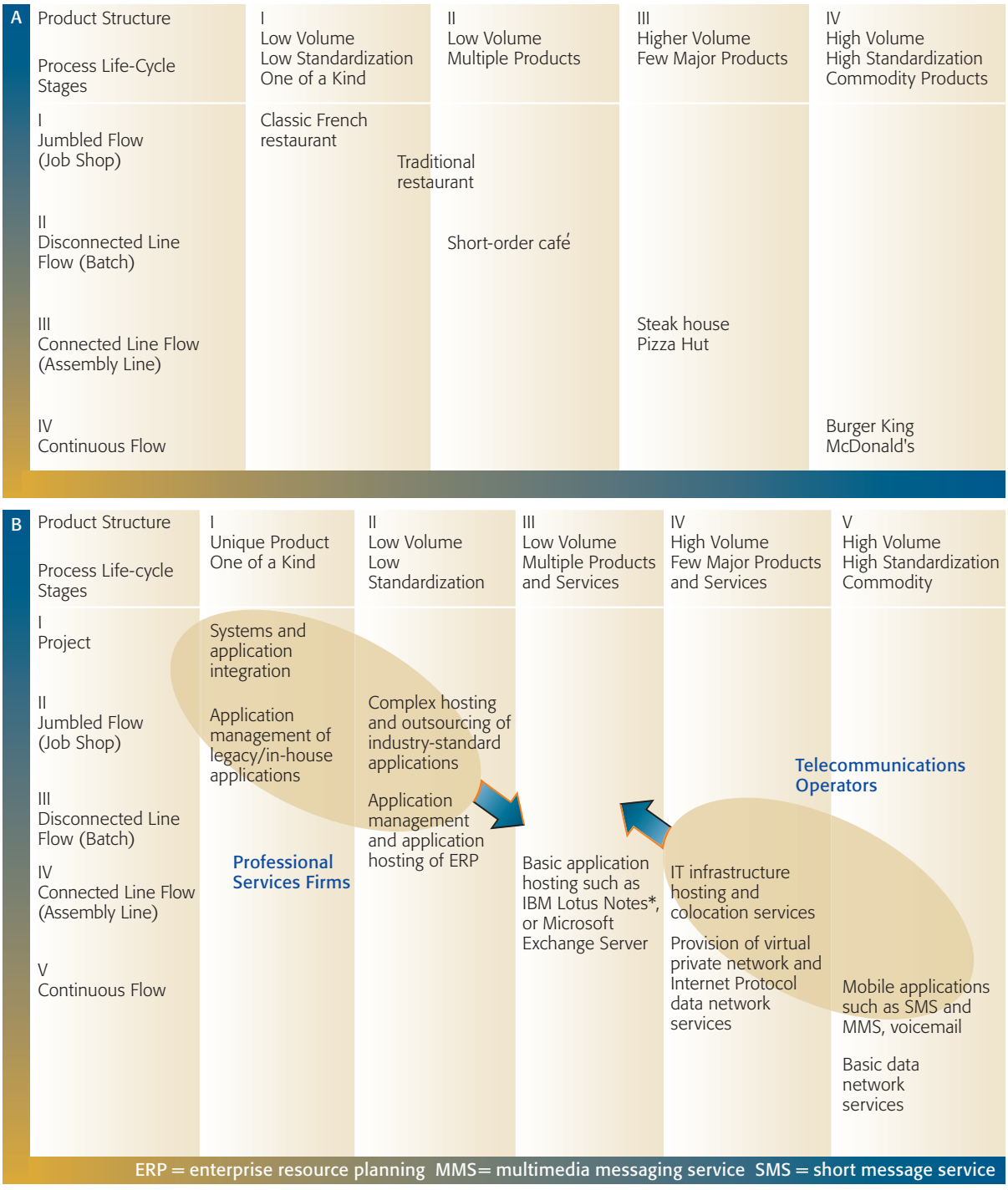

Figure 1
Product and process matrix: (A) Hayes and Wheelwright model showing food service industry, (B) showing convergence of professional service and telecommunications operators

their delivery (see Chesbrough and Spohrer[10]). This represents a major challenge for a service business as it seeks to industrialize its capabilities while continuing to differentiate its offerings competitively.

Firms whose goal is to compete on cost leadership and market focus can seek to improve their offerings within a given quadrant in the matrix rather than by changing their position within the matrix.

Staying in the comfort zone

Firms have a tendency to remain centered within particular cells in the matrix, essentially their comfort zone, even as they innovate and bring new offerings to market or find new ways of producing or delivering them. Drawing on resource-based theory and organizational capabilities, we can see that there are significant obstacles to firms that attempt to shift their positions. However, competitive pressures, the emergence of new technologies, or market shifts will induce firms to improve their performance by moving diagonally to the bottom right of the matrix. Later, we review how this occurred in the three study companies, and how their success was not always complete.

The resource-based view of the firm (for example, Penrose,[11] Teece et al.,[12] and Grant[13]) shows that the profitable expansion of the firm within its existing technology and market base is underpinned by improvements in productivity driven by the increasing specialized or product-specific use of resources.[11–13] This approach emphasizes the importance of capabilities (that is, the distinct skills and knowledge required to organize and perform activities) to the competitive survival and success of the firm. Following Penrose's original approach, we distinguish between the technology and market base (or capabilities) of the firm, the latter referring to the understanding and insights of the firm in relation to market requirements and its ability to engage its resources to bring its offerings to market. In our context of service, we identify three domains of technological capability:

- Service-delivery competence or production-process competence as it relates to service
- Portfolio development
- Market management competence

It is the combination of these technological elements that ensures the reuse, repeatability, and ultimately the replicability of a portfolio of service.

Although much of the organizational capabilities literature refers to individual firms, managed-service solutions are often designed and delivered by a number of firms working in partnership or as subcontractors to a prime contractor, as well as in combination with the client's own resources. Thus, a number of service systems must be considered, depending upon the position of a firm in the matrix. By *service system*, we refer to the value cocreation configuration of people, technology, shared information, and value propositions connecting internal and external service systems.[14] When we refer to the capabilities of a firm, we do so in this context, as well as including its capability of acting as the prime contractor and selecting suppliers and partners with complementary capabilities to deliver the overall service solution.

Firms may develop new offerings to reflect emerging or even maturing market requirements for specific offerings, but if the service-delivery organization, its technological base, its processes and, what is equally important, its culture are grouped at one end of the spectrum in the matrix rather than the other, our conceptual framework suggests that the firm will struggle to transform itself in order to deliver these offerings competitively. Achieving this may require a further technological shift or the acquisition of another company that brings complementary competencies.

TELECOMMUNICATIONS OPERATORS AND IT SERVICES FIRMS: CONTRASTING CAPABILITIES

Telecommunications operators such as BT Group, Telefónica, C&W, and Telecom Italia were early entrants into the managed-service market with IT-infrastructure hosting services, business-application hosting (such as office systems, sales force automation, and enterprise resource planning) and other managed-service offerings linked to data communications offerings (such as virtual private networks, voicemail, voice over Internet Protocol, teleconferencing and videoconferencing).

Two hallmarks characterized their approach. First, their existing strength was in predominantly asset-based offerings—and their assets were physical rather than intellectual. Second, they offered service that could be provisioned on an almost automated basis and was delivered within an assembly-line-like model. They complemented this automation with the involvement of some personnel to wrap the core technological capability with a service dimension for the offering.

Meanwhile, IT and professional service firms, based on a bespoke, high-value service model, find it more challenging to move to a more industrialized approach. Their business models are far less asset intensive; their solution-design and delivery pro-

cesses as well as the decision gates and criteria do not sit comfortably with high-volume batch or assembly-line processes, and the culture of their management and professionals is entirely different from that of telecommunications operators. Figure 1B depicts how these two sets of actors are extending their scope toward a middle ground.

EVOLUTION OF MANAGED SERVICE CAPABILITIES WITHIN THE FIRM

In this section we explore the evolution of capabilities to develop, deliver, and market managed service and we introduce the six-stage process to achieve greater service productivity through industrialization. Although each stage is described in turn, there are many feedback loops in the process; it is not a simple, linear journey. At the end of this section, we illustrate these stages in practice.

Stage 1: Learning

In the case studies,[3] we see that strategic opportunities most frequently arise from tactical responses to customer needs. While strategy departments may appear to be the torch bearers lighting the path to new markets, firms rarely follow their lead until a degree of institutional learning has taken place. The learning may be the result of a specific customer request or ultimatum, or a competitor taking market share. Sometimes a new entrant brings an entirely new business model or capability and takes a significant share of the client base of a firm. The strategy department could perhaps be described as undertaking exploratory learning to develop new approaches to service offerings and delivery. Whereas exploratory learning focuses on breaking with established routines, experimenting, and creating new approaches to a problem, exploitative learning is about developing the resources, capabilities, and organizational structures required to perform routine, standardized, and repetitive processes.[15] Exploitative learning that leads to sustained improvements in service-business performance requires the firm to reach the tipping point in its willingness to exploit this learning. Our research suggests that this tipping point may be the result of external forces or the appointment of a new chief executive or business leader.

IBM first entered the systems-integration market and then the outsourcing business in response to specific customer opportunities and demands. Kodak wanted someone else to take on the operation of its IBM mainframe computers so that it could concentrate on its core business. Who better to do it than the company that had sold them to Kodak in the first place? The institutional learning sometimes comes as an epiphany to company executives when they finally understand what their market analysts and strategists have been recommending for some time. This is the learning stage, and it is rapidly followed by market analysis of opportunities, gap analysis around capabilities and competencies, investment analysis on the resources and assets needed to exploit the opportunities, and risk analysis of the likelihood of success and the costs of failure.

Stage 2: Capability building

In the capability-building stage, the firm assembles a set of capabilities and competencies. It may redirect existing ones and add resources to address the market. Alternatively, and often to complement its own resources, a firm may form swift and often loosely coupled relationships with one or more third parties that can supply the required capabilities and resources.

A current executive may be appointed as the leader of a new business area, or some recruitment may be involved. However, the actual resources needed to supply the new service and those responsible for selling it are likely to remain in the established field and service-delivery organizations. To start the business, existing revenue streams are sometimes recategorized under the new business line and corporate communications repaints as much of the business as possible under the new banner. This is often evident when a company needs to be seen as being in the vanguard of new business sectors.

The leader and perhaps a small leadership team are made accountable for this new business area, but are unlikely to be directly responsible for the resources needed to execute the task. Thus, to whatever level of matrix management was already in place, another dimension is added.

Starting a new business line implies further learning; salespeople assigned to the area will be at the bottom of the new learning curve, and initial sales productivity is unlikely to be high. As sales increase, though, it will engender resistance in large companies because established business-line owners will claim that the new line is cannibalizing their business and that it might even be threatening

strategic relationships with key clients. When field personnel look to their current sales incentive plans, they may be reluctant to volunteer for a sales area with lower productivity and they may not want to be the first to participate in the learning curve in the hope of satisfying this new demand. Their behavior can be likened to the response of antibodies surrounding an invasive cell. A former American Express executive, who joined IBM early in the Lou Gerstner era, referred to it as "death by duck bite." Our experience and case study research suggests that initial leaders in new business areas often fall by the wayside, and only the second or third person to take the job eventually prospers in it.

Stage 3: Organizational restructuring

At this point in the process, the new executive leading the business line will demand a dedicated go-to-market team. This is the beginning of the customer-facing front end of the organizational restructuring stage and involves the formation of an integrated go-to-market team made up of existing field operatives or people specially recruited from other firms who have experience in similar or related service business. This is the first wave of organizational changes. The go-to-market team, often driven by a specialized sales incentive plan, may include business development, sales, technical sales support, marketing communications, bid support, and administration. At this initial stage, the team is unlikely to have a dedicated service-delivery organization behind it, and the executive responsible may not have any direct control over the resources responsible for delivering the service to the customer.

Thus, the service-delivery organization may have different motivations and goals, and its performance measurements may run directly counter to the goals set for the new business line. Service-delivery organizations will be focused on resource utilization, gross margins, return on assets, and compliance. With the introduction of a new service, there will be unpredictable levels of demand, and there may be productivity and quality challenges that will negatively affect most of the key measures of the service-delivery organization. If the service is offered on a global basis, those resources are likely the responsibility of powerful regional executives, which adds another level of complexity.

Stage 4: Resource dedication

As sales and delivery volumes build, it becomes possible to dedicate resources within the service-delivery team and build centers of competence around specific components of the service.[16] Those components can become the focus of continuous refinement to improve quality and service-delivery productivity. This is the start of the resource dedication stage.

With dedicated service delivery and go-to-market teams, we see the emergence of a far more self-contained business line, and it is at this stage that the drive to industrialize the service portfolio accelerates. Initially, capabilities and competencies were shaped into relatively large components that can be configured to support the needs of specific customers. However, this is not industrialization. These components may be categorized and appear in proposals and promotional materials as distinct and modular offerings, but that is not the reality. Each customer may require a different configuration of these components; the components may be insufficient, requiring the addition of certain other services; some components may need to be modified; and the components may not be very well defined.

Thus, the sales team will require a combination of technical sales and service delivery to support each bid; individual bids will need to be costed, priced, and assured; and the cycle time for delivering a proposal and adjusting it to the customer's evolving requirements—both during the bid process and post-sales—will be lengthy and complex and may give the impression that the team is unresponsive to the customer. This is also expensive for the firm making the bid. Once the customer decides to move forward, service provisioning is difficult to automate, reporting becomes highly customized, and service quality and productivity is unlikely to benefit from scale effects. It also tends to foster a splintering of localized resources, which were good at handling their own unique components. The components that are required will often have emerged through happenstance based on local conditions rather than through a strategic design process.

Stage 5: Rationalization

Rationalizing a portfolio involves analyzing the available managed service components from different lines of business, removing overlapping ones,

filling the gaps, and, where appropriate, adapting the ones that remain in order to optimize the range of end-to-end solutions that can be configured from those components, and then ensuring that those solutions align with the marketplace and the evolving needs of the client and that they are competitive. It is a process that is typically led by a cross-disciplinary team or by an executive with deep practical experience with both customers and service delivery go to market—and there are big payoffs for both. If this individual has experience in the product development side of the business, then the concepts of productizing solutions for manufacturability, ease of configuration, and customization will add greatly to the process of industrializing the service offering. Rationalization takes three forms. The first concerns the offerings; the second is related to how offerings are delivered (the opportunities for automation and creation of centers of competence for specific service components); the third involves the sales process by automating proposals using granular, standardized components that are pre-costed, market priced, and pre-assured, both individually and in combination.

When IBM Global Services decided to rationalize its e-business Hosting* service, a team of more than 50 people worked for approximately six months rationalizing the service portfolio across more than a dozen countries taking the very best examples. They created over 700 individual components and for each one, they developed a service specification for proposals, a detailed statement of work that would be included in the contract schedules, and service-delivery descriptions, which informed the service-delivery function of exactly what was involved in the provisioning and delivery of that service consistently across geographic areas and service-delivery centers. They introduced a much higher level of automation in those centers, with common tooling to support service delivery. Not only was the number of service centers halved, most were assigned a specific competency, such as SAP application management and server and storage infrastructure operations. Also, using remote management capabilities, the various service-delivery centers responsible for the various competencies could be located wherever was most cost-competitive. For example, server management for UNIX** servers was located in Brno, Czech Republic, and management of SAP applications was located in La Gaude, France. Rationalization occurred not only in terms of offerings, but also in the approach to delivery, the assets involved, and the physical distribution of resources.

Stage 6: Transformation

The final stage in the process is transformation. We might consider all six stages adding up to a transformation in the way a firm can package and deliver services. However, in this stage we refer to the ability of the firm to transform the nature of its entire offering portfolio and create new capabilities that anticipate market and individual client needs, enabling it to become a market leader.

Transformation becomes possible because each center of competence can focus on the best technologies for enhancing its capabilities. This can be compared to the designers of a Formula One** car, who take both a holistic and a component view to ensure, for instance, that the aerodynamics, braking system, and power train are best in class and that they use the very latest technology so that the car as a whole performs to the highest levels. This same approach is followed by each center of competence in a service-delivery function. It generally leads to the emergence of a strong design and portfolio management group that is able to engage with a dedicated service-delivery team to continuously enhance or create new offerings.

Finally, in achieving more modular, easy-to-configure, and standardized service, the sales function can now look to new channel-delivery models, diversifying its route to market and reaching new customer sets.

TRIPLE-AXIS MODEL

From the description of the six-stage evolutionary model, it would appear that the path to industrializing managed service should be smooth. However, as the examples show, the process is challenging, and there is no unequivocal evidence that the goal is achievable. There are a number of forces at work, including cultural issues that inhibit progress, highly dynamic markets, and rapid technological change. This combination of forces makes it much more difficult to achieve the relatively steady-state model that some of the more traditional service sectors enjoy.

There are three distinct functions in the managed-service business. However, particularly at the

outset, these functions may not be reflected in the organizational structure because individuals or teams may perform one or more of these activities. We have described the front-end go-to-market teams, service delivery, and the development and management of the service-offering portfolio. In each case study we see the evolution of and interaction among these three communities. When firms first enter new business areas, they generally appoint a figurehead to lead a virtual organization, perhaps with virtual offerings, while the organization digests the emergence of this new business line. The individuals selling the service may also be responsible for its delivery.

Although one may be able to depict the concept of an entire portfolio of offerings on a chart or by placing headings on the Web site of the firm, each client receives a customized service whose scope and nature may differ depending on the individual delivering it. Service specifications and statements of work may be relatively well developed, while service-delivery descriptions may not be formalized. In the six-stage process, it can be seen that over time the responsibilities for these three functions or pillars of the business—go to market, portfolio, and delivery—are likely to separate organizationally and become more formalized as sales volumes increase. As the number of engagements grows, it creates an opportunity to develop repeatable service offerings and to take advantage of emerging economies of scale.

However, this division of labor often reflects a division of culture, exacerbated by fast-moving markets and a rapidly changing technology landscape. We can think of the three pillars as the three points on a triangle whose sides are represented by pressures of markets, technology, and culture (*Figure 2*). At the heart of the triangle, balancing these pressures and stopping the triangle from fracturing, is the governance model.

Bridging the cultural differences

Generalizing from the case studies, IBM in particular, we can see that the go-to-market team works with the offering-development team to shape a portfolio of service that reflects its clients' needs and competitive pressures. The delivery organization looks for new tools and techniques that will allow it to improve its productivity and, in its turn, is driven by a combination of this productivity goal coupled

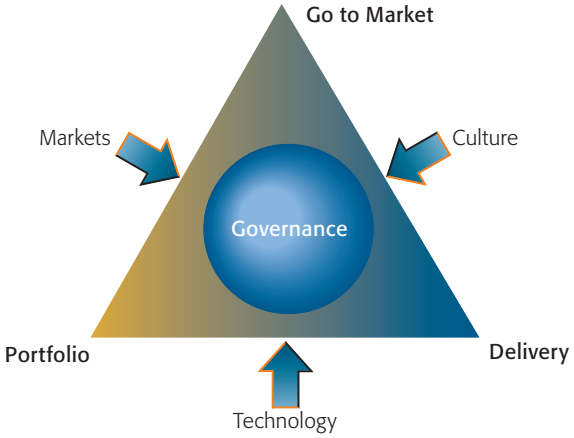

Figure 2
The triple-axis model

with quality objectives to componentize its capabilities for easier reconfiguration and more consistency in delivery. Similarly, the rapid entry of new technologies into the market (for instance, Linux** and open-source software offerings and 3G mobile data communications and wireless broadband solutions) means that it is necessary for the delivery organization to rapidly develop new competencies and capabilities to deliver newly developed offerings in the service portfolio.

Finally, driven by a highly client-focused sales culture, the go-to-market team will be trying to find innovative offerings to differentiate them from their competitors and looking for better ways to engage the client. It will want to avoid protracted or inflexible sales cycles and may see the service-delivery organization as responsible for such rigidities.

The go-to-market team aims to lower the costs for a highly process-driven organization with repeatable offerings, but also strives for an organization that does not constrain them in terms of the timing or content of their response. When looking to sell new solutions to an established client, any problems related to service delivery on a current contract are likely to create significant tensions between the parties.

Whereas in the traditional service industries there is considerable crossover of resources between delivery, service development, and customer-facing client-management organizations, this is unlikely to

occur in the high-technology sector. Go-to-market and sales resources are unlikely to have originated in the service-delivery organization, while, for example in the service industry, a manager at a hotel may have worked his or her way up through the organization. As Daniel Chaffraix, Country General Manager, IBM France, pointed out: "The service product managers are seen as a breed apart. . . . We will find that they are no more likely to move to the service-delivery function than the sales team. Similarly, the sales team may consider them bureaucratic, pedantic, and imply that they are only in portfolio management because they struggled in a direct customer facing role. These cultural differences are almost tribal, with little crossover except at the very top of the business where, say, the service-delivery executive may have led large go-to-market teams or even, say, the finance function. Service product managers need to be able to think in two dimensions—selling and delivering—and keep the balance between the two."[17]

A common complaint from delivery organizations is that the componentization of service leads to automation and commoditization of service, thereby diminishing their role. In their view, interpreting a customer's requirements and fashioning a bespoke service to meet it is a more intellectually challenging role than reconfiguring pre-assured, packaged service components, printing the service-delivery description scripts, and executing them. In the execution of scripts, the focus is on process compliance rather than personal judgment or an individual contribution. Such a service model implies the ability to use contractors or other third parties to execute these basic tasks.

Competitive cost pressures drive the componentization and provision of repeatable service and the exploitation of economies of scale. The result can be remote delivery from lower-cost offshore or near-shore service-delivery centers. However, individuals involved with the delivery function may strive to retain their personal value-add by attempting to maintain a strong bespoke content, which relies on their personal competence for delivery. Thus, conflict arises as the offering development teams seek more industrialized, component-based, repeatable service offerings, while the individuals delivering the service want to see their roles continuing and act to avoid being replaced by casual or offshore resources.

Finally, metrics can be the cause of major culture clashes. We describe later in the section "Market and user-centric approach" how easy it is to encounter differences in perspective. The focus of the service-delivery organization is on compliance with service-level agreements (SLAs), cost optimization, and trade-offs with flexibility. However, managing client satisfaction is more complex than meeting SLAs and key performance indicators, as go-to-market teams are quick to point out.

Thus, the three pillars of the business emerge as separate groups with little crossover in resources and with each group motivated by different values and metrics:

- *Go to market*—Client focused, flexible, differentiation, orientation to sales cycle and sales productivity; key metrics include win rate, contract value, margin, return on investment, and client satisfaction
- *Portfolio*—Innovation in offerings, concern with market fit and coverage, keenly aware of competition; key metrics include the value of and proportion of sales using standardized components, gross margin of offerings, market share
- *Delivery*—Innovation in delivery systems and methods, concerns with skills, asset deployment and management resource utilization; key metrics include gross margin, SLA compliance, productivity and utilization rate, return on assets deployed

Strong and empathetic governance is required to manage the incipient cultural, technological, and market pressures that affect them all.

Technology and importance of innovation

Continuous innovation is the reality faced by providers of high-technology managed services. Delivery resources are highly mobile and often employed on a short-term contractual basis. Documents such as service-delivery descriptions and statements of work are as mobile in practice as the people who execute delivery. Our research suggests that only when the methods of provisioning a service and then delivering it are embedded in proprietary tools can any degree of competitive differentiation be sustained. However, if the tools are proprietary, the customer will be reluctant to commit its business operations to them. Conversely, if the tools are industry standard, then any unique

Table 1 Two approaches to sustaining a service model

	Approach 1	Approach 2
Characteristics	Highly standardized Rapid cycle of new service introduction Asset-based and scale Dependent or disruptive technologies Tightly defined with little or no customization Automatic provisioning Self-care and Web-based support (Approach 1 is typical of telecommunications sector)	Mix of assets and resources Standardized components plus bespoke layer Personalized by client Slower cycle for new service introduction Competency rather than asset dependency (Approach 2 is typical of IT sector)
Examples	Web-server hosting Microsoft Exchange on demand Groupware—Lotus Notes salesforce.com	SAP or Siebel as a managed service Mid-range and mainframe hosting

methods would be contained in scripts that are as mobile as the human resources.

This creates a conundrum in trying to industrialize service delivery. As Chaffraix explained, "Whenever something can be scripted and automated, then it will rapidly be commoditized too, and gains in competitive differentiation are swiftly eroded. This implies a commoditization of most basic managed-service functions, so you must continuously enhance them to stay ahead or treat them as a platform for more customized offerings."[17] This logic had been applied to all IBM infrastructure layers of service hosting up to the application layer, including SAP and Microsoft Exchange. Thus, there are two forces at work: the need to continuously innovate in the way a service is delivered to maintain competitive costs and the need to continuously create new service offerings to stay ahead of the competition and add a highly customized layer to the basic modules to provide an appearance of customization.

There are two approaches to sustaining a service model (*Table 1*). In the first approach, a firm can employ a high degree of automation by which it can increase the scale of assets required to deliver a competitive service, thereby creating a hurdle for smaller companies and new entrants to the market. In addition to automation, it can continuously incorporate new, add-on service offerings. This is very much the model that pertains to the telecommunications sector, which continuously adds on residential and very-small-business service offerings. The second approach is to innovate in the basic delivery and packaging of core service components while adding highly customized capabilities for each client. If business slows, however, margins will erode; the trick is to constantly incorporate client-specific innovations to the core service offerings.

Market and user-centric approach

Traditional service sector firms seem better able to industrialize their service offerings than do high-technology firms because there is a crucial difference in their perspectives. In high-technology industries, capabilities are assembled to address customer needs, and product-like service offerings emerge that are subsequently honed by the delivery organization for greater efficiency. Solution managers on the go-to-market teams use their best efforts to configure existing capabilities in order to solve client problems or portfolio managers assemble existing capabilities into prepackaged service offerings.

In contrast to the high-technology industries, sectors such as hospitality, entertainment, and travel do not start by designing service offerings; instead, they start with what they see as their challenge—designing a client's experience. The service offering and capabilities they will subsequently need result from the design of that experience. Whether this is the check-in experience at an airport or hotel, a retail shopping experience, or a financial transaction online on in person, it is the experience itself that is the focus of the design team's efforts. Designing an

Table 2 Key differences between the traditional service sector and IT managed service

Characteristic	Traditional Services Sector	High-Technology Industries
Offering development	Client experience led	Competency led
Offering structure	Integrated	Component plus bespoke
Issue management	Client satisfaction	Contract compliance
Intra-organizational culture	Frequent crossovers	Tribal with little crossover
Performance indicators	Hybrid, includes soft measures	Hard, SLA based
Technology landscape	Complementary	Disruptive
Competitive landscape	Fragmented	New entrants
Globalization impact	Local delivery	Remote delivery

experience for the client that delivers value and deciding which competencies and assets need to be configured and what type of innovation is required seems to be the right way of looking down the telescope. Staring the wrong way down a telescope—by assembling competencies rather than designing experiences—creates the types of problems that are endemic in the high-technology sector. For instance, a customer may agree to service levels with an average response time or a level of systems availability, and the delivery organization will rigorously measure itself against these levels. However, if at the end of the month a telecommunications operator is unable to process invoices worth billions of dollars on time, or a retailer's point-of-sales system stops functioning when there are about 5,000 potential customers in the store, or a hotel booking system fails and conference attendees cannot be checked out, it is of little importance to these clients that the service delivery met the performance measurement of average availability or response time for that month or quarter.

It is the customer's experience that is of prime importance in such cases. The examples described are all real, and have had dire consequences. In each case, service delivery was comfortably meeting its commitments, but the client-facing team was obliged to wrestle with failures in expectations. One party was involved in managing the client; the other was managing a contract and its SLA. Looking down the wrong end of the telescope, particularly for business-critical managed service, is a cultural, operational, and organizational issue. The division of labor and apparent distance from the customer exacerbates an issue that is, at its core, simple: Service design should be based on designing the customer experience, not componentizing and reconfiguring competencies to address business and operational problems. Such an approach is incomplete and lacks the flexibility needed to address the unique and evolving demands of every client. Pine and Gilmore[18] suggest that experiences are as different from services as services are from products. An experience is more than simply a service that has been wrapped around a physical product. It is a combination of services and products (such as interactive games, product design simulators, and virtual reality) that are designed to create a memorable event for an individual customer. In *Table 2*, we highlight some of the key differences between the traditional service sector and IT managed service with regard to the points raised in this section.

SUMMARY AND CONCLUSIONS

This paper has shown how three vanguard companies are moving toward more productized service offerings and industrialized delivery, with differing levels of success. We identified a six-stage journey from the inception to the creation of a fully formed new business line and highlighted many challenges along the way. We discussed some of the differences between the high-technology sector and the more traditional service sector. We showed that the journey toward productizing managed service and industrializing its delivery is challenging; whether the goal is both achievable and sustainable appears uncertain. The implication of our analysis is that efforts must be made, even if the end point is always just over the horizon.

The core challenges would appear to be cultural, technological, and competitive, as reflected in our

triple-axis model. The rapidly changing technological landscape offers the opportunity to automate existing service, but the competitive and market requirements for service evolve just as rapidly. While the basic service offered can be standardized to keep pace with competitive cost pressures, innovative clients are demanding new capabilities, which can only be offered through more bespoke and personalized offerings that require going beyond the reconfiguration of standardized components and call for innovation by the service provider. In addition to these challenges, there is a cultural issue that effects the pillars of the organization. It impacts not only the way managed services are delivered, but also how they are conceived and built. This is achieved too frequently by assembling competencies rather than designing end-to-end customer experiences. While both approaches are consistent with a compliance culture, the first complies with the execution of the prescribed processes while the second seeks to comply with the goal of delivering the customer experience, which makes it more likely to be a source for future innovation.

The implication is that firms can mitigate the cultural and organizational issues and improve their offerings by imitating the more traditional service sector and focusing on the development of customer-experience-led rather than competency-based offerings. However, the nature of technological change in high-technology industries and the rapid evolution of customer needs mean a bespoke service layer on top of more commoditized components will continue to be an important strategy for higher-value-added managed service.

The alternative to this model is to move to a higher degree of automation and standardization to allow the firm to exploit the benefits of scale or to introduce a disruptive technology such that it is difficult for a new entrant to compete, and then to incorporate new add-on service offerings continuously. This is very much the model in the telecommunications sector with residential and very-small-business service offerings and it is the model for firms such as salesforce.com, which offers a highly packaged sales-force automation solution. In these cases, the offerings can be very tightly defined, the system boundaries are narrow, and customers are not seeking differentiation per se, but rather see it in terms of a tool, with differentiation arising from how they apply it within their business.

Service delivery can be productized and industrialized as long as the system boundaries are narrow and the service itself is tightly defined, but to stay ahead, constant innovation and the exploitation of economies of scale are required, which do not easily coexist. The most commonly employed strategy, exhibited by the study companies, is to exploit existing capabilities and intellectual assets, complement these with a layer of client personalization and, wherever possible, optimize repeatable and standardized core components of the service. While both of these approaches are valid, they are only likely to be successful when a strong multidisciplinary governance process is in place that can bridge cultures, move flexibly to accommodate technological change, and respond rapidly to market shifts.

We began by referencing Peter Drucker's paper, "The New Productivity Challenge." He described four key drivers for productivity: defining the task; concentrating work on the task; defining performance; and forming a partnership with the people who are to become more productive. These all play crucial roles in developing an effective portfolio of services and developing a more industrialized approach to service delivery. However, the success of such an endeavor must also take into account the end-to-end supply chain, including the go-to-market process and its resources. And additionally, it will depend on a strong multidisciplinary governance process that can bridge the differences in culture, organization, and performance metrics of the teams responsible for developing the service portfolio, taking it to market, and delivering the service.

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