Going Beyond the Product: Defining, Designing and Delivering Customer Solutions

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Abstract

The traditional goods-dominant view of marketing focuses on products as the focus of marketing activities. However, as we evolve to a new service-centric dominant logic for marketing, the focus needs to shift from products to customer solutions, which are integrated combinations of products and services that solve complete customer problems. In the marketing of solutions, customer outcomes are the starting point for marketing activities and products are seen as platforms for delivering service-centric solutions. This chapter provides a comprehensive roadmap for defining, designing and delivering customer solutions, and offers suggestions for academic research to advance our understanding of solutions.

Introduction

In recent years, many leading firms are moving away from marketing individual products and services to providing complete customer solutions (Bennett and Tipping 2001; Foote *et al* 2001; Slywotsky and Morrison 1998; Wise and Baumgartner 1999). The move towards solutions is particularly noticeable in industries characterized by complex and high-value products and services, such as telecommunications systems, computer systems, aerospace and weapon systems, transportation networks and medical devices (Hobday 1998, Davies and Brady 2000; Gann and Salter 1998). Firms like IBM, UPS, Ericsson and GE have successfully transformed themselves into providers of end-to-end customer solutions, and have achieved significant growth and financial success from service-intensive solutions (Sawhney, Balasubramanian and Krishnan 2004).

The move towards solutions is grounded in the insight that customers have no interest in products and services *per se* - what they really want are solutions to problems they face in their lives and businesses. As Peter Drucker famously reminded us three decades ago, "What the customer buys and considers value is never a product; it is always utility - that is - what a product does for him." True customer focus requires marketers to begin with a customer problem, and work towards creating solutions that address these problems. While the "problem-solution" approach seems logical, few firms follow this logic in practice. Most organizations remain centered around developing and marketing products. The traditional goods-dominant view of marketing still prevails in most firms, where the product is the primary unit of value exchange (Vargo and Lusch 2004).

The purpose of this chapter is to help marketers to think beyond the product by embracing the solutions mindset. Consistent with the emerging services-dominant logic of marketing, I propose that marketers need to focus on design and marketing of *customer solutions* – offerings that integrate goods and services to provide customized outcomes for specific customers. I present a comprehensive roadmap for defining, designing, and delivering solutions. I begin by contrasting the traditional product-centric mindset with the solutions-centric mindset, and highlight the benefits and challenges marketers face in solutions marketing. Next, I propose a definition of solutions and a set of dimensions for classifying solutions. I show how solution providers can develop a deep understanding of customer problems by focusing on customer outcomes and mapping customer activity cycles. I then turn to the challenge of creating profitable solutions, and how solution providers can develop a "solutions factory" that develops repeatable solutions. I also outline the capabilities that firms need to develop in moving towards solutions, and how they can restructure their organizations to develop and deliver solutions. Next, I discuss how firms can capture value from solutions by employing value-based pricing mechanisms for solutions. I conclude by offering suggestions for a research agenda on solutions marketing.

The Product-Centric Mindset and its Limitations

The product-centric mindset rests on the belief that firms win by creating superior products and by enhancing the features of existing products. Marketing strategies focus on product innovation, product line extensions and new product features. In the product-centric mindset, services are an afterthought – loss-leaders thrown in to enhance the appeal of products. The organization is structured around products, including product development, product marketing and product sales. And success is measured in terms of product revenues and product profitability.

This product-centric mindset no longer guarantees business success. Product demand is volatile, particularly for high-value capital goods. Product differentiation based on features is difficult to sustain in face of intense global competition. In many markets like automobiles and computers, existing products are good enough for most customers, offering little incentive for customers to upgrade to newer versions of products. But perhaps most importantly, products are merely means to an end. To help customers achieve their ultimate goals and outcomes, products and services need to be integrated into customer solutions that solve the complete customer problem. This move towards solutions demands a different mindset.

Towards a Solutions-Centric Mindset

The product-centric mindset is being challenged by the emerging service-dominant logic of marketing (Vargo and Lusch 2004). The service-dominant logic turns product-centric thinking on its head. Services are no longer considered separate from products. Instead of services being a loss-leader for products, product become platforms for delivering services. Services become a source or of profit and the basis for competitive advantage. The focus of marketing evolves from product designs and marketing to the design and marketing of end-to-end customer solutions.

The solutions-centric mindset is diametrically opposed to the product-centric mindset on many dimensions. Instead of starting with the product, solutions design begins with an analysis of a *customer problem* and ends with the identification of products and services that will be needed to solve the entire problem. In the solutions mindset, customer offerings are integrated combinations of products and services designed to provide customized experiences for specific customer segments. Customers segments or vertical markets become the dominant axes for organization and process design. And the firm defines success in terms of customer profitability and share of customer spending. Figure 1 contrasts the solutions mindset with the product mindset.

Figure 1 about here

A number of leading firms are embracing the solutions-centric mindset to transform their value propositions from marketing products to providing customer solutions. For instance, Alstom Transport has shifted its focus from selling passenger trains to offering turnkey "Total Train-Life Management" solutions that includes project management, financing, maintenance, renovations, parts replacement and servicing of train systems (Brady, Davies and Gann 2004). Similarly, the chemicals and life sciences giant DuPont has embraced the mantra to "go beyond the molecule". DuPont's Safety and Protection business is going beyond providing basic materials for roofing and insulation by thinking in terms of foundation systems, roofing systems, window and door systems, structural integrity systems and building science services. Similarly, UPS has created a multi-billion dollar business called UPS Logistics Services that creates solutions for supply chain management, reverse logistics, transportation network management and customer relationship management (Sawhney, Balasubramanian and Krishnan 2004). GE and IBM have also grown profitably by creating solutions for financing and business process outsourcing for their customers. Figure 2 provides examples of how companies in a wide range of industries are embracing the shift towards integrated solutions.

Figure 2 about here

Benefits and Challenges in Solutions Marketing

The shift from products to solutions offers several important payoffs for firms. Solutions allow firms to do more business with their existing customers by offering them an expanded portfolio of service-intensive solution offerings. These solution offerings inevitably involve taking on some of the work that customers would have done by themselves, and therefore often represent a far bigger market opportunity than the core product market. John Deere, the agricultural equipment manufacturer, found that the percentage of every dollar spent by farmers on equipment has been declining steadily over the years, and stands at less than 10% today. The bulk of the spending is migrating downstream to services. By tapping into this services profit pool, John Deere can potentially increase the size of its market opportunity ten-fold. Along the same lines, Wise and Baumgartner (1999) estimate that railway companies buy $1.4 billion of new locomotives annually, but they spend $28 billion a year to maintain and operate their locomotives and infrastructure. By augmenting their core products with complementary services, firms can greatly increase the size of their addressable markets.

Solutions also allow firms to become more embedded in their customers 'operations, which increases customer loyalty and decreases the probability that customers can replace the firm with a competing supplier. By moving to solutions, firms can overcome the commoditization challenge that plagues products and sustain differentiation more effectively than in their core product markets. The reason – solutions offer many more avenues for differentiation than products because they include a variety of services that can be customized in many unique ways for individual customers (McMillan and McGrath 1997). In addition, solutions design requires very intimate knowledge of customers and industries. This domain expertise can become a source of competitive differentiation.

However, moving to solutions also presents a number of challenges. A solutions mindset is difficult for a product-centric company to embrace, because it involves reversing several deeply-held assumptions about developing, marketing, selling and supporting the firm s offerings. Consider the sales process for solutions. Solutions are more complex and more customized than products, so selling solutions requires more effort and takes more time than selling products. The sales cycle for solutions is longer because the firm first needs to understand customer problems through intense interaction and dialogue. Then, it needs to design and develop a customized solution for each customer, which is far more time-consuming than selling an off-the-shelf product. In addition to the time and effort, selling solutions requires that salespeople take a consultative approach to selling as opposed to the transactional approach that product salespeople are comfortable with. Transitioning a product-based sales force to a solutions-based sales force requires significant retraining of the sales personnel, and may involve substantial turnover because some sales people may not be willing or able to change their approach.

In moving from products to solutions, firms also need to manage a number of risks (Sawhney, Balasubramanian and Krishnan 2004). Perhaps the most important is the competence risk that the firm incurs in entering into a services-intensive business. Firms that excel at products may not do well at services because they lack the appropriate skills. Product firms also potentially face a risk of lower margins, because solutions need to be customized for each customer at an additional cost, unlike products that can be created once and sold to millions of customers without modification. If solution providers do too much one-off customization for each customer, profit margins can suffer. To mitigate the competence risk, solution providers need to progressively enhance their project and program management capabilities. To overcome the margin risk, solution providers need to proactively pursue the creation of repeatable solutions. These strategies are discussed in more detail when I consider the capabilities and the process for designing and delivering solutions.

The Nature of Solutions

While many firms talk about "solutions selling" or "solutions marketing", there is little agreement about what constitutes a solution. Solutions are loosely defined as products and services that solve customer problems. I define a solution as *an integrated combination of products and services customized for a set of customers that allows customers to achieve better outcomes than the sum of the individual components of the solution*. This definition highlights two key dimensions on which solutions can be categorized – the degree of integration and the degree of customization (Krishnamurthy, Johansson and Schlissberg 2003):

Degree of Integration: Solutions are more than a simple bundle of products and services. The products and services need to be *integrated* in ways that add value to customers. In fact, the degree of integration across products and services is a key determinant of the incremental value offered by the solution over the sum of the individual parts.

The incremental value customers derive from integration of a solution arises from two sources – *marketing integration* and *operational integration.* Marketing integration refers to integration across the entire customer decision making and buying cycle, from the pre-sales search to post-sales service and support. Marketing integration is *temporal* in nature, because it spans the sequence of steps that customers go through in searching, evaluating, buying, installing, using, servicing and maintaining a system of products. Customers may benefit from being able to search a single location for all elements of the solution, to buy all the products and services they need from a "one-stop-shop" provider, pay a single bundled price for the solution, have a single provider install and deploy the solution, call a single number for customer support and service, and maintain a single vendor relationship.

In addition to being marketed, sold and supported in an integrated manner, the products and services that constitute the solution also need to work "better together" in technical and operational terms. Without operational integration, integration may just be a marketing slogan, and the solution may amount to little more than "putting a lipstick on a pig". In fact, operational integration is the difference between bundling and true integration. Operational integration may mean that individual products are engineered to work better together, or that individual services are delivered using an integrated services platform. The value of operational integration depends on two factors – the effort that customers would need to expend in order to integrate the products and solutions themselves, and the value that they place on their time. If the individual products are standardized (e.g., the components of a personal computer), integration is not difficult and customers would place less value on the integration. And the reason that a segment of customers prefers to buy unassembled furniture from companies like IKEA and assemble it themselves is related to the fact that the opportunity cost of their time is low enough to justify the time spent by them in self-assembly.

Degree of Customization: The problem contexts for any two customers are rarely completely identical. Therefore, it is difficult to create a "one size fits all" solution that works for all customers equally well (Sawhney 2003). In fact, the value of a solution derives from the fact that it is customized to the contexts of specific customer segments, and sometimes even for individual customers. Solutions are far more amenable to customization than products, because they are enhanced with services that can be customized in many ways. The degree of customization may range from segment-specific customization to customer-specific customization (Krishnamurthy, Johansson and Schlissberg 2003). For instance, 3M, a diversified industrial company, offers solutions for 11 specific industries, ranging from Architecture and Construction to Telecommunications and Utilities. Financial services firms like Goldman Sachs and Merrill Lynch go even further in their wealth management services for high net-worth customers, by offering individual-level customized investment solutions and advice. The degree of customization required is a function of the degree of variation in end-user needs and end-use contexts, and the value that customers place on customization.

In summary, the value of a solution can be conceptualized as the sum of:

- The value of individual products and services that make up the solution, *plus*
- The value of marketing and operational integration provided by the solutions vendor, *plus*
- The value of customization for the customer's specific needs and context.

The value of integration and the value of customization represent the difference between the "whole" (the value of the solution) and the "sum of the parts" (the value of component products and services). Figure 3 illustrates the classification of solutions on the two key dimensions of integration and customization.

Figure 3 about here

Developing Customer Understanding for Solutions Design

Solutions design begins with a deep understanding of the customer *problem* that the solution is designed to solve. To understand customer problems, it is useful to begin at the end –with the *outcomes* that customers seek in solving their problem, and the *activities* that they perform in order to achieve their outcomes. By focusing on customer outcomes and activities, marketers can gain powerful insights for creating compelling solutions.

Defining Customer Outcomes

The head of Black & Decker once noted, "What do we sell - Drills? No we don't. We sell holes." This quote reminds us of the importance of anchoring the development of solutions on a clear understanding of the outcomes that customers seek as they look for solutions to their problems. By focusing on outcomes, marketers can shift their focus away from individual products or services, and think instead of what it would take to solve a complete customer problem. An outcomes focus often points the way to services that can complement the core product, or in some cases, even replace the product with a service-dominant solution.

Focusing on customer outcomes helps marketers to see their business from the customer point of view, which is often very different from the marketer's point of view. As Lorenzo Gambrano, the CEO of the Mexican cement company CEMEX, notes, "We understand that our real business is helping our customers complete their construction projects. At the end of the day, no one wants to buy cement; they want to build a house or a bridge or a road." This outcomes-focused thinking has led CEMEX to think very differently about its business, and has enabled CEMEX to create innovative solutions to customer problems (Prahalad 2004, pp. 147-168).

In its search for opportunities to increase its revenues from low-income Mexican customers, CEMEX sent a team of researchers to Guadalajara to uncover problems that low-income customers face in building houses. They discovered that financing was the most important problem for low-income customers. They also found that families employed local unskilled or semiskilled masons who built houses with poor planning and with a lot of wastage. Finally, they discovered that a large proportion of the low-income houses built in Mexico are financed by immigrants repatriating small sums of money from the United States. These remittances are made using money transfer firms who charged high transaction fees and offered poor currency exchange rates. In addition, there was a risk of theft when relatives collected money from the money transfer agencies in Mexico, and a significant portion of the remittances meant for constructing houses ended up being used for other purposes.

CEMEX has created an innovative solution called Construmex USA to solve these problems. Construmex is a service that allows Mexicans living in the United States to send their money directly to cement distributors in Mexico. Distributors receive the money and deliver cement and other building materials directly to the site. Construmex also offers advice to relatives in Mexico on finding the best distributors, planning the a house and estimating material requirements for the house. Construmex has allowed CEMEX to position itself as a solutions provider, and not simply as a seller of cement.

A useful way to shift focus from products to customer outcomes is to think in terms of verbs – what objects *do* – rather than nouns – what they *are* (Vandermerwe 1993). Descriptions framed in terms of what objects do tend to be more expressive and more associative than descriptions framed in terms of their tangible features. This forces marketers to think more deeply about what their products are ultimately designed to accomplish for customers. For instance, when a customer opens an individual retirement account with a brokerage firm, she may really be looking forward to a "comfortable retirement". And when a customer buys a ball bearing in an industrial plant, what they really care about is "trouble-free operations". This is not merely a shift in vocabulary. It is a shift in point of view that requires marketers to see the world of products from the customer's point of view, and work backwards from there to discover the products and services that might help customers accomplish the outcomes they seek.

Mapping the Customer Activity Cycle

The outcomes that customers seek require them to perform a sequence of activities that are logically connected. This temporally-linked sequence of activities that customers engage in to solve a problem is called a *customer activity cycle* (Sawhney 1999; Sawhney, Subramanian and Krishnan 2004; Vandermerwe 1993, 2000). The customer activity cycle consists of three phases:

1. Pre, or before: when customers are deciding what to do to get the desired result – searching, evaluating, deciding, acquiring.
2. During: when customers are doing what they decided on – installing, using, operating.
3. Post, or after: when customers are keeping things going – reviewing, renewing, extending, upgrading and updating.

The customer activity can be mapped in detail at each of these stages through an activity mapping process called activity blueprinting or customer experience mapping process (Seybold 2001, Shaw and Ivens 2002, 2004). Activity blueprinting is a form of exploratory research that uses interviews and observation to trace the full stories of how real customers buy, use, and consume products.

To illustrate how customer activity mapping can lead to the identification of new opportunities, consider how Kodak reconceptualized its digital imaging business in terms of the customer activities involved in managing memories (see Figure 4). The customer activity cycle begins with "capturing memories" through a camera, a camcorder or a camera phone. These memories are then modified and edited, an activity that has been enabled through digital software for manipulating images. Images can then be instantiated, stored, transmitted, shared, archived, and repurposed. An analysis of these activities pointed Kodak to a number of new value creation opportunities, such as online photo printing services, home photo printing paper and printers, and services for printing cards and flyers using photos. By seeing itself as being in the business of helping customers manage their memories instead of producing cameras and film, Kodak has been able to create compelling solutions like the EasyShare system of cameras, the Ofoto printing services, and PictureMaker kiosks in pharmacies for self-printing of digital pictures.

Figure 4 about here

Designing Repeatable Solutions for Profit

A key driver of the value of solutions is the fact that they are deeply customized to the needs and context of specific customers. This means that solutions often require one-off customization work for each customer, making it is difficult to create economies of scale in developing solutions. Therefore, a key consideration in the design of solutions is to provide the level of customization valued by customers without significantly compromising operating margins.

The key to overcoming the margin challenge in solutions is to embrace *repeatability* by creating a "solutions factory" for productizing solutions (Brady, Davies and Gann 2004; Davies and Brady 2000). Instead of economies of scale, solutions firms need to embrace "economies of repetition" by reusing elements of previously designed solutions or by creating solutions platforms that can be used to create flexible offerings from common baseline solutions and a set of flexibly configurable options (Anderson and Narus 1995).

To embrace repeatability, solution providers need to complement their strategic and functional capabilities with *project capabilities* –capabilities that are central to the project-based one-off work that is central to the design and delivery of customized solutions (Davies and Brady 2000). Project capabilities include skills related to customer requirements gathering, conceptual design, cost estimation, bid preparation, project and program management, and organizational learning processes that allow firms to benefit from "economies of repetition" (Hobday 1998).

The development of project-based capabilities requires a fundamental change in the design of the organization. The need to develop specialized project-based and customer-facing capabilities has led firms like IBM, Nokia and ABB to adopt a "front-back" hybrid organization to develop and deploy solutions (Brady, Davies and Gann 2004; Foote *et al* 2001; Galbraith 2002; Gerstner 2002). This front-back design consists of "front-end" *solutions units* responsible for developing and delivering integrated solutions, "back-end" *product units* that support the front-end units by developing products that go into the solutions and a "strong center" to mediate between the front-end and the back-end units (see Figure 5).

The front-end units specialize in project management capabilities and customer knowledge. They take responsibility for revenue and profit growth for specific customer accounts or specific customer segments. They provide a "single face" to the customers, bringing together products and services from the entire firm as well as from third-party partners for customers. Customers are typically served through relationship managers, account managers, or segment managers who have a deep understanding of the customer segment and even individual customer accounts within a specific segment. IBM went through a reorganization of this type under Lou Gerstner from 1993 to 1998, which involved creating a front-end called IBM Global Industries, which was organized around the key industries that IBM serves. These units were given Profit & Loss responsibility for their industries, a significant departure from the past where the geographical units had P&L responsibility (Gerstner 2002).

In the front-back design, the product units become back-ends that support the customer facing front-end units. This often requires a significant change management challenge, because product units traditionally are the power centers for the organization in many product-centric firms (Foote *et al* 2000). Product units are responsible for designing and developing products, and for working closely with the front-end solutions units to ensure demand for their products within the solutions. Product units are also responsible for creating platforms that can become the basis for repeatable solutions.

The front-back organization design cannot function well without a clear strategic direction and effective coordination between the front-end and the back-end. This is the responsibility of the corporate center. This "strong center" is responsible for mediating between the front-end and the back-end, to ensure that they collaborate closely together. The corporate center should include leaders from the front-end as well as the back-end of the organization who are tasked with coming up with coordination mechanisms like shared performance scorecards, cross-linked teams and rotation of personnel between the front-end and the back-end.

A front-back organization design allows firms to create repeatable solutions by progressively productizing one-off solutions developed by the front-end. This allows the firm to create a "solutions factory" that is constantly being provided with one-off solutions as "raw material" that the back-end units can convert into repeatable solutions – the "finished goods" for the solutions factory. This is how IBM creates repeatable solutions (Foote *et al* 2000). IBM's Global Industries Units create one-off solutions by working with cutting-edge customers. An integrative leadership team with members drawn from the front-end as well as the back-end evaluates each one-off solution as a candidate for a productized solution, based on how many other customers, geographies and industries the one-off solution can be leveraged into. The back-end Global Services unit then develops a codified, standardized and generalized version of the chosen solutions as a solutions platform. These solutions platforms are then sent off to the front-end, which markets the solutions to all of IBM's customers.

The solutions capabilities in the front-end and the back-end are developed in a phased manner, with initial moves focusing on developing the front-end, and later moves focusing on strengthening the back-end and refocusing the firm around solutions (Brady, Davis and Gann 2004). These four stages are as follows:

1. Initial front-end moves: At this stage, the firm establishes a pilot project-based to move into and learn about new solutions opportunities. The capabilities in the front-end are developed by carrying out "one-off" solutions projects for a few vanguard customers.
2. Expand the front-end: At this stage, the learning from initial projects is captured and transferred to all existing projects as well as to all subsequent projects. The scope and size of the customer-facing front-end is increased, and customer segment-based or market-based organizations are formalized. Program management skills are also enhanced in the front-end.
3. Build the back-end: The focus at this stage is to re-organize internal product units to better support the solutions front-end units, to enter into strategic partnerships that are needed to fill out the solutions offering, and to build capabilities for developing product platforms and service portfolios in the back-end units.
4. Re-focus the entire organization: Finally, at this stage, the entire firm's activities are oriented around the deliver of integrated solutions. Profit-and-loss responsibility s shifted from the product units to the front-end customer facing units. The focus of capability development at this stage is to improve coordination between the front-end and back-end, and to promote strategic learning.

Figure 5 about here

Pricing Solutions based on Customer Value

Pricing of solutions is a difficult task, for at least four reasons. First, integrated solutions provide value-added services like integration, customization, deployment, maintenance, servicing, and financing. Setting a price on these services is more difficult than pricing tangible products. Second, these value-added services are customized for each customer, so it is difficult to establish a standardized price for solutions. Third, solutions providers take over the responsibility for activities previously performed by customers and ownership of assets previously owned by customers. This transfer of responsibility also involves a transfer of risk from the customer to the supplier, which needs to be incorporated into the price for solutions. Finally, solutions often involve an ongoing relationship between the solutions provider and their customers, as opposed to a one-time transaction involved in selling a product. Pricing mechanisms need to allow for pricing over the entire duration of the relationship.

To overcome these challenges, the price of a solution should be based on the value created by the solution for customers. The logic behind value-based pricing is simple – the value captured by the solutions provider should be indexed to the value created by the solution for the customers (Roegener *et al* 2001). Value-based pricing begins with a value assessment study to estimate the monetary value of the benefits received by the customer from the solution. These techniques include field value-in-use assessment, indirect survey questions, benchmarks and conjoint analysis (Anderson, Jain and Chintagunta 1993). Next, the solution provider needs to link the amount and timing of customer payments for the solution to the timing and amount of actual value realized by customers (Sawhney 2002).

Value-based pricing approaches can include pricing approaches based on the *quantity of usage* of a product or service, or on the *quality of customer outcomes* (see Figure 6 for a classification of value-based pricing mechanisms for solutions). Quantity-based pricing approaches for solutions include subscription pricing (based on the duration of the solution), utility pricing (based on quantity of usage of a product or service), and time-and-materials pricing (based on quantity of usage of human resources). Quantity-based approaches typically involve payments for solutions on a periodic basis instead of a large up-front payment for a capital good. This mechanism is often called subscription pricing or "utility pricing" because of its similarity to pricing in utility industries. Subscription pricing can also include a no-fee termination option that allows customers to terminate the subscription payments at any time if they are not satisfied with the service, to mitigate the customer's risk.

Outcome-based approaches go one step further in linking value captured by solution providers with the extent to which value is created for customers. These approaches can include fixed-fee, fixed-time pricing or gain-sharing pricing. Fixed-fee and fixed-time pricing involves mitigating the risk of cost and time overruns in the project, because the vendor provides the guarantee that the cost or the duration of a project will not exceed an agreed-upon amount. For instance, IT and business process outsourcing contracts often guarantee a fixed price or a fixed amount of cost savings to customers.

The most extreme version of customer value-based pricing is gain-sharing (also called risk and reward sharing). Gain-sharing is a pricing approach where the payments to the solution provider are based entirely on the level of business value realized by the client. In a gain-sharing arrangement, the solution provider and the customer agree to track a pre-defined set of value metrics, and the payment to the vendor is fully contingent upon the extent to which the customer actually realizes value, as measured on these metrics. Gain-sharing offers several important benefits to customers as well as to solution providers. For customers, gain-sharing provides an assurance that the interests of solution providers are closely aligned with their interests, because the solution provider's financial success depends upon customer success. Therefore, the providers have strong incentives to only undertake work that truly creates value for customer. Further, they have an incentive to find creative ways to collaborate with customers in the joint pursuit of greater value. A second major benefit of gain-sharing arises from the fact that this arrangement shifts financial risk from the customer to the solutions provider. This is particularly important for risky and costly projects, where the financial risk is considerable. And gain-sharing lessens the up-front capital required by cash-strapped customers because it is a "pay as you go" mechanism that could potentially make projects self-funding, because realized savings can be used to pay for future investments in the project (Sawhney 2004).

Figure 6 about here

Gain-sharing also had a number of potential benefits for solution providers. It provides a basis for competitive differentiation, by signaling the confidence that the solution provider has in its ability to successfully deliver value. By putting their own "skin in the game", solution providers can convince customers that they truly believe in their ability to deliver on their promises and on their confidence in their own financial position based on their ability to take on risk on behalf of customers.

Despite these benefits, gain-sharing arrangements are still relatively rare, with only a few examples in advertising, legal services, revenue collection agencies and IT outsourcing contracts. The barriers to adopting gain-sharing arrangements include the difficulty in objectively measuring the value created by solutions, resistance from purchasing organizations to using unfamiliar pricing approaches, fears of owing the solution provider a lot of money if the projects are *too* successful and the lack of trust between solution providers and customers. To overcome these barriers, solution providers need to define a clear set of business success metrics for measuring value. They also need to educate the customer's organization about the benefits of gain sharing. And they need to offer to put caps that limit the maximum payout to the solution provider in the event of a runaway success.

Ultimately, gain-sharing arrangements only make sense when the gains from the projects are not a zero-sum game that involve a pure transfer of risk from the customer to the solution provider, because this would create an adverse selection problem for the solution provider if only customers who have no confidence in the solution outcomes opt for gain-sharing arrangements. Gain-sharing is most useful when there are significant *gains to collaboration* —when the solution outcomes derived from close collaboration between solution providers and customers are truly superior to the outcomes that would be achieved if the two parties acted independently. Gains from collaboration can accrue from joint forecasting, joint planning, and joint optimization of operations.

Towards a Research Agenda in Solutions Marketing

Despite the importance of solutions in the world of practice, academic research on solutions marketing is woefully lacking. This is a domain where practice is well ahead of academic research. This is partly attributable to the fact that academic research in marketing has traditionally focused on high-volume, low-value, frequently-purchased consumer packaged goods, while solutions marketing is most relevant in industry settings characterized by low-volume, high-value, technology-intensive capital goods (Davies and Brady 2000). Academic research in marketing has generally paid less attention to business marketing than to consumer marketing, and it seems to have paid even less attention to complex project-based solutions marketing in business-to-business settings.

This paucity of academic research suggests that solutions marketing is an extremely fertile area for academic researchers. Here is a partial list of interesting directions for research in solutions marketing:

- Financial Attractiveness of Solutions Marketing: I have noted that a move towards solutions has some important benefits (e.g., revenue growth, differentiation, customer retention), but such a move also presents difficult challenges and risks (e.g., competence risk, margin risk). It would be interesting to conduct an empirical investigation to see if the financial benefits of moving towards solutions outweigh the risks, and the contextual factors that separate winners from losers in migration to a solutions approach. A related research direction would be to identify approaches to mitigating risks in moving towards a solutions-centric approach, and the conditions that determine the success of various risk mitigation approaches (see Sawhney, Balasubramanian and Krishan 2004 for preliminary thinking on this). Also of interest is the scope decision – how far should the firm go in expanding the scope of the solutions that it provides to customers, and when does the competence stretch required to expand the scope become too much for the firm to handle?
- Market Opportunity Analysis for Solutions: While a move to solutions greatly expands the market opportunity for firms, it also makes the market opportunity analysis process more difficult. It can even be difficult to define the boundaries of the market space for solutions, because there are so many directions along which solutions opportunities can be explored. For instance, firms can move downstream in the customer activity cycle to provide after-sales services to customers. Or they can move upstream to provide pre-sales services and assistance. Or they can take over some of the customer's activities and business processes. Each of these directions is a possible "growth vector" that the firm

could explore. Further research is needed to understand how firms can structure their solutions market opportunity portfolios, and how they can prioritize the vectors along which they should explore opportunities for service-intensive growth (Sawhney, Balasubramanian and Krishnan 2004).

- Value Stream for Solutions Development: The flow of value-added activities in product-centric industries has traditionally been conceptualized in terms of Porter's Value Chain, a representation of the sequence of value-adding activities performed by firms from sourcing of inputs all the way to outbound logistics, distribution and sales of finished products (Porter 1985). However, the value chain for products is quite different than that for products, because the sequence of activities performed in producing one-off, highly complex capital goods-based solutions is often the reverse of that required for mass-produced products (Brady, Davies and Gann 2004). In mass production, product development comes first, followed by marketing and distribution to customers. In solution development, by contrast, the sequence begins with understanding the customer's problem and designing a customized solution. This is followed by manufacturing or sourcing components and products that will constitute the solution, integrating the components into a whole system, installing and deploying the solution, operating and maintaining the solution over an extended duration, and providing end-of-life cycle services for the solution. In solutions design, the products that will be needed for the solution are not known *a priori,* in contrast with product marketing, where the product comes first. Further research is needed to conceptualize the value stream for solutions development along the lines suggested by Brady, Davies and Gann (2004) by modifying and adapting the Value Chain framework to the solutions design and development context.

- Organizing to Deliver Solutions: The front-back organization design is an example of the structural changes that are required for firms to organize around solutions design and delivery. The front-back design allows firms to create solutions and customer expertise in the front-end, while concentrating product and service capabilities in the back-end units (Sawhney 2001). However, managing the linkages between the front-end and the back-end presents a difficult challenge. Further research is needed to identify the various linking and coordination mechanisms that firms can use to improve the effectiveness of the front-back organization, and the conditions under which different mechanisms should be used.
- Design of Optimal Value-Based Pricing Mechanisms: Value-based pricing, particularly gain-sharing mechanisms, represent an important advance in thinking about how value gets created and shared between solution providers and customers. But gain-sharing mechanisms need to be more than a simple transfer of financial and operational risk from the customer to the solution provider – they need to facilitate the creation of superior outcomes through collaboration. Gains from collaboration can come from better allocation of activities between customers and providers, better collaboration in executing the activities, and improved incentives for both parties to create more value from the partnership. We need to learn more designing gain-sharing mechanisms to maximize the potential benefits of collaboration, and how to overcome barriers to adopting gain-sharing mechanisms.

These are only a few of the many directions along which academic researchers can enhance our understanding of how to define, design, develop, and deliver solutions more effectively. As we evolve to a new service-dominant logic for marketing, I believe that we also need to evolve to a solution-centric mindset that encourages marketers to think beyond their products, and to explore the vast frontiers of solutions opportunities that surround their products. Hopefully, this chapter will serve as a roadmap for practitioners as well as academics to embark on this exciting journey.

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Figure 1: Contrasting the Product Mindset with the Solutions Mindset

Dimension	Product Mindset	Solutions Mindset
Mental Model	Product leadership – winning by creating innovative products and enhancing features of existing products.	Value leadership – winning by working with partners to create and deliver superior customers solutions
Offerings and Targeting	Standardized "horizontal" offerings targeted at a broad range of customer segments	Customized "vertical" offerings targeted at a precisely defined set of customers and industries
Offering Design	Start with the product or service, and then find customers for the product or service.	Start with the customer problem, and then assemble a set of products and services to solve the customer problem.
Organization Structure	Product as primary organizational pivot for sales and marketing. P&Ls organized around products	Customer accounts and customer segments as primary pivot for sales and marketing. P&Ls organized around segments and industry verticals
Marketing Operations	§ Emphasis on product launches and broad reach advertising campaigns § Marketing function separated from sales, and partners separated from the firm	§ Emphasis on deep and ongoing customer engagement § Marketing, sales, and partner functions integrated into customer account teams
Key Performance Indices (KPIs)	§ Product revenues § Market share § Product profitability	§ Segment/account revenues § Share of customer spending § Segment/account profitability

Figure 2: Examples of the Shift to Integrated Solutions

Company	Traditional product or service focus (1995)	Integrated Solutions (2000)
Alstom Transport – Railways	Products: • subsystems (e.g. propulsion, traction, drive, electronic information systems) • rolling stock • signaling and train control systems	Transport solutions (e.g. 'train availability'): • Systems integrator – turnkey solutions for project management, fixed infrastructure, and finance • Services for maintenance, renovation, parts replacement & service products - 'Total Train-Life Management'©
Ericsson – Mobile Communications Systems	Products: • mobile handsets • mobile system • subsystem products: radio base stations, base station controllers, mobile switches, operating systems, and customer databases	Turnkey solutions to design, build and operate mobile phone networks: • Mobile systems – complete supplier, systems integrator and partner • Global Services – services and business consulting to support a customer's network operations
Thales Training & Simulation – Flight Simulation	Products – standalone flight simulators for commercial and military aircraft	Training solutions (e.g. 'pay as you train'): • Systems integration • Training services: networked training; independent training centers for training services; and, synthetic training environments
WS Atkins – Infrastructure and the Built Environment	Engineering consultancy, project management and technical services for infrastructure projects	Integrated solutions for the built environment; • the design, build, finance and operation of infrastructure across industrial sectors • Total Solutions for Industry (TS4i) provides one-stop-shop for design, construction, maintenance and finance
Cable & Wireless Global Markets – Corporate Networks	Provides 'managed network services' for multinational corporations • Network design • Supply telecom infrastructure and applications • Network management	Global outsourcing solutions for a multinational corporation's entire telecom and IT needs on a global basis: • Network design • Supplies telecom infrastructure and applications • Network management • Ownership of the network • Network operation • Business process applications • Service Level Agreements

Source: Brady, Davies and Gann 2004

Figure 3: Dimensions of Solutions Design

Degree of Customization	No Integration, Single products	Marketing Integration	Marketing & Technical Integration
Individual Customer	• Bentley • Dell	• Accenture • Siemens One	• BASF OEM solutions • IBM Outsourcing
Vertical/ Segment	• P&G • Coca Cola	• Telecom services • NCR Teradata	• Trilogy Software • Dow Automotive
None/ Limited	• Commodities • Ingredients	• McDonalds Value Meals • Mutual Funds	• Microsoft Office • Sony Home Theater

Degree of Integration

Adapted from: *Solutions Selling: Is the Pain worth the Gain,* McKinsey & Company, Marketing & Sales Practice.

Figure 4: The Customer Activity Cycle for Managing Memories

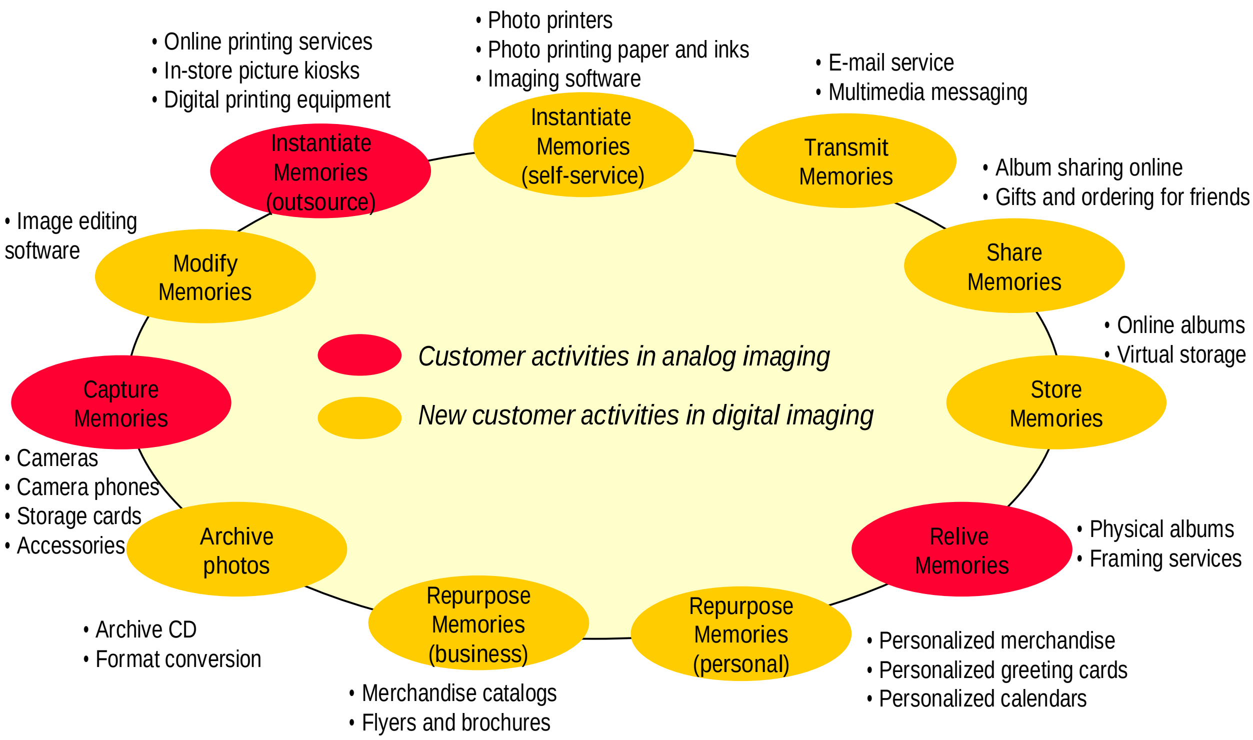
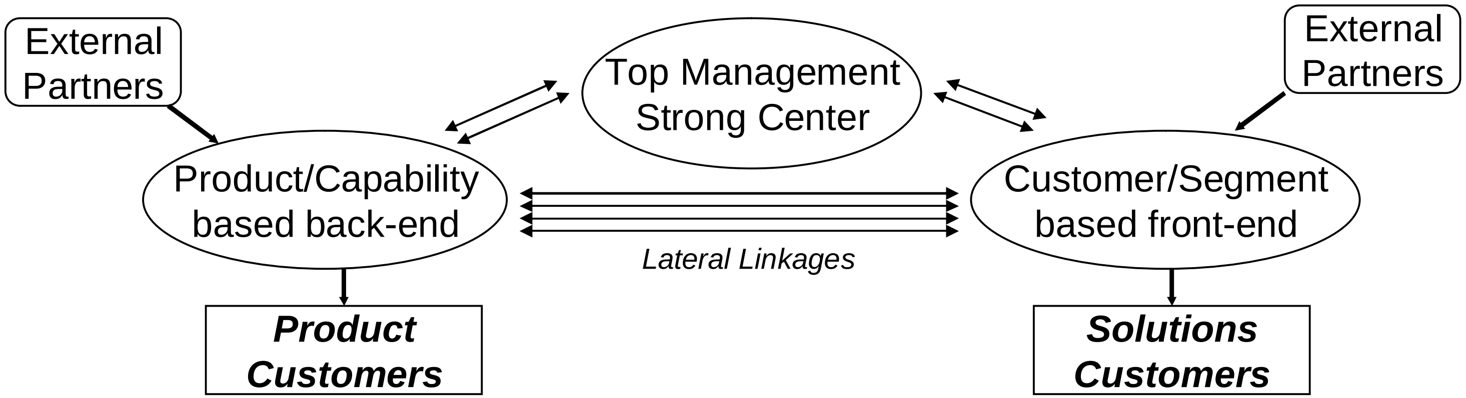


Figure 5: Organizing for Solutions: The Front-Back Design



Role	• Serve as internal supplier to solutions units while selling directly to product customers • Standardize, simplify and modularize product lines to be solutions-ready	• Lead the drive for solutions • Support lateral interaction between front and back-end units • Manage common account planning process and common performance assessment systems	• Develop and deliver integrated solutions • Assume profit-and-loss-type responsibilities for customers or segments
Relationships	• Respond with flexibility and openness to demand of front-end • "Push" and "pull" with front end to tailor products to solutions packages • Collaborate on account planning and solutions development, product specifications, sales priorities and pricing of solutions	• Mediate between front and back ends • Include leaders from each unit • Promote cultivation of rich interpersonal networks	• Configure and reconfigure teams around solutions opportunities and delivery • Utilize core team and pool of internal and external experts • Form alliances with other firms for sourcing products and services for creating solutions

Adapted from: "Making Solutions the Answer", *McKinsey Quarterly, 2001, 3.*

Figure 6: Value-Based Pricing Mechanisms for Solutions