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# Servitization is Leading Manufacturing's Advance into New Business Models

## How tech-driven coupling of products and services is creating disruption and elevating profits

# New Revenue Streams Rising

For manufacturing leaders evaluating how to launch a servitization capability, space elevators provide a surprisingly useful object lesson.

Servitization, or digitally-driven service management, involves the creation of new digital services – enabled by cutting-edge analytics, embedded sensors, machine-to-machine (M2M) communications and related forms of advanced technology – that are bundled with products. These new manufacturing models, which require a relationship-based sales approach, have helped firms produce entirely new revenue streams, slash costs, lift customer relationships to new levels and carve out sharp advantages over competitors. In some cases, servitization programs have evolved into entirely new companies.

Like the carbon nanotube cables that leading scientists are now trying to send tens of thousands of miles into geostationary orbit, servitization programs involve numerous interrelated enabling components that must be understood, evaluated and orchestrated into a smooth-running operating system. For most original equipment manufacturers (OEMs), the development of servitization capabilities also requires a major mindset shift from selling products to selling outcomes.

## Servitization Models Driving Growth

The concept of servitization – the coupling of service offerings with products – emerged decades ago. Rolls-Royce's pioneering "power by the hour" approach to support business jet engines in the 1960s marks an early servitization milestone. What is new, however, is how leading manufacturers now leverage digital technology advancements to deploy servitization models that drive significant growth.

- By 2017, 49 percent of **Rolls-Royce's** revenue was generated by the provision of services.[1)]
- Services now account for more than 15 percent revenue and a major portion of gross margins at **Apple**, which has announced that it will stop reporting unit sales of its manufactured products.
- Despite its recent challenges, GE projects will generate $12 billion in digital revenue, largely through servitization models, in 2020. **GE Digital** was formed from a servitization initiative that swiftly evolved into a massive new business.
- **Daimler's car2go** business has enjoyed a similarly meteoric growth trajectory. Car2go and Daimler's other mobility services now count 17.8 million customers; that servitization revenue is a key reason why Daimler Financial Services, which houses these mobility offerings, posted record highs in new business, contract volume, and earnings before interest and taxes last year.[2)]

Beyond those high-profile examples of servitization exist examples within nearly every manufacturing segment:

**Aerospace manufacturers** using predictive maintenance for key flight components;

**Chemicals companies** deploying consumption-driven replenishment and supply-planning;

**Construction firms** leveraging machine-to-machine technologies within offerings that optimize the timing and execution of construction plans;

**Energy companies** developing managed asset maintenance programs based on massive amounts of usage and environmental data; and much more.

It's complex work, but then so is building a space elevator, which some leading astronautics experts believe will start ferrying equipment into orbit – for as much as 100x less the cost than doing so via rocket-powered crafts – by 2035. The key to planning this type of endeavor is to deconstruct the project into smaller challenges, identify all of the enabling components and key challenges, and recognize that a handful of key considerations are crucial to creating an effective strategy.

Scientists have already homed in on three pivotal aspects of getting a space elevator aloft: the material needed to build a cable that will be 100 million times longer than it is wide (carbon nanotubes with crystal graphene as a backup); the counterweight (repurposing orbiting space junk is a strong possibility); and power (solar energy enhanced by laser technology).[3)]

A viable space elevator program also must extend beyond engineering matters to address less tangible, yet still crucial, drivers of success, such as the political cooperation required to sustain a sweeping, multilateral effort.

## Consider a Pragmatic Approach

A similar practical approach has governed successful servitization planning efforts completed by Rolls-Royce, Alstom, Xerox and Caterpillar among others. While the allure of advanced technologies and revenue increases are seductive, manufacturing leaders should undertake a distinctly pragmatic approach. They should also strive to extinguish commonly held misperceptions about this growing trend while focusing on servitization realities. Leaders can get started on doing so by organizing the work into more manageable pieces that address the following questions:

- **WHAT IS THE OPPORTUNITY?**
- **WHAT IS THE PLAN?**
- **HOW DO WE OPERATIONALIZE THE PLAN?**

This paper focuses squarely on those first two questions by examining different models of servitization, identifying the enabling components and key challenges, and sharing considerations that have proven useful in developing strategies for successful servitization programs. In our experience, identifying the servitization opportunity and setting a strategy can be completed in the same 12-15-week timeframe that other major strategy-setting activities typically require.

# Servitization's Many Drivers, Benefits and Flavors

**Misperception:** *Technology advancements are driving servitization adoption.*

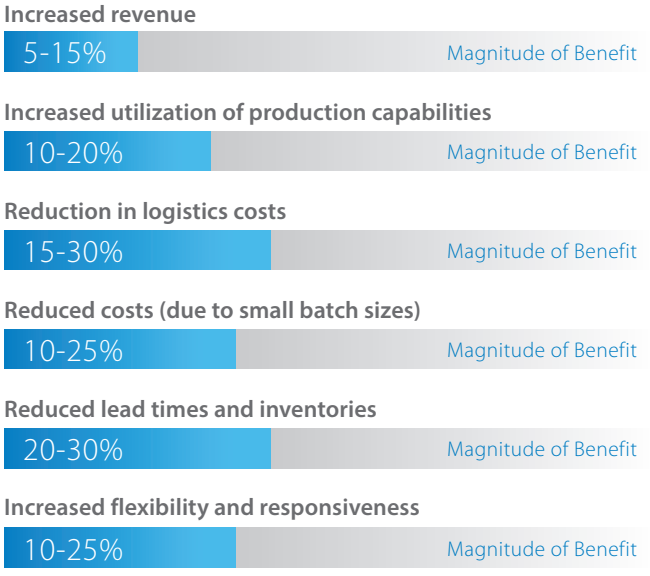
**Reality:** *While technology is a crucial enabler of servitization, other compelling forces drive demand for this capability, including: customers' hunger for service-oriented solutions, the growing need for differentiation, competition from new industry entrants, and the potential for significant revenue growth, utilization improvements, cost reduction, inventory management gains and increased responsiveness.*

Today, servitization programs operate in nearly every manufacturing segment, including aerospace, chemicals, defense, energy and technology.

Competitors' intentions and customers' needs rank highly among the factors driving demand for service-based revenue models. When manufacturing executives realize that the company's competitive position is at a risk of deterioration, they scrutinize the market and see other companies deploying advanced technology to enable new service programs. They also see non-traditional competitors muscling into their territory to sell a growing number of offerings in support of servitization. At the same time, more customers are expressing interest in service-oriented solutions.

> Nearly 70% of 750 global manufacturing executives surveyed late last year reported that their companies were offering some level of servitization.[4] Another recent survey of global manufacturers identified the "satisfying of customers' requirements" as the second most frequently cited benefit of servitization, behind "selling more products."[5]

A look at the specific benefits these programs have delivered helps explain why servitization adoption is increasing. Infosys Consulting research examining the returns on servitization investments indicates that these benefits 1) are sizeable; and 2) extend well beyond revenue gains; they include:




Achieving those benefits depend on numerous factors, perhaps the most important of which involves selecting the right servitization model for the company to achieve its objectives.

# Most Common Models

**1. Operating Services:** This model involves services covering the entire operations and lifecycle of products; specific services typically include lifecycle management solutions, scheduled installation and up-grade services, design and development of products, maintenance, and replacement services.

**2. Value Added Services:** These offerings typically include consulting and training services, customization of products and services, the offering related products/services, and other specialized services.

**3. Service Contracts:** These services cover contract management, product extended warranties, claims management, and related services.

**4. Financial Services:** This includes financial assistance and leasing services for equipment purchase and/or lease.

**5. Ad Hoc Technical Services:** This model includes after sales services covering repair services, technical support and assistance, and field service.

# Understanding the Enablers

**Misperception:** *Developing a servitization program requires the right technology, processes and skills.*

**Reality:** *The most effective servitization planning efforts also address the interplay among a wide number of enabler factors, including clients' familiarity with service contracts, the manufacturer's ecosystem of external partners, existing intellectual property assets, the quality of cross-functional collaboration within the manufacturer and more.*

Servitization programs deliver specific offerings against long-term contracts. The ability to continually satisfy those terms over time depends on the efficacy of manufacturing firm's service-related capabilities. In most cases, these capabilities must be built from the ground up or accessed through new relationships. As a result, one of the primary aspects of the planning phase involves developing an understanding of all the enabling components of the servitization capability.

## Collaboration at the core

These enablers are numerous and varied in nature; they include customer relationships, overall financial health, systems integration, accounting capabilities and equipment reliability. Collaboration – between manufacturers and customers, between the manufacturer and external partners, and among numerous internal parts of the business – also features prominently in the following enablers:

**Strong customer relationships** – Customer relationships are the foundation of the long-term servitization contract.

**The ability to link products to services** – The connectivity between a manufacturer's service and production functions marks one of the most critical enablers of servitization success. Creating and sustaining this link requires a combination of data management, systems integration, business process adjustments and new forms of cross-functional collaborations.

**Reliable equipment** – Highly reliable equipment enables more efficient upkeep management.

**A broad range of skills** – The breadth of talent required to operate a servitization program is substantial. Data management, relation-based sales and contract management expertise are especially important among the new skill sets manufacturers need to staff and develop, or access through external partners.

**Customer insight and responsiveness** – Manufacturers must possess a comprehensive and nuanced understanding of customer requirements and provide perspectives on how the customer can better utilize the equipment or increase the results provided by operating the equipment.

**Knowledgeable customers** – Servitization programs are also new to many customers who will need to make adjustments of their own to adapt to new relationship dynamics. The more knowledge customers have concerning service contracts and the notion of lifetime value, the smoother those adjustments tend to be made.

**Financial stability** – Most servitization programs require a significant upfront investment to drive long-term profit gains. This capital must be available.

## Organizational Change is Critical to Success

That list of enabling elements is necessary but not complete. Most servitization programs require changes within many organizational functions of the business. To satisfy the need for new skill sets, talent management strategies and practices need to be altered. Accounting for services delivered according to long-term contracts pose new challenges for finance and accounting functions accustomed to accounting methods for product-based revenue streams.

In addition to driving specific changes within many areas of the business, servitization also requires new forms of cross-functional collaboration. The following areas tend to require significant changes during the operationalization of a new servitization program:

**Information technology (IT) and data management throughout the organization** – Without an effective data management capability, servitization programs are doomed to fail. This capability is comprehensive given the vast amount of different data (e.g., master data, customer master data, material master data, equipment master data, bill of materials data, and much more) that must be accessed, integrated, analyzed and shared.

**Sales and marketing** – The shift from selling products to selling a service outcome can be profound. This challenge can be exacerbated when an OEM sells through dealer networks or other partners.

**Talent management** – Recruiting, training and development, and talent sourcing approaches need to be adjusted to access the new skill sets that servitization programs require.

**Partner ecosystem management** – No matter their size, few, if any, manufacturers possess all of the capabilities – or enough capital on hand to build all of the capabilities – needed to operate a servitization program. As such, manufacturing leaders should identify what partners are needed to deliver services involving field technicians, data analytics, logistics expertise and more.

**Accounting** – Depending on which servitization model a manufacturer deploys, new approaches to managing assets may be needed. These changes frequently alter how equipment is financed, how depreciation is managed and when revenue is recognized. Within large manufacturing corporations, different legal entities may sell services to each other, which affects transfer pricing.

## Seven Inhibitors of Effective Operationalization

During the planning phase, manufacturing leaders should be aware of obstacles that routinely hamper operationalization efforts. By assessing inhibitors that are likely to arise in advance, plans can be made to limit their impact. Contract management missteps feature prominently in the following list of common pitfalls:

1. Insufficient up-front capital
2. Insufficient intellectual property to capitalize on machine-to-machine technologies
3. Easily replaceable products that discourage customer interest in an advanced service model for that product
4. An insufficient range of technology, which discourages customer interest in long-term contracts
5. Institutional reluctance, within client company, to enter into outsourcing-type contracts
6. Unprofitable contract terms caused by a lack of understanding concerning underlying economics of services agreements
7. Unreliable or unusable contracts that contain too many customized terms for a specific customer (due to a lack of contract management expertise)

# Key Considerations

**Misperception:** *An operationalization plan can be created once a model has been selected and key enablers have been identified.*

**Reality:** *Attention to several additional considerations – such as the manufacturer's reputation, potential legal and compliance issues, and internal knowledge of advanced technologies – play a key role in determining the success of a new program.*

Beyond selecting a good services model fit and understanding all of the enabling components of servitization, other success factors have materialized as a result of hard-learned lessons experienced by manufacturers that have launched this capability. By addressing the following questions early in the planning process, manufacturing leaders increase their odds of success:

**How will we build the operating model to deliver this service?** Addressing this overarching question keeps leaders and project teams focused on the scope and nature of the changes – to both structure and organizational culture – required to deliver against newly created service contracts. Developing a servitization program in most OEMs necessitates a shift from a transactional focus to a much more relational mindset. In services-based organizational cultures, customer relationships are built over time via continuous nurturing.

**What are ALL of the internal capabilities we need to succeed?** The most successful servitization approaches build off of the supporting pillars of data management and customer service to create long-lasting relationships with customers. Technology needs to be embedded in equipment. Call centers and/or other forms of service touchpoints need to be in place. Adjustments, some major, need to be made to other information systems, accounting practices, risk and compliance requirements along with dozens of other significant integrations and recalibrations with existing operations. Some of these capabilities already exist; others do not. Some of these capabilities should be developed in-house; others should be obtained through third parties.

**How advanced is our current understanding and use of emerging technologies?** This is an important consideration from a time-to-value perspective. Technologically mature firms typically get servitization programs up and running quicker than less tech-savvy organizations, and they start generating returns on these investments earlier as a result. This should influence whether manufacturers decide to build or buy new technology capabilities.

**How do customers define our brand?** For many manufacturers, selling a service offering represents a radical departure from traditional customer interactions. How well customers respond to this offer depends on how they view the company and its reputation. Trust coffers take years to fill, and some new (or new to the market) manufacturers may experience more resistance from customers. A strong reputation for delivering on product-related promises can help manufacturers negotiate more favorable rates and terms with customers. A strong reputation can assist internal change management efforts as employees also take note when their company keeps its promises. While a less valuable brand or a less established reputation do not represent insurmountable obstacles, they should be recognized and addressed.

**What is the market potential for our new services – and do these services address real and ongoing needs?** By nature, a servitization model addresses customer needs via built-in services and ongoing support. This offering should build and strengthen a company's brand without requiring the company to assume too much risk or exposure. Beyond its market potential, a successful servitization model addresses a concrete, measurable customer demand. Making this determination requires a clear understanding of what value means to customers as well as a service that continuously delivers beyond-the-product value.

**How strong and agile is our partner ecosystem?** Due to the intricacy of delivering local hands-on service, the size of some markets and the new skill sets required to fulfill contractual terms (e.g., field service technicians), manufacturers may need to forge long-term partnerships with vendors relatively quickly.

**What legal and compliance requirements do we need to address?** This is a crucial consideration for manufacturing companies that work concurrently with multiple national governments. In these situations servitization opportunities should be evaluated more carefully and comprehensively to gain a clear understanding of legal and compliance risks.

# A Pragmatic Answer to How

For many OEMs that have for years excelled at engineering, building and selling products, the notion of moving to an innovative service model centered on customer relationships and lifetime value can seem as daunting as a moonshot. It should: servitization requires significant upfront capital investment, extensive planning and the orchestration of a high number of new and existing capabilities, skills and relationships.

The best way to get this type of complex endeavor off the ground is a highly pragmatic approach to managing capital, risk and time. By working through the questions, options, challenges and considerations identified here, manufacturing leaders will be well-positioned to start building a new operating model that elevates customer relationships – and financial returns – over the long term.

# About the Experts

**Shanton Wilcox – Partner, Manufacturing Practice (U.S.)**

Shanton is a U.S-based partner focusing on applying advanced operations capabilities to manufacturing and service organizations to integrate and streamline value chain operations. He brings a strong record of success with a deep set of experiences across several industries, including aerospace and defense, automotive, high tech and consumer goods. Shanton joined Infosys Consulting in 2016 after prior leadership roles at Deloitte, Ernst & Young and Capgemini Consulting, where he was the North American lead for their digital manufacturing practice. He is a frequent publisher and conference speaker, and has been featured in industry journals like SupplyChainBrain, Logistics Management and CSCMP's Supply Chain Quarterly. He is also the lead contributor to the Infosys Consulting report, State of Logistics Outsourcing study.

**Rafi Billurcu – Partner, Manufacturing Practice (Europe)**

Rafi Billurcu has been with the organization for over 11 years and leads our manufacturing practice in the UK and Nordics. He is responsible for some of our top accounts in the region, including leading brands KONE, Volvo, Honda and SKF. Rafi has over 22 years of experience in the consulting industry, having held various leadership roles at PwC, IBM and HCL. Rafi is a frequent contributor to our firm's digital platforms and is regularly featured in top industry publications. He is also a sought-after speaker at industry and client events.

# About Infosys Consulting

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# Notes


[1] **Rolls-Royce Holdings plc Annual Report 2017:**
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