REAPING THE RECURRING BENEFITS OF INDUSTRY 4.0

A manufacturing executive playbook for business model transformation towards new revenue streams

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1. EXECUTIVE SUMMARY

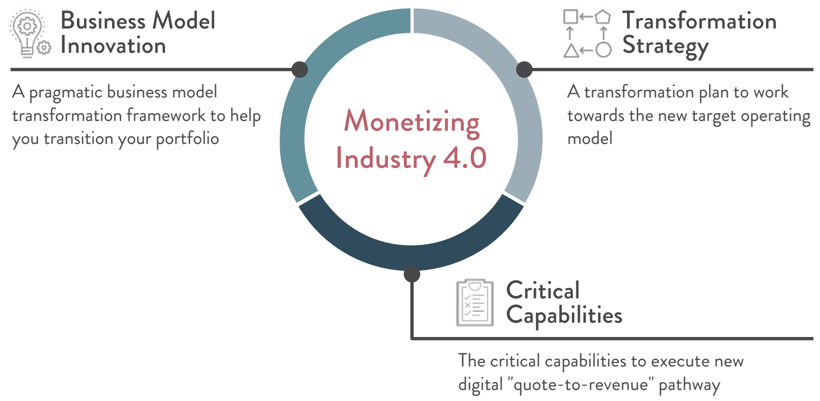
Manufacturers are embracing a brave new Industry 4.0 world by embarking on ambitious digital transformation programs. For the most part, such digital transformation initiatives are viewed as an opportunity to make significant improvements to the company bottom line by harnessing technology for optimization, efficiency and cost saving. Yet the most transformative opportunities will come from business model innovation, with far-reaching impacts on the topline. This requires a mindset shift around value creation and capture – one that ought to be pioneered by industry leaders.

The market for predictive maintenance, for example, is expected to expand to about USD 11 billion by 2022 – a topic to which 81% of firms are currently devoting time and resources. Around the same number of firms believe that it will lead to strong growth of their service business in the future, replacing a significant amount of hardware product sales revenue[1].

Companies that have successfully made this business model transition have reaped its rewards: according to the Subscription Economy Index (SEI)[2], subscription businesses are growing 5-9x faster than S&P 500 companies. The risk of remaining in status quo is real: 90% of Fortune 500 companies have vanished since 1955. More worrying still, at current churn rates, nearly 50% of today's Fortune 500 companies on the S&P 500 will no longer exist in the next 10 years, at risk of being wiped out by digital disruption[3].

Business model innovation in the Industry 4.0 age is fraught with complexity, but, if executed successfully, can unlock new value pools, while enabling new recurring and predictable revenue streams. Software companies of the likes of Adobe and Symantec have already paved the way, with many successful examples of business model shifts from traditional license and maintenance model to a subscription-based model.

In fact, since Adobe's transition to the cloud five years ago, its share of recurring revenue has jumped from 19% to 70% today, with a corresponding 370% increase in its share price[4]. Even within the hardware space, leaders such as Schneider Electric, MANN+HUMMEL, Thales, CAT, and Siemens are already transforming their business models, and, as a result, are seeing increased revenue, new market opportunities, etc. They are also preparing themselves to fight back against future disruption.



Business model transformation is a long journey that deserves ambitious targets: we believe that each company should aim at reaching 20% penetration of new equipment and services sales with recurring ("as a Service") solutions within a 5-year time horizon.

1. Roland Berger (2018). Predictive Maintenance – From data collection to value creation
2. A study of long-term Zuora customers' revenue growth compared to S&P 500 revenue growth
3. Innosight 2018 Corporate Longevity Forecast
4. "Adobe earnings: $100 bn valuation to get its first big test", Market Watch, March 2018

However, the transition to recurring revenues for industrial companies will be much more challenging and complex, in terms of product/market fit (or solution/market fit should we say!), revenue, cash flow and even balance sheet implications.

It is imperative, therefore, to have a clear vision, but remain flexible on implementation. Indeed, the more innovative, disruptive and uncertain the expected outcome, the more agile and flexible the approach needs to be.

Given the reality of physical goods, and therefore the absence of comparables, manufacturers are in need of a "how-to" guide that enables an understanding of the business model transformation required, a step-by-step plan to be followed for transformation, and the critical capabilities required to undertake said transformation. This whitepaper presents a pragmatic playbook for monetizing opportunities arising from Industry 4.0 for business leaders. It's a play-by-play guide that outlines the critical capabilities required to make a business model shift and how to approach a transformation plan.

2. INDUSTRY 4.0 AND THE DILEMMA FOR MANUFACTURERS: DISRUPT OR BE DISRUPTED

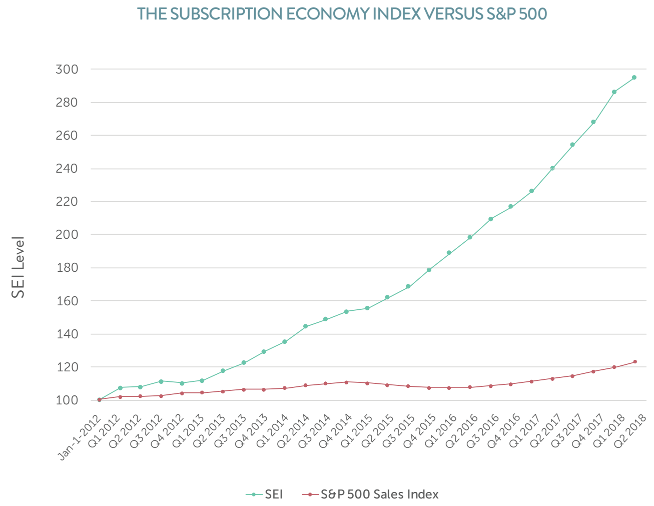
We are seeing paradigm shifts in all manner of industries. In media, traditional formats are being rendered obsolete by subscription streaming services such as Spotify and Netflix. In software, we're seeing the demise of software licensing in favor of SaaS models.

And perhaps most strikingly, we're witnessing automotive giants make the shift from car ownership to mobility services. For example Volvo recently announced that they're aiming for 50% of their cars to be driven on subscription by 2025, creating 5 million direct consumer relationships.

Manufacturing is not immune to this shift. Industry 4.0, or the industrial application of digital transformation – interconnecting production, logistics and service processes–is heralding a new era for manufacturing industries.

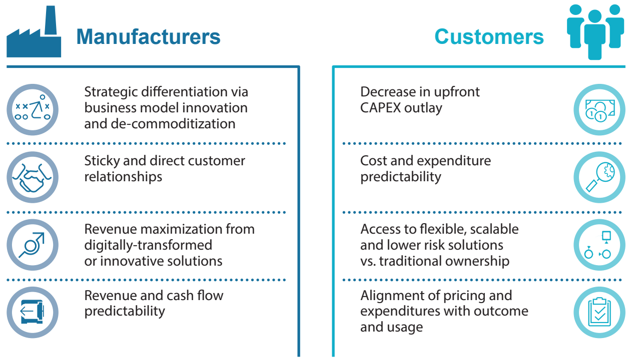
> ***"Despite the high level of interest and investments, the reality is that most companies are just getting started. Most companies tend to stuggle with the process of designing digital business models, with the development of truly differentiated offers, and with the monetization and pricing of these offers."***
>
> *Stephan Liozu, Chief Value Officer, Thales Group*

> ***In the future, 50-60% of the value of a car will consist of digital devices and tools, and 20% of batteries. So if we're not careful, we'll only be responsible for the windows, seats and wheels."***
>
> *Peter Altmaier, Federal Minister for Economic Affairs and Energy, Germany*



> "What happens in consumer space makes its way into the business workplace. The sharing economy is becoming more and more widespread in the B2B market. Businesses are more inclined towards subscription-type services than they were four or five years ago."
>
> Pascal Layan, COO, BNP Paribas Leasing Solutions

> A fundamental aspect of moving to subscriptions is a balance between technology innovation and business model innovation. That's a very interesting area for us because it's about changing the experience of the customer."
>
> Cyril Perducat, EVP Digital Services and IoT at Schneider Electric



This new era brings the possibility of greater flexibility in manufacturing, higher uptime / output, increased process stability and more efficient use of resources, among others.

Change is not just imminent, it is already here. Industry pioneers are diversifying away from traditional product-centric offerings and exploring new and alternative business models that are outcome-based or usage-driven, often offered as subscriptions. Those that have successfully executed these strategies are reaping the benefits – **growing 5x faster than S&P 500 companies.**

THE REWARDS OF BUSINESS MODEL INNOVATION[1]

For manufacturers, Industry 4.0 is all about this win-win: creating more monetization opportunities while improving the customer experience.

Changing the customer experience has the potential to yield great rewards. For example, since making the shift from a product-led solution to a suite of services, Hive (a leader in smart home technology whose British parent is the multinational utility Centrica, which now also owns British Gas) has seen a **70% surge in their customer numbers.**

OUTCOME OR USAGE-DRIVEN MODELS: A WIN-WIN SITUATION FOR BOTH CUSTOMERS AND MANUFACTURERS

While there is consensus on the disruptive impact of Industry 4.0 and the need for change, **only 14% of manufacturers say they have created go-to-market IoT strategies[2].**

2.1. DRIVING FORCES BEHIND THE GROWTH OF INDUSTRY 4.0

The Industry 4.0 ecosystem is a wide and complex set of technologies meant to interconnect and disrupt businesses – ranging from digital prototyping to self-optimizing systems, cobotics, autonomous vehicles, and predictive maintenance.

1. The Subscription Economy Index™ (SEI), is a landmark report that tracks the rapid ascent of the Subscription Economy, based on anonymized, aggregated, system-generated activity on the Zuora platform, reflecting the growth metrics of hundreds of companies around the world and across a wide range of industries.
2 PwC (2017). Monetizing the Industrial Internet of Things

TECHNOLOGY MEGATRENDS DRIVING DEVELOPMENT OF INDUSTRY 4.0

INTERNET OF THINGS (IoT)

WHAT

A network of physical objects that contain embedded technology enabled to communicate and sense or interact with their internal states or the external environment - "Industrial IoT" is its industrial application

USE CASES

Predictive maintenance, vendor asset monitoring, supply chain integration/optimization, downtime reduction, product/system optimization

MARKET SIZE

2016	2024	Growth rate
$1 400 bn	c. $2 900 bn	20-30%

"It's not just about having our phones or our enterprise applications connected and operating on subscription models. Now it's the big machines"
Gytis Barzdukas, VP at General Electric Digital

ARTIFICIAL INTELLIGENCE

WHAT

Computer systems able to perform tasks normally requiring human intelligence, such as reasoning, learning or planning

USE CASES

Autonomous industrial robots/cobots, defect detection using machine-vision, smart manufacturing, process optimization

MARKET SIZE

2018	2025	Growth rate
$4 bn	c. $200 bn	50-60%

"All of this information coming off machines, we now can put analytics on it, and provide really predictive insights for our customers to run the business"
Tom Bucklar, Director of IoT & Channel Solutions at Caterpillar

CLOUDIFICATION & API

WHAT

Migration of a service to the Internet (the Cloud) – generally referring to traditional applications migrated from local installations to web-based equivalents

USE CASES

Cloud native business, e-commerce and mobile applications

MARKET SIZE

2018	2020	Growth rate
$175 bn	c. $200 bn	20-30%

"We believe offering YuniquePLM In the Cloud at an affordable monthly rate will remove competitive barriers between large and small companies and empower our community of users to achieve optimum results"
Mike Elia, CEO, Gerber Technology

BLOCKCHAIN TECHNOLOGIES

WHAT

Decentralized data transfer and storage technology using a chronological chain of data blocks that cannot be manipulated, providing complete transparency and trust in the data exchange process IoT data transactions

USE CASES

Supply chain management and digital product memory, smart contracts, marketplace for IoT data transactions

MARKET SIZE

2018	2023	Growth rate
$2 bn	c. $20 bn	70-80%

"TradeLens uses blockchain for the secure digitization and transmission of supply chain documents – it will generate tremendous savings and enhance global supply chain security"
Peter Levesque, CEO Modern Terminals

2.2. EMERGENCE OF NEW VALUE CREATION LEVERS

Industry 4.0 is driving a mindset shift around the way companies and industry leaders think about value creation, requiring them to adapt their business models accordingly. The traditional model of value creation relies on the identification of lasting customer needs, addressed though an optimized manufacturing solution.

New business models leverage Industry 4.0 mega-trends to invert this traditional logic: **products are no longer standalone and pushed through a multi-channel approach to the end-customer, but are instead dynamic solution offerings that revolve around the consumer.**

EVOLUTION TOWARD DYNAMIC BUSINESS MODELS CENTERED AROUND THE CUSTOMER

Traditional business models used to focus on getting products to market and selling the maximum number of units. Manufacturers did this by getting their products into as many sales and distribution channels as possible. The entire model cascaded from the product itself.

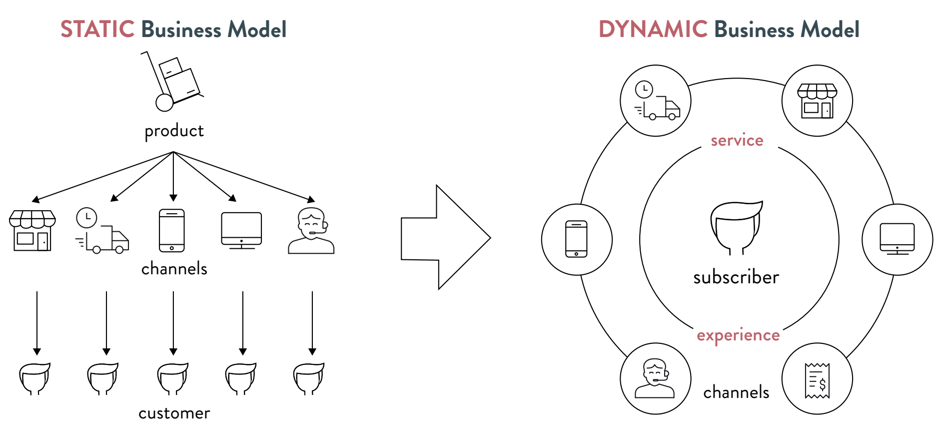
Today's dynamic business models start with the customer. Companies recognize that their customers spend time across many channels, and wherever those customers are, is where their needs need to be met. The more information that can be learned about a customer, the better positioned manufacturers are to serve their needs, and the more valuable that relationship becomes. That's digital transformation: the move from a linear transactional model to a circular, dynamic relationship centered around the subscriber.

Future business models will likely be based on recurring revenue, or subscription-based business models, to maximize value creation. This shift to recurring revenue impacts business fundamentals and functions from marketing to finance, IT to product development, sales to engineering.

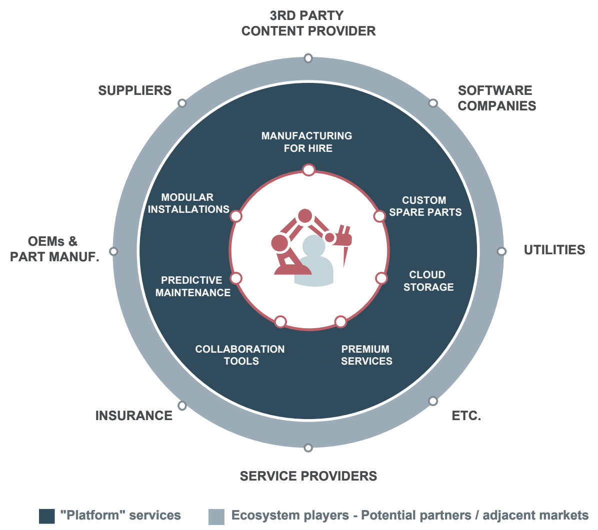
IMPLICATIONS OF A BUSINESS MODEL SHIFT ON BUSINESS FUNCTIONS

Tailored solutions and customization have long been considered rare and expensive in manufacturing where high-volume, mass produced goods are the dominant model. The Subscription Economy moves us away from the logic of maximizing economies of scale. Instead, greater connectivity enabled by cloud technologies, IoT, platform offerings and so on, enables the business to have a much wider reach and address customer needs in real time through constantly up-to-date solutions.

SUBSCRIPTION BUSINESS MODELS ARE DYNAMIC



RETHINKING THE MACHINE AS A PLATFORM SOLUTION RATHER THAN A STANDALONE PRODUCT



2.3. FUTURE PROOF BUSINESS MODELS FOR THE INDUSTRY 4.0 AGE

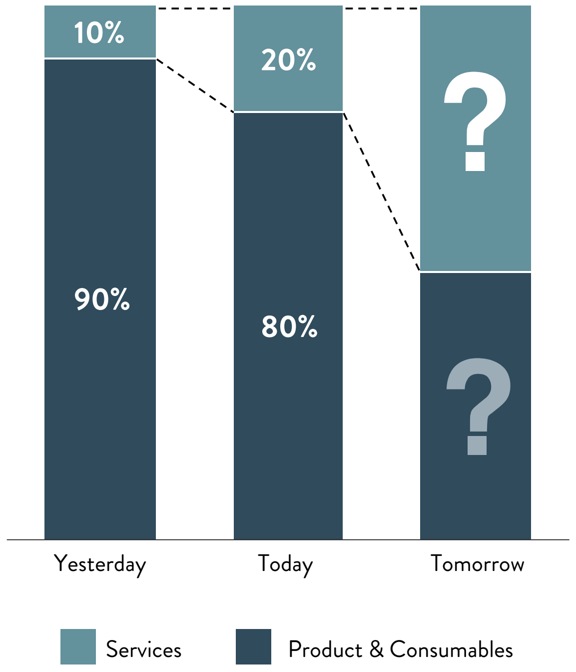
This shift to flexible or subscription-based business model is key to adapt manufacturing companies to the new reality of Industry 4.0 and prevent challengers from entering the market and capturing value share.

The development of Industry 4.0 – and especially the expansion of IoT – is expected to create new value pools, based on data collection, pay-by-usage models, or use of platforms. This could have dramatic implications for a company's business portfolio. In Germany, the heartland of mechanical and plant engineering, **80% of revenue is generated by the sale of new equipment and 20% by services** – but that 20% accounts for 60% of profits. In the future, these new value pools are expected to grow further.

> *By 2020, all new entrants and 80% of historical vendors will offer subscription-based business models."*
>
> *"Moving to a Software Subscription Model", Gartner, 2018*
>
> *The prospects for pure hardware suppliers are not good in competition 4.0. Fewer possibilities for differentiation will lead to declining margins and cutthroat competition. Unique selling points are really only possible through innovation in the business model."*
>
> *Roland Berger COO Insights, 2016*

	FROM	TO	
MARKETING	Branding	Experience	A shift from one-time transactions based on selling branded products to selling **outcomes and experiences**, while developing **deep relationships** with customers
SALES MODEL	One-time transactions	Deep ongoing relationships	
SALES	Selling products	Selling outcomes	
PRICING	'Cost plus'	Value-based pricing	A shift from cost-plus pricing with unit-margins to **customer lifetime value** profit with a **dynamic, value based pricing** *Section 4.2.2. provides an in-depth look at pricing models and strategies for transformational models*
PROFITABILITY	Unit margins	Customer lifetime value	
PLANNING	Backward-looking statments	Forward-looking metrics	A shift from backward-looking financial statements to **forward-looking revenue**

BOTTOM LINE: A business focused on delivering efficient, consumption-based services, instead of shipping the next unit



NEW VALUE POOLS AND THE EVOLUTION OF BUSINESS PORTFOLIOS

These new value pools have not yet been captured – but it will not be long before newcomers with greater agility make their move. The examples are all too familiar: disintermediation by the likes of Airbnb, Booking.com, or Uber...

Yet, not all established players have been pre-empted by younger, pure-player rivals or direct competitors. In the software industry that has seen a full steam shift from a license and maintenance model to an as-a-service model, Adobe stands out as a notable example. Adobe customers had long been accustomed to a certain business model – boxed-licensed software with 18-month launch cycles and high upfront costs. In 2013, Adobe scrapped its software disks and upgrades, moving its Creative Suite software to the Cloud and charging customers a subscription 'monthly access' fee ranging from $9.99 to $52.99 per month.

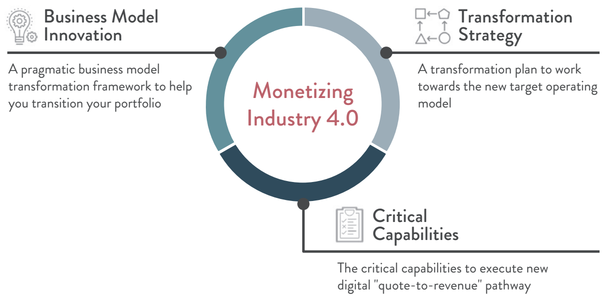
The results speak for themselves. **Since Adobe's transition to the cloud five years ago, its share of recurring revenue has jumped from 19% to 70% today, with a corresponding 370% increase in its share price**[1].In addition to recurring revenues, it also resulted in lower sales transaction and monitoring costs – another reason why Adobe today commands close to 30% operating margins. Despite the ubiquity of similar models in the software industry today, it was at the time considered a radical pivot.

Unfortunately, the truth is that this kind of innovation is notoriously difficult for leading, established companies. To complicate matters further, manufacturers have a physical goods reality and cannot be as bold as an Adobe. Paradoxically, they cannot afford to wait either, and must move quickly to prevent a loss in value captured and fully exploit the monetization opportunities afforded by Industry 4.0. As a result, we built this whitepaper as a pragmatic playbook based on extensive experience of the Subscription Economy with our customers. It's a play-by-play guide that outlines the critical capabilities required to make a business model shift and how to approach a transformation plan.

2.4. THE PLAYBOOK AND THE PATH TO TRANSFORMATION

This whitepaper presents a pragmatic playbook to thinking about business transformation, leveraging the framework hereinbelow.

A PRAGMATIC PLAYBOOK TO MONETIZING INDUSTRY 4.0 OPPORTUNITIES AND THE PATH TO TRANSFORMATION



1 *"Adobe earnings: $100 bn valuation to get its first big test", Market Watch, March 2018*

CASE STUDIES

HOW A 93 YEAR-OLD COMPANY COINED THE AGE OF SMART IRON

65
FORTUNE 500

Already dominating as the world's largest equipment manufacturer, Caterpillar is looking to its Digital Vision to drive transformation. The company is capitalizing on the advances being made in IoT by enabling customers to leverage data from their machines, optimize the use of their fleets, and lower the total cost of ownership. To do this, the manufacturer is producing machines with integrated sensors, and retrofitting older models to gain as much data as possible. Caterpillar is breaking new grounds though acquisitions, venture capitalist investments and in-house digital groups

SUBSCRIPTION PORTFOLIO

Smart Machines

Wide range of connected industrial equipment including excavators, dozers, trucks, loaders and more

CAT Connect

Technology and services leveraging data from onboard sensors to help optimize equipment management, safety, sustainability, and productivity

TRANSFORMATION HIGHLIGHTS

Invest in McRock Capital

A venture capital fund manager that focuses on industrial IoT enabling Caterpillar to remain at the forefront of new technologies

Acquired Yard Club

A peer-peer rental platform that allows customers to share and manage heavy equipment

Repositioned Digital Groups

Aligned all internal digital organizations including data analytics, equipment management, customer experience and Cat Connect technologies under a new head of Digital Enabled Solutions

Caterpillar has the largest connected industrial fleet in the world, with over 500k connected assets on the field

500 k
Connected Assets

OUT OF A TOTAL OF NINE BUSINESS SEGMENTS, SIEMENS HEALTHINEERS HAS THE SECOND HIGHEST EARNING REVENUE AT €14B

66
FORTUNE GLOBAL 500

Siemens Healthineers, a medical technology company, is transforming the medical industry by empowering healthcare providers through a variety of powerful machines and services, one of which is Teamplay, a data-driver and cloud-based collaboration app that allows for the exchange of data between healthcare professionals so they can make the most informed decisions. In March of 2018, Healthineers debuted as a separate IPO in the Frankfurt Stock Exchange and became the second largest IPO in Germany since 2000

SUBSCRIPTION PORTFOLIO

Imaging & Therapy Services

Siemens' bread and butter business now has a range of services that help customers with financial planning, site planning utilization management and more

Laboratory as a Business (LaaB)

Consulting services that leverage lab capabilities, informativs, internal expertise and more to help customers achieve business objectives

Option and Upgrade Services

A suite of software applications and packages for expanding the lifespan and capability of Siemens products while also reducing total cost of ownership

TRANSFORMATION HIGHLIGHTS

Deploy AI for Efficiency

Leverage data and artificial intelligence for system integrations to help automate and standardize complex diagnostics in order to address the needs of patients

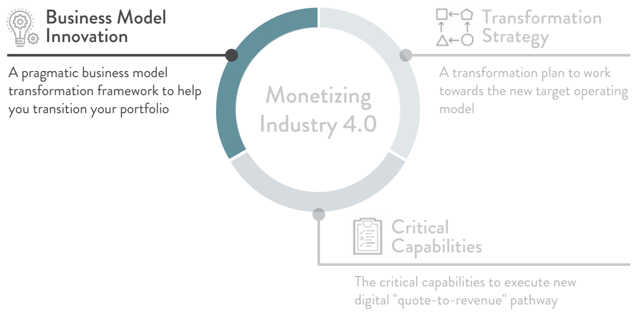
Empower with Digital Services

Optimize the "patient journey" by providing healthcare professionals with tools like Teamplay to allow them to be more efficient and informed

Revenue in fiscal 2017 of €13.8 billion, of which more than 55 percent is recurring

€13.8B

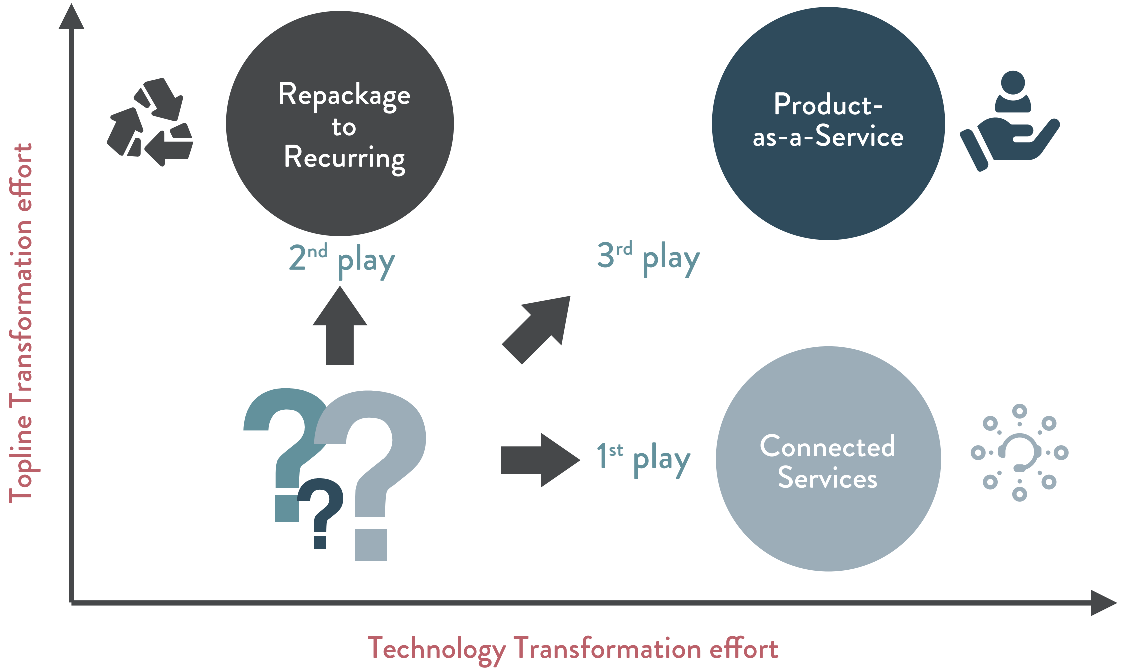
3. MAKING THE FIRST MOVE: A PHASED APPROACH TO BUSINESS MODEL INNOVATION



Shifts in the business model should not be seen as incongruent with the current model as one does not necessarily replace the other. Rather, newer business models can be implemented based on a portfolio analysis and subsequent mapping that determines the best strategy, by product, end client or geography – combining thus both current and new business models. Such a transition will also allow businesses to capture the full benefit from consumers, and to optimize the portfolio offering.

However, the transition is not without its tradeoffs, as there will be direct impacts on revenues, cash flows, and the balance sheet. How should you navigate these tradeoffs? For those companies that are successfully navigating the shift from products to service, we generally see three main plays in action: **connected services, repackage to recurring,** and/or **product-as-a-service.**

3-PLAY FRAMEWORK FOR NAVIGATING PORTFOLIO TRADEOFFS



3.1. FIRST PLAY: NEW CONNECTED SERVICES

THE PLAY

A business model transformation through the sale of new connected services enabled via connectivity, cloud or AI – positioned on top of hardware/machine – i.e. as an overlay

TYPICAL USE CASES

- **Predictive maintenance:** data collection and advanced analysis (Bid Data, AI) to track and early detect anomalies in machines to optimize cost/reduce downtime.
- **Cloud Shared Calculation & Optimization services:** development of services that calculate and optimize cloud required capacity and use for multiple applications for a customer
- **Vertical/expert cloud storage (settings, templates, machine's output, etc.):** optimization of cloud services for a specific vertical (e.g., a specific industry) or specific application use, with specialized functions and options that best meet industry-use and specifications
- **Advanced reporting & data export:** collection of data from different sources and analyses to automatically create reports based on predefined formats
- **Notifications, remote surveillance and actionable alerts:** remote monitoring of machines and equipment through the installation of devices to collect data and with the possibility to setup alarm thresholds to be alerted when unsatisfactory conditions are seen
- **Device Management and Enablement software (PLM, etc.):** software allowing customers to centrally configure and manage different devices (including data integration, automatic updates, enablement, etc.) throughout the entire lifecycle of a device
- **Vertical Business Process SaaS:** Business process management software including various methods to model, analyze, optimize and automate business process, delivered as software services (SaaS) for a specific industry benchmark & data services: storage space provided to customer to save their data. Combined with data visualization tools, it provides an abstraction layer from the details of stored data (data virtualization provides the storage platform while data services do the programmatic work of retrieving data from the platform). Benchmark services can also be added to compare with other data set
- **Extensibility (APIs, SDKs, 3rd Party Connectors, etc):** enabling the extension of a model by using standardized tools such as application programming interface (e.g. API), or software development kit e.g. (SDK)

BOTTOMLINE

Easy to start with and limited risk on the company's financials - relevant incremental approach towards the "Product-as-a-service" play

PROS	CONS
- Pure new revenue stream (no/limited cannibalization) - High margin contribution - Increased stickiness - Can be sold to net new and installed base – and even on top of competitors' hardware	- Requires connectivity (not a fit for all segments) - Limited revenue impact while being a new value proposition, and therefore requires finding ways to mobilize and ramp-up sales team

EXPERT PoV

"If you currently sell products that collect some sort of data (or could be retrofitted to do so) and there is someone out in the world who would find that data valuable, IoT is a new revenue source for you"

Scott Pezza, Blue Hill Research

"First there was the consumer internet, and then the enterprise internet, and now we're moving into the third generation: the industrial internet. It's not just about having our phones connected or our enterprise applications connected and operating on subscription models. Now it's the big machines"

Gytis Barzdukas, VP at General Electric Digital

3.2. SECOND PLAY: REPACKAGE TO RECURRING

THE PLAY

A change of business model that consists of transforming historical transactional models into recurring and valuable business models

TYPICAL USE CASES

- **Maintenance services (e.g. % Bill of Material, per user, per employee ...):** range of services provided to ensure the effective operation of products and their renewal. It includes hardware maintenance, support services and software maintenance
- **Spare part recurring fulfilment (filter, etc.):** recurring delivery of spare parts for repeated replacement over a period, often automated. It can be used for products requiring periodic replacement or replenishment
- **Change from CAPEX to OPEX:** Sale of Hardware and maintenance thanks to a flat rental-like model (e.g. X€ per month for 3 years, Y€ per quarter for 5 years, etc.). Hardware is rented while there is a subscription for maintenance. Those products or services are therefore considered as operational expenditure (costs to daily run business operations). This explains why cloud services (considered initially as investment in computer equipment) transform CAPEX to OPEX
- **"SaaS-ification" of existing on-premise software (Historical X€ of license and Y€ of maintenance become Z€ of SaaS per year):** switch to a subscription model for the use of a software, considered "as-a-service", instead of buying a license. It often leads to cost savings and simplified integrations for clients

BOTTOMLINE

- Revive/boost an existing product/service (low sales, low coverage, etc.)
- Leverage it to connect associated hardware
- Define a distinctive strategy per segment: transactional or recurring

PROS

- Address market white space with limited investment
- Attachable connected services
- Good leverage to justify connecting associated HW

CONS

- Capital requirement and revenue impact over time
- Risks when customer compares one-time vs. recurring prices

EXPERT PoV

"At Arrow a customer is someone who buys a component or who buys a piece of technology that could make a data center. A subscriber is someone who is really interested in a relationship with Arrow."

Matt Anderson, Chief Digital Officer & President, Arrow Electronics

"When you look at what is flooring—it is building material. Either you do a one-time sale of building material (where there is a high pressure on margins) or you become a long-term solution provider [by selling a connected service]"

Jean-Sebastien Moinier, Head of FloorInMotion BU, Tarkett

3.3. THIRD PLAY: PRODUCT-AS-A-SERVICE

THE PLAY

A customer-centric approach in which the customer can subscribe for his specific needs, while the service provider owns the product through its lifecycle (design to recycling). In this case the solution was intended from its inception to be sold as a service, unlike the "Repackage to recurring" play

TYPICAL USE CASES

- **Security-as-a-Service:** subscription for the integration of a security service into an infrastructure. These security services often offer products such as anti-virus/malware or authentication
- **Network-as-a-Service:** provision of a virtual network service among the enterprise. It may include services such as Virtual Private Network (VPN, to extend a private network and the resources associated across networks, like Internet) or mobile network virtualization
- **Unified-Communication-as-a-Service:** cloud or "as-a-service" delivery model, including a wide range of communication and collaboration services and applications. The features, very flexible and scalable, can be enterprise messaging, online meetings or team collaboration, for example
- **Payment-as-a-Service:** group of connected payment options through interfaces. It enables the company to receive secured online payments
- **Energy-as-a-Service:** management and guarantee of one or several elements of a customer's energy portfolio (e.g. energy supply, use, management). For example, if the building uses more energy than expected, the Energy-as-a-service provider pays for the difference, but if it uses less, provider profits. Sometimes energy portfolios are totally outsourced

BOTTOMLINE

- Very disruptive strategy to enter underserved/challenging segments
- Paves the way for new disruptive monetization models: outcome-based, asset-sharing, etc

PROS

- Disruptive & differentiative
- Very high stickiness
- Multiple waves of monetization of the asset
- Excellent leverage to justify connecting associated HW

CONS

- Capital requirement, revenue impact over time
- Asset lifecycle management
- Profitability analysis complexity

EXPERT PoV

"This is a way for us to test drive innovations. If all goes well, we see an opportunity to develop this in other areas."

Petra Sundström, Director of Innovation Management at Husqvarna

"The subscription economy can build your revenue base and margin over time as you build subscribers. It's a very appealing business model."

NCR Silver, Mark Sisco, Director of Business Operations

3.4. THE 3 PLAYS IN MOTION: TRANSFORMATION EXAMPLES

Schneider Electric

CONNECTED SERVICE:

What is the official name of the offer?

EcoStruxure Facility Advisor

What is the value proposal?

Ecostruxure Facility Advisor enables building owners and managers of small to mid-sized buildings to improve energy performance, manage smart maintenance processes, and ensure compliance and business continuity -- all while reducing OPEX. It is built on a cloud-based software platform with access to real-time performance that leverages the latest analytics technologies to turn data into actionable insights -- and it arms Schneider Electric's extensive business partner network with the invaluable capability to gain visibility into their customer bases to sell new services, or even hardware.

The EcoStruxure Facility Advisor is one of a number of expertise-based solutions built on top of the EcoStruxure platform, Schneider Electric's IoT-enabled open architecture. Ecostruxure connects over 1.6 million connected assets, is deployed in more than 480,000 sites worldwide, and is supported by 20,000+ business partners/system integrators.

Why transform?

This new digital solution works on top of existing or new hardware, and is vendor-neutral -- which makes it a natural fit for new over-the-top recurring revenue streams. EcoStruxure takes advantage of new monetization opportunities rather than being marketed as a one-time sale, or included in the cost of hardware.

What is the revenue model?

Sold via subscription -- can be purchased via self-service to configure a tailored customer bundle (e.g. depth of capabilities, type of connected object, number of connected objects, data plans, etc.) -- and even includes a free trial.

REPACKAGE TO RECURRING:

What is the official name of the offer?

Subscription Access (AVEVA + former Schneider Electric's industrial software portfolio). Note: Schneider Electric's industrial software business, and AVEVA have combined to create a new global leader in engineering and industrial software.

What is the value proposal?

AVEVA provides solutions to support customers in the capital expenditure phase of the asset life cycle, from conception, schematics, and detailed design and build through to asset decommissioning.

Subscription Access' objective is to satisfy the demands of today's manufacturing customers. Upfront traditional license costs are replaced with recurring payments spread over the term of the agreement, with the flexibility to «right size»/»pay-for-what-you-need» (e.g. roll-out strategy per plant, etc.). As a result, CAPEX are replaced with recurring OPEX, helping better align cost to value while providing more agility when requirements fluctuate. This lowers the total cost of ownership and accelerates ROI.

Subscription Access also bundles customer support and maintenance, and includes subscription-only features, such as the Unlimited Supervisory Server, to offer access to a virtually unlimited client base.

Why transform?

As an early adopter of a subscription-based model in the industrial software segment, AVEVA will increase their recurring revenue contribution by proactively improving affordability (making their offerings available to smaller or remote firms/plants that previously couldn't afford the CAPEX); removing friction in the sales process by offering the most appropriate buying options; differentiating from the competition through pricing model innovation; and increasing stickiness through the recurring dimensions of the offerings.

What is the revenue model?

Subscription model -- with different metrics depending on solution (e.g. yearly pricing per active user, etc.).

PRODUCT-AS-A-SERVICE:

What is the official name of the offer?

Televis Blue

What is the value proposal?

TelevisBlue is an innovative cloud-based monitoring system focusing on cold refrigeration use cases for small retailers. The purpose of this solution is to enable businesses to establish temperature control to guarantee food quality, while ensuring compliance and optimizing energy efficiency. TelevisBlue is a simple, plug & play via a pre-activated kit which includes 12 months of initial service subscription. The application is simply accessed and set up by the end user through the internet.

Why transform?

To differentiate through a verticalized, easy-to-buy one-stop shop to target white space in the market -- small and mid-sized retailers looking for digitization – instead of selling complex solutions with a distinct hardware and services buying process.

What is the revenue model?

Subscription pricing based on service level («Starter» or «Plus» plans, the latest which includes remote controller maintenance operations), number of resources to be monitored (from 5 to 500 and beyond), and number of operations on controllers (for «Plus» plan only). Can be bought by credit card in self-service mode.

Analysis based on public information.

THALES

CONNECTED SERVICE:

What is the official name of the offer?
Soarizon (still in MVP phase)

What is the value proposal?
Soarizon is a software-based digital platform from Thales for qualified and trusted drone operations. It is designed to transform the way unmanned air systems (UAS) are utilized across multiple sectors by providing a unified digital tool. Its objective is to reduce the time it takes to plan an operation, maximize the use of drones and allow drone users to fly their aircraft in a safe and regulated way – thus enabling the growth, scale, and wider adoption of drones in the industry.

Why transform?
As a leader in air traffic management, unmanned air systems (UAS), and digital security, Thales is merging together its capabilities. Thales' objective is to enter the commercial drone market, by launching an innovative software solution that combines end-to-end drone operations through a single, trusted platform.

What is the revenue model?
Pricing is a hybrid subscription/usage model that is still under development.

REPACKAGE-TO-RECURRING:

What is the official name of the offer?
Drone-by-the-hour – "Project Lydian"

What is the value proposal?
For quite a while, armies have been leveraging Unmanned Air Vehicles (UAVs), for what is referred to as "Intelligence, Surveillance and Reconnaissance" (ISR). The information they can capture has become critical in the theaters of operation. However, even for a small fleet, building infrastructure, developing training, and managing the logistics and maintenance is not only expensive but prohibitively time consuming. The British Army decided to leverage Thales' full service offer to supply and support unmanned air vehicles for a fixed hourly rate, creating an immediate and affordable air surveillance capability.

Why transform?
Armies are looking to substantially reduce capital expenditure and remove the need for the customer to fund updates. They also need rapid deployment, even if the customer has little or no infrastructure in place; the first UAV can be in the air and acquiring data within a few weeks. Changing the business models of existing drones enables wider market reach and differentiation in competitive deals. The project was so successful that it eventually clocked up more than 100,000 flying hours and 3.000 sorties.

Thales has taken the lessons it learned from Project Lydian to develop Watchkeeper, a new aircraft with superior multi-sensor technology that takes off and lands automatically, is fully autonomous, and can fly at 16,000 feet, gathering intelligence for 16+ hours at a time.

What is the revenue model?
Pay-per-hour (fixed hourly rate).

PRODUCT-AS-A-SERVICE:

What is the official name of the offer?
FlytLive

What is the value proposal?
Airlines are transforming their travelers' experience and opening up new monetization horizons thanks to in-flight WiFi connectivity. However, the required technology doesn't come cheap: antennas can increase drag and thus fuel costs, or aircraft needs to stay on ground for the system to be installed, for example. Thales wants to simplify airlines' digital transformation by proposing a turn-key solution with no upfront cost in which Thales provides infrastructure and connectivity while the airline provides the access to passengers.

Why transform?
Connectivity is a critical capability for airlines, especially to transform their customer experience while enabling new ancillary revenue streams. However, CAPEX is an issue for most airlines. First disclosed customer is Spirit, a leading carrier in the U.S., Latin America, and the Caribbean with more than 550 daily flights to 65 destinations. FlytLive will cover 97% of their routes when the entire fleet is retrofitted by summer 2019. Spirit will be the only Ultra Low Cost Carrier (ULCC) in the Americas with connectivity.

What is the revenue model?
Revenue sharing - Spirit will offer FlytLive's high-speed web browsing and streaming options to their end customers, starting with a price range in \$6-\$10, depending on route, speed, and demand. Targeted advertising revenue stream also to be expected.

Analysis based on public information.

Alcatel·Lucent Enterprise

CONNECTED SERVICES:

What is the official name of the offer?
Rainbow

What is the value proposal?
Rainbow is a cloud-based platform that enables critical additional collaboration services available to users and objects, regardless of their existing communications systems. It aims at optimizing employee, supplier and customer experiences, transforming the company to become borderless. As an overlay solution, Rainbow extends Alcatel-Lucent Enterprise's on-premise hardware solutions with capabilities like business process integration APIs & workflows, chat/audio/video/sms, screen & file sharing, bots and automation.

Why transform?
Alcatel-Lucent Enterprise is a world leader in communication solutions and hardware – but needed to differentiate from new "asset-less" entrants (GAFA) putting the market under high pressure. Building high added value cloud solutions to extend its footprint in order to defend its broad install base while creating new market opportunities was critical.

What is the revenue model?
Freemium & free trial acquisition model to accelerate digital acquisition, with a transformation from free-to-paid through added-value services (conferencing, access to APIs, non-PSTN in/outbound traffic, etc.).

REPACKAGE TO RECURRING:

What is the official name of the offer?
Network-on-Demand

What is the value proposal?
Enable CIOs to buy a high-performing network infrastructure (wired and wireless), deal with seasonality (peak of network demand) with smooth upgrades/scaling, and the peace-of-mind of an always-up-to-date solution, without the pressure of an expensive CAPEX upfront.

Why transform?
CIOs are required to reduce CAPEX while network usage is exponential. On the other hand, enterprise network infrastructure market is commoditized so business model innovation while reusing network components that exist on the shelf brings clear differentiation.

What is the revenue model?
Price per daily active connection billed monthly.

PRODUCT-AS-A-SERVICE:

What is the official name of the offer?
Vertical CPaaS solution

What is the value proposal?
Help customers to transform communication technologies into business value by aligning them with their critical objectives across each vertical (e.g. for retail: maximize sales opportunities by providing communications means for customers even when there's no sales assistant available in a given store section; hospital: simplify patient/doctor secured digital communications before/during/after hospitalization, banking: enable persistent multi-channel discussions between customer and bank advisor).

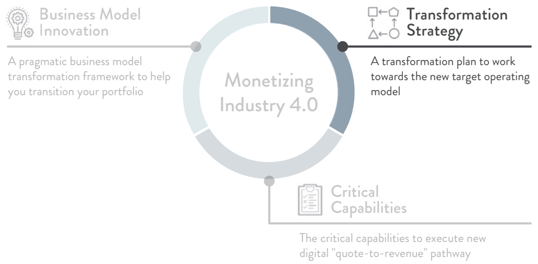
Why transform?
CXOs are looking for solutions to digitize their business models and processes. By providing verticalized and high added-value solutions, Alcatel-Lucent Enterprise can elevate their proposal, become business critical – leading to differentiation. Easier-to-consume and affordable solutions offered as subscriptions will enable lower-end customer segments to access technologies that they would not contemplate otherwise.

What is the revenue model?
Outcome-based pricing model for projects – linked to customer's operations and/or financials KPIs (e.g. per occupied room for hospitality, per additional sales for retailers, per "on time" passenger for airlines, etc.). Packaged subscriptions for specific customer segments.

Analysis based on public information.

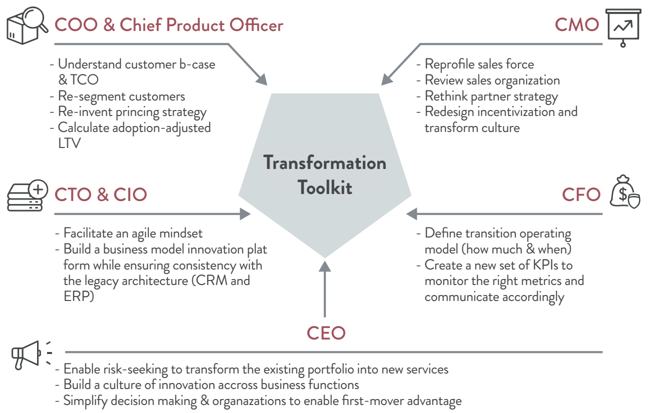
4. PUTTING IT INTO MOTION: THE TRANSFORMATION PLAN

Once the strategic direction has been set regarding the desired business model transformation and operating model, the real work begins.



Transforming the organization and business portfolio will impact key business functions at all levels.

THE TRANSFORMATION TOOLKIT



4.1. THE CEO PERSPECTIVE

Business transformation can only **succeed if there is a strong support and commitment by the management team.** In this context, **it falls upon the CEO to drive the transformation agenda** – an important burden that cannot be delegated. He or she ought to undertake the following responsibilities:

- Foster a culture of test and learn – accepting failure as long as it drives clear learning
- Ensure fair communication so all employees feel engaged and so as to encourage buy-in and prevent internal conflicts
- Create an environment of quick decision making
- Sponsor a team of transformation champions held accountable across the organization, with multi-disciplinary skills
- Communicate the new business transformation impacts and significance

5x High performing CEOs are 5x more likely than low performers to build a **culture of innovation** across every business function

3x High performing companies are 3x more likely to strive for **first-mover advantage**

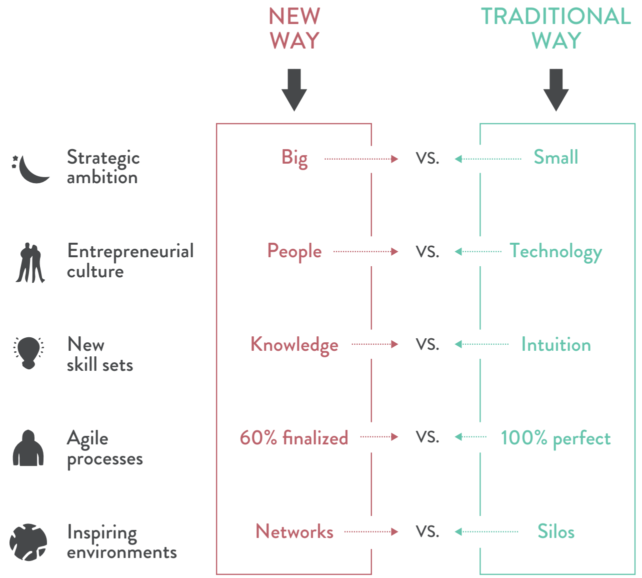
2x High performing CEOs are 2x more likely to report being **risk-seeking** compared to low performing CEOs

Source: CB Insights 'State of Innovation'

Numerous initiatives could be launched in support of these objectives, including, but not limited to:

- Create commitment ("Every move you make, everything you say, is visible to all" - Joseph M. Tucci, CEO of EMC, the US-based information storage equipment business)
- Put the right teams in charge of the change, while providing them with the right level of support ("If you want to go fast, go alone. If you want to go far, go together" – Al Gore, quoting an African proverb)
- Model the change ("For things to change, first I must change" - Mahatma Gandhi)

CEO SHOULD CHAMPION A CULTURE SHIFT TO ENSURE SUCCESSFUL BUSINESS MODEL TRANSFORMATION



4.2. THE COO & CHIEF PRODUCT OFFICER PERSPECTIVES

The three-plays matrix serves as a blueprint to determine the new offer positioning. Once this is defined, two crucial items need to be addressed: **customer segmentation** and **pricing strategy**. Each transformed product holds a new promise that requires a value proposition to be redefined.

4.2.1. CUSTOMER SEGMENTATION

A one-size-fits-all approach is incompatible with a business model transformation of this scale. **Not all customers are created equal**, often leading to variations as large as 80% of profits being generated by only 20% of customers. Conscious of this heterogeneity, companies today already segment their customers. However, in the transformation towards new business models, **this historic segmentation either no longer holds, or is not the most adapted**.

This is because the underlying needs, costs, benefits, and willingness to pay of customers will certainly shift as what you are selling now and how you sell it is fundamentally different from what it was before.

Customer segmentation involves clustering of customers with similar characteristics. In a B2B context, this could be based on usage / behaviors, perceived value (and therefore willingness to pay), or the maturity of their investment cycle, among other criteria. Close co-development with customers is extremely helpful, with many successful companies finding that customers often turn out to be the best product managers.

Creating a whole new "map" to analyze the solution/market fit is critical to maximize new business model adoption, by identifying the early-adopters who can value the proposition and embrace the new scheme.

As a result, the recurring nature of the new business model is an invaluable enabler to forge even deeper relationships with the customer. This allows companies to consistently gather more information about their customers and continuously iterate on both the customer segmentation and the value proposition.

Failure to conduct this customer segmentation could result in product launch failure, with an estimated 95% of the 30k new products launched every year failing because of ineffective market segmentation .

Customer segmentation, when executed properly, can help maximize revenues through several levers, including:

- Improved marketing efficiency (relevant campaigns and strategies for a targeted audience)
- Improved distribution strategy (based on an understanding of where customers buy your products and why)
- Improved customer retention (based on understanding of different expectations by segment and highest potential value clients)
- Increased competitiveness (via a more precise understanding of customer needs)
- Optimized pricing (based on an understanding of customer willingness to pay)

4.2.2. PRICING STRATEGY

Nailing the pricing strategy will have the greatest impact on the bottom line as, in the end, **how you price is as important as how much you price.**

A business transformation of the kind we are talking about here implies a shift from traditional cost-based pricing to value-based pricing. This requires an assessment of the value generated for the final customer. Moreover, different customer segments will display varying price elasticities and purchase preferences, which will determine the optimal price they are willing to accept. On the back end, a market model can help project customer migration based on differentiated pricing strategies. Finally, as a sense check, a benchmark of existing competitor offers can also complement the pricing strategy.

The above elements can then be used to create adapted pricing models, which include but are not limited to:

- Subscription model (recurring payments)
- Usage-based model (payment accordingly to the actual usage)
- Outcome-based model (payment for the achieved result)
- Persona-based models (dynamic pricing models based on individual customers)

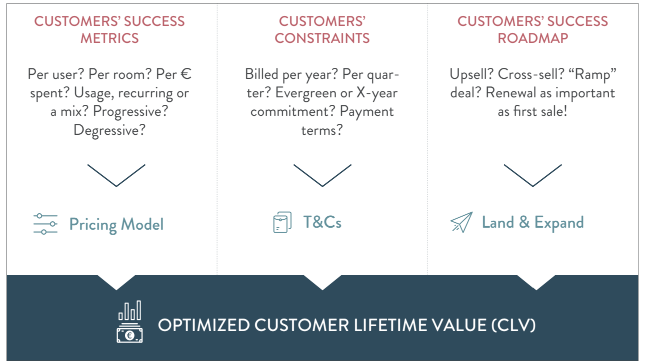
With the optimization of the customer lifetime value as the end goal, three foundational elements ought to be taken into account when defining the value proposition:

1. The pricing model:

- **The offer packaging:** it will be critical to define the right packages & bundles, as well as associated add-ons/options, based on customer segmentation and differentiated perceived value for each feature
- **The charging model:** based on the price metrics that are meaningful for the customers and the way they measure success – while enabling future uplifts; it should be easily defendable for the buyer in the way they assess value and forecastable against a budget

2. The Terms & Conditions: leverage the fields of possibilities inherent in the new recurring business models to differentiate by tailoring them to customer preference when possible. This may be linked to the billing frequency, the payment terms, the commitment, the renewal terms, the automated uplifts, etc.

3. The customer journey to land and expand customer relationships and revenue: based on packaging and the individual customer's journey, it is key to structure a differentiated acquisition strategy as well as an up-sell/cross-sell paths towards higher value offers.



EXAMPLE OF OFFER DESIGN

	BRONZE	SILVER	GOLD
	EUR 3000/month or EUR 32,400/year	EUR 10,000/month or EUR 108,000/year	Pricing on request
Payment and billing			
Choice of billing timing	✗	≈	✓
Reporting	Quaterly	Monthly	Weekly
Discount on additional machine	-	2%	5%
Product knowledge			
Support	Email support	Email support	Dedicated advisor
Pre-sales consulting	-	-	Operations planning
Online platform	✓	✓	✓
Call included/ month	Add-on / Option	3	Unlimited
Advisor	✗	Shared advisor	Dedicated advisor
Other services			
Free replacement of spare parts	✗	✓	✓
Lifetime parts warranty	✗	✓	✓
Maintenance/ repair	Remote assistance	Curative maintenance	Preventive maintenance
Intervention leadtime	1 week	3 days	2 days
# interventions/ year	✗	Add-on / Option	6

THE EXAMPLE OF MANN+HUMMEL "SENZIT" PRICING[1]

MANN+HUMMEL is a global leader and expert in the field of filtration, developing innovative solutions for the health and mobility of people in more than 80 locations worldwide, with over 20 000 employees and sales revenues of about 3.9 billion euros in 2017.

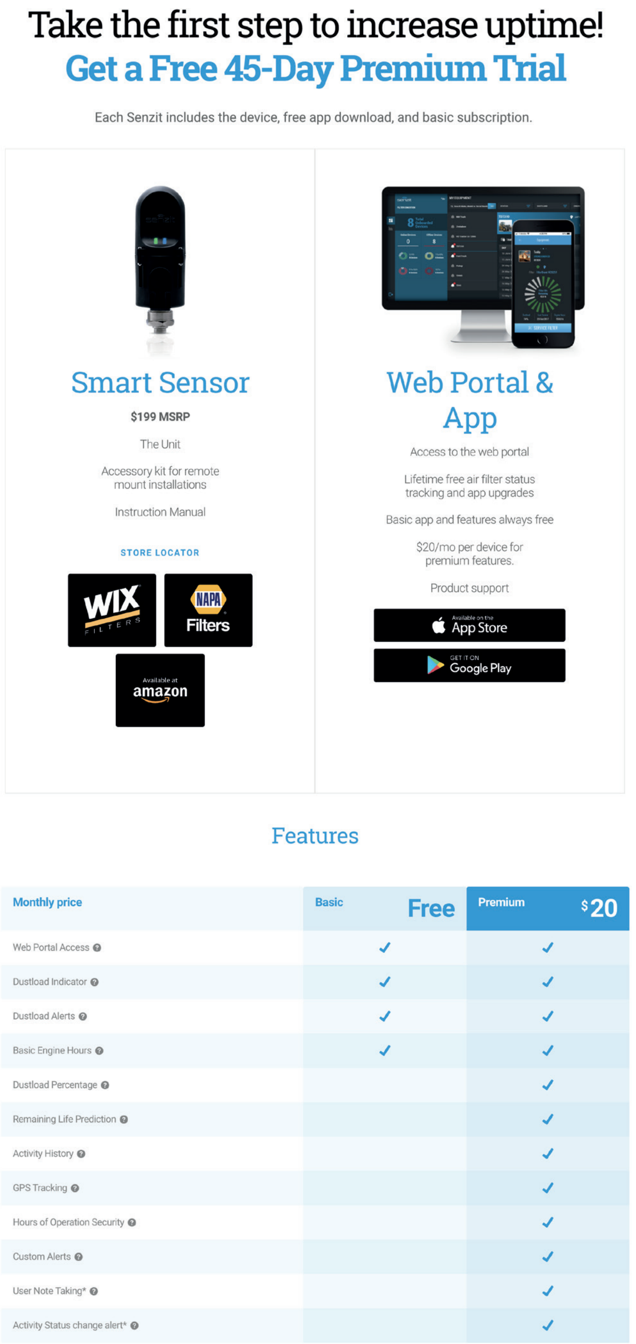
MANN+HUMMEL launched an excellent illustration of the "connected service" play. It's a predictive maintenance platform for agricultural and construction fleets. According to their website, Senzit "monitors the health and location of heavy-duty equipment by predicting remaining air filter life, tracking engine hours, and providing real-time GPS. The machine's data is then transferred to the user's mobile device or fleet manager's desktop. The result: increased uptime, optimized service intervals, and an overall reduction of waste."

Senzit's pricing is a one-time charge for the connected hardware, combined with a freemium-to-premium conversion strategy – with a recurring pricing plan based on the number of connected devices. Potential customers can find a clear explanation of what the premium plan adds versus the free services, and can benefit from a 45-day free premium trial. During this trial, customers can experience first-hand how Senzit can solve their unique business pain points.

This model also allows conversion at any point during the customer lifecycle, in addition to selling add-ons, and new solutions. By driving digitization, MANN+HUMMEL can promote product engagement and gain a better understanding of their customer base.

On a final note, pricing is less "guesstimate" and more a science, with several tools at the disposal of companies to help determine the sweet spot. In its simplest abstraction, the difference between the total cost of ownership and the customer willingness to pay represents the surplus value you leave on the table. Getting it right is crucial because, in a recurring revenue model, the margins or potential losses represented by the surplus is multiplied.

1 Source: https://senzit.io



EXAMPLES OF ROLAND BERGER PRICING & PACKAGING TOOLS

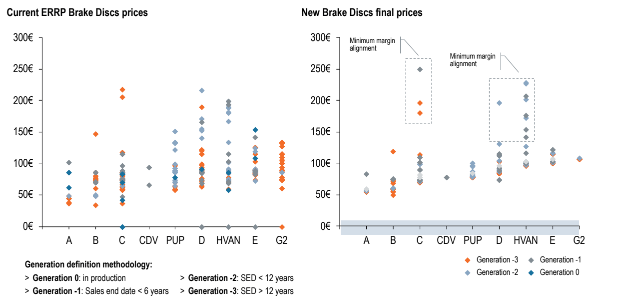
PRICING CONSISTENCY

Currently the algorithm offers a price proposal for all applicable parts and a better price structure : bigger car segments have higher prices

Brake Discs price changes [€]

The algorithm offers a price proposal for all applicable parts and a better price structure

Brake Discs price changes [€]



Source : Roland Berger experience

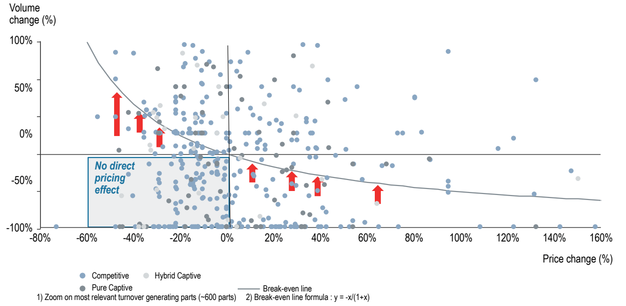
PRICE SENSITIVITY MODEL

Following sensitivity analyses, adjustments are done to get a positive turnover impact - especially for decreasing and stable prices parts

Volume evolution vs. Price evolution[1] [July - Oct. 2016 vs July - Oct. 2017]

Adjustments are done based on sensitivity analyses to generate a positive turnover impact

Volume evolution vs. Price evolution[1]



Source : Roland Berger experience

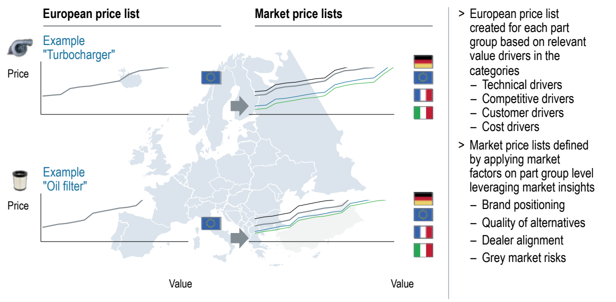
NEW MARKET PRICING LIST DESIGN

Therefore, market price lists are linked to one central price list by country-specific market factors on part group level

Market price list development

Market price lists are linked to one central price list by country-specific market factors on part group level

Market price list development



Source : Roland Berger experience

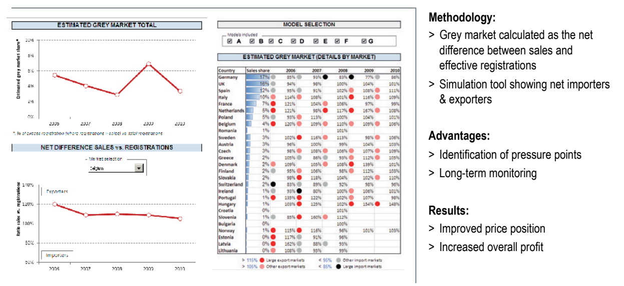
RESULTS MONITORING

Monitoring of grey market avoids profit burn and dealer network dissatisfaction

Grey market sizing

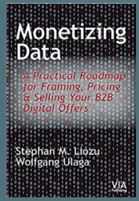
High grey market share will burn profit and lead to high dissatisfaction on dealer network level

Grey market sizing



Source : Roland Berger experience

EXPERT INSIGHTS



By Stephan M. Liozu, Ph.D. Chief Value Officer Thales Group

B2B PRICING INSIGHTS: 5 BEST PRACTICES FOR DIGITAL PRICING SUCCESS

1) In digital, cost-plus pricing is not sustainable

The world is going digital and business models are morphing to be much more services and solution-oriented. In this dematerialized environment, basing pricing decision on costs is not sustainable. Marketers need to focus on the differentiation value that is created for customers versus competitors. Part of the value management process requires monetization work of the new offer.

2) Value-based pricing is 90% value and 10% pricing

Digital is not business as usual. It requires the revisiting of your value constellation (a business ecosystem that identifies and describes how value is created and captured by individual actors in a given business community), your customer/market segmentation, your value propositions, and your value models. The value preparation work cannot be under-estimated in preparation for optimized pricing decisions. Pricing is both a science and an art. Do not hesitate to ask support from your pricing teams or to bring in pricing coaches.

3) A good pricing model starts with a good business model

Before modeling and packaging pricing, marketers should focus on value creation and business models for their data-driven and digital offers. There needs to be strong alignment between business models, value propositions, and digital pricing models. The development of a strong pricing model includes matching the customer value metric to the desired pricing metric that will be the heart of the subscription or usage model.

4) Digital Pricing needs proper preparation

Most marketers are familiar with the digital pricing options. The trends towards consumption-based pricing models in B2C marketing and the SaaS world have penetrated the B2B and industrial world. However, the reality is that digital pricing requires a strong focus on selecting the right pricing model(s), integrating complex pricing structures, optimizing pricing packaging, and transitioning from product-centric to consumption-based pricing model. For that, I recommend the use of the Pricing Model Innovation Canvas to frame the preparation work (see Pricing Model Innovation Canvas section below).

5) Prepare your go-to-market organization for change

Part of the preparation of digital pricing is to anticipate the scaling and selling of the new offer in the core business. Lack of training of the sales force might lead to unhealthy discounting habits; to giving data, service or software for free as part of the product offer; or to focusing too much on a freemium model. Capturing pricing power is obtained by boosting the level of the sellers' confidence in the differentiation of the newly developed offer and in the new pricing model.

Pricing model innovation canvas

The purpose of the Pricing Model Innovation Canvas (PMIC) is to offer a framework to innovators, marketers, digital experts, and pricing professionals to conduct deep dives in the revenue model block of the existing business model canvases (Lean Canvas or Strategyzer Business Model Canvas). PMIC focuses on the three C's of pricing (cost, competition, and customer value) and one C related to change management to support the design and execution of new or revised pricing models. The canvas describes the various methods, analyses, and outcomes of the 4C's. Working with it leads to the selection of the proper pricing model(s), the relevant pricing test plan, and to a more informed pricing decision.

For each of the C's, five methods, tools, or analyses are proposed for a total of 20. Innovators, marketers, and pricers select the most relevant to use and assemble the information using the canvas. The end game is to generate the outcomes and outputs that are necessary to better frame an opportunity and to make better pricing decisions.

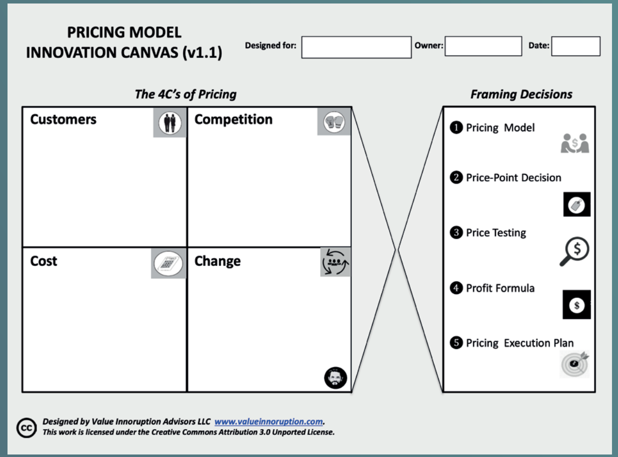
1. Pricing model(s): What is the right pricing model or models for this opportunity? Is it product pricing, subscription-based pricing, usage-based pricing, outcome-based pricing, or a mix of these?

2. Price-point Decision: What is the right price level for the new opportunity? How do you package your subscription pricing? What is the right pricing structure and discount level?

3. Price Testing: What needs to be tested, when, and with whom before it is launched? All canvases recommend testing but very little is said about pricing. Is there a need for further and specific pricing research to test the pricing model and price level?

4. Profit Formula: With the pricing model(s) and price-point selected, how does the P&L look? What happens to EBIT and cash flow? What are the impacts of switching from an ownership model to a consumption model?

5. Pricing Execution Plan: Last but not least, who does what in pricing? Who is accountable to implement the guidelines and scaling plan? How is pricing governed for this innovation when it moves back in the core business? How do we train the sales force on a new pricing model?



Recommended read: "Monetizing Data: A Practical Roadmap for Framing, Pricing, and Selling Your B2B Digital Offers", Stephan M. Liozu, Wolfgang Ulaga

4.3. THE CMO PERSPECTIVE

The challenge from a sales and marketing perspective is that the new product will necessitate a new go-to-market strategy that requires a complete rethinking of four essential parameters: **sales force, sales organization, partners, and incentivization and culture.**

4.3.1. SALES FORCE

The sales force is a crucial building block of the sales strategy. Do you have the right sales force profile and sales management to execute a new go-to-market strategy? This might require the reallocation or training of personnel from the existing organization into different, adapted roles, and most likely will require new talent to be hired. Injecting "new blood" is often required to bring new perspective as it is hard to undo practices that may have been in place for years or decades!

This transformation is crucial: selling "hardware" via traditional channels, versus a complex solution with a different go-to-market requires new skills. These skills include **experience selling intangible goods** (e.g. software sales, services sales), a **value engineering mindset** (i.e. ability to quantify value to the end customer), and the **ability to build proposals with complex terms and conditions** to maximize customer lifetime value. Moreover, these sales representatives will be required to lead discussions with new stakeholders or buying centers (e.g. CTOs and CIOs) and identify cross-sell and upsell opportunities.

The sales force is a key interface and "first responder" to the customer: even with the best solution, compromising on the transformation of the sales force will directly impact its success.

4.3.2. SALES ORGANIZATION

Selling something new requires businesses to rethink the way the sales organization is structured. How can you make sure that your sales team is focused on selling your new solution and doesn't have contradictory objectives? The question is whether you need to establish your sales organization as a separate entity or as part of the day-to-day business.

We have witnessed some successful players separating, at least temporarily, their sales team into a dedicated "Cloud" or "Service" business unit in order not to compete with the "business-as-usual" that will continue in other units. A good example can be found in a recent Harvard Business Review study[1], in which the story of Dynatrace, a SaaS leader in application performance management software, shows the importance of developing new products and business models from scratch, separate and distinct from existing product lines. According to the study, "It established an independent entity, Ruxit, in 2014 to develop a line of SaaS products in complete separation from Dynatrace's established product lines and organization. The new business was given time and space to grow in isolation before being integrated into the Dynatrace portfolio two years later, in July 2016."

These dedicated business units are often organized around five functions, which are typically seen at Software-as-a-Service companies:

- **Lead generation and content marketing:** Responsible for developing leads via traditional means (events, advertising, etc.), but more and more leveraging a differentiated content-market strategy – i.e. demonstrating the industry expertise and linking this expertise back to the unique business value of the solutions being sold. New acquisition strategies such as free trials or "freemium" (whereby basic capabilities are provided free of charge, while more advanced capabilities must be paid for) can be leveraged when relevant.
- **Business Development Representatives:** Responsible for reaching out to prospects and transforming them into qualified opportunities.
- **Account Executives:** Responsible for running the sales campaign on a qualified opportunity until closing.
- **Solution Engineers:** Work hand-in-hand with the Account Executives. Responsible for designing a "solution" for the prospects as part of the pre-sales activity – combining technical and business knowledge. Solution engineers are usually leveraged by companies selling complex solutions that cannot be demonstrated by Account Executives.
- **Customer Success Managers:** Responsible for managing the account once a deal has closed – they typically facilitate onboarding, act as customer advocates to ensure customer satisfaction, provide targeted information on the latest relevant releases/roadmap to ensure adoption in the customers' specific context. Their objective is to maximize customer lifetime value (LTV) – by ensuring renewal, reducing churn and upselling customers to higher plans or options, as well as identifying new opportunities within an account.

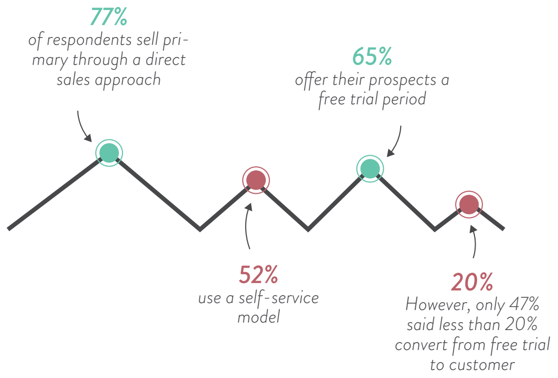
1 "How Investors React When Companies Announce They're Moving to a SaaS Business Model", HBR, Jan 17

This last function is particularly critical because of the recurring nature of the revenue streams associated with business model transformation. Customer Success Manager is an emerging business role and, as such, is continuously evolving. While we've witnessed best-in-class practices in the Software-as-a-Service industry, these practices need to be translated into the Manufacturing field depending on solutions being sold.

KEY SALES & MARKETING INSIGHTS FROM THE LATEST ZUORA'S CFO SURVEY (2017)

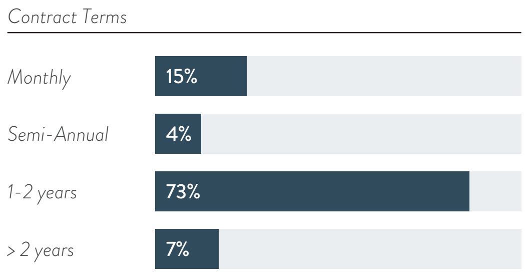
SELLING APPROACH

Not surprisingly, product plays a key role in defining sales strategy. While direct outreach still defines large enterprise efforts, many SaaS vendors are taking advantage of self-service models. Free trials of «freemium» models sound tempting on paper, but conversion rates remain stubbornly low for many.



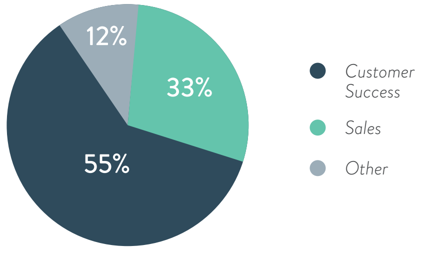
ARE YOUR CUSTOMERS COMMITTED?

The vast majority of our respondents have contract lengths of at least a year, giving customer success departments breathing space to develop and nurture longer-term relationships.



WHO OWNS RENEWALS?

Customer Success teams are increasingly becoming a prerequisite for successful subscription businesses, but for a third of our respondents, sales still owns renewals.



4.3.3. PARTNER CHANNEL TRANSFORMATION

For many manufacturers, partners are a critical sales channel. In undertaking a transformation towards new business models, it is of the utmost importance to step back and evaluate the required partner transformation.

Because of the recurring nature of the service, and the fact that the digital solution can be fully or partially operated by the manufacturer, new ways of working with partners are required. Investing in the right partner is important for the transformed value proposal. But adding an additional layer on a new sales process could generate unnecessary complexity. There are two general approaches:

- **Leveraging existing partner relationships.** Finding ways to work with existing partners sounds like a preferable approach, and can be a great way to accelerate and ensure partner loyalty. However, as with the internal sales force, selection is key – as many existing partners might not be ready or have the skills to sell new solutions
- **Leveraging new types of partners.** In some cases, especially with specific vertical or horizontal solutions, a new typology of partners (e.g. consulting firms, software vendors, etc.) could be leveraged to increase customer value to accelerate market penetration. As a rule of thumb, it is recommended to only leverage partners in this context when absolutely necessary for strategic differentiation in order to prevent the "new on new" effect. So you want to be very selective and directly lead the first sales campaigns to test, learn, and iterate – especially in terms of value pitch, positioning, decision process, etc.

> *"It is very easy for the organization delivering on the traditional business to not focus on the new-born services. Why would they? It only makes a small portion of the revenue. It is key to create a dedicated structure that will focus on those emerging services the company wants to launch. It means engineering with methods adapted to cloud service delivery and a dedicated business organization that brings focus to new offers and new capabilities like customer success. Most importantly, it means offering specific incentives to sales that will turn their focus to the value brought by emerging service offers."*
>
> *Pierre-Yves Noel, Cloud Services Product Owner at Alcatel-Lucent Enterprises.*

The enterprise will be continuously collaborating with partners to deliver customer value. This type of collaborative relationship requires a shared mindset for co-creating value, commitment to the new business model, and trust and transparency in sharing knowledge and data.

As such – to leverage partners for indirect selling, partners must be trained not only on the solution, but also on the business model and its underlying philosophy of customer success.

"In a traditional model, channels own the full relationship with the end-customer. In a cloud service model, the channel will still own the local relationship with end-customers, but this social relationship needs to be nurtured by near real-time information from the customer usage. This data comes from the digital relationship which is owned by the service provider. Providing a 360° view of the customer to the partner is crucial to handle churn and address upsell opportunities. Helping the channel succeed is still the responsibility of the service provider in this new data-led paradigm" says Pierre-Yves Noel, Cloud Services Product Owner at Alcatel-Lucent Enterprises.

In this context, not only is the value proposition shifting, but also the revenue model (cf. "Incentivization" section). As a result, it is critical to craft the right partner incentivization models and build a value proposal for your partners alongside the value proposal for your customers. As a result, you might move from a sell-through-partner to a sell-with-partner model.

TRANSFORMING THE INDIRECT SALES MODELS

When manufacturers operate in an indirect sales environment, channels need to transform to align with the manufacturer business model transformation

Manufacturer transformation		Channel transformation
Manufacturer owns, runs and provisions the subscription services	>	Channel needs to be "sold" on the importance of allowing the manufacturer to interact with end-customers
Manufacturer appreciates the complexity of monetizing subscription businesses	>	Channel needs to be aware of the complexity of monetizing subscriptions - and rely on manufacturer when necessary to avoid becoming a blocker
Manufacturer appreciates the new challenges of selling the value of subscription offerings	>	Channel needs to be taught how to sell the value of subscription offerings and be incentivized vs "classic" business to accelerate take off
Manufacturer appreciates the nuances of running subscription business models and the importance of associated customer success	>	Channel needs to understand the key differences with classic transactional business as they'll become the manufacturer's extension of customer success

EXAMPLES OF 3 INDIRECT SELLING BUSINESS MODEL STRATEGIES IN PLAY

	Indirect (Sell-to-partner)	Direct end-customer billing, w or w/o commissioning (Sell-with-partner)	Full Service / "Bill-on-behalf-of"
Description	This is the exact same indirect sales model as the classic transactional sales, but applied to subscription/new business models	Manufacturer invoices directly the end-customer Partner can be commissioned (one-time or recurring)	Manufacturer "outsources" the monetization process towards the end customer on behalf of his partner
Customer relation ownership	Partner-led but with support of Manufacturer when needed	Manufacturer, with support of Partner *Nota 1: Partner can also sell value-added or adjacent services to the customer* *Nota 2: Manufacturer can orchestrate and monetize leads to their partner network*	Partner, but orchestrated by Manufacturer
Pros	> No/Limited disruption to the existing mode > Simplified back-office processes for the Manufacturer	> Direct and recurring customer touchpoint > Better Value and Pricing enforcement > Simplifying partners' processes > Accelerated offer time-to-market	> Direct and recurring customer touchpoint > Simplifying partners' back-office processes > Ability to monetize the "bill-on-behalf" cost as a business process outsourcing subscription
Cons	> Assumes that your partner can monetize subscription/new business models (which is most likely not the case) > Assumes that your partner knows how to position and sell your new proposal > Value & Pricing enforcement at risk > Risk of negatively impacting time-to-market due to limited grasp of opportunity management	> Efforts to convince partners to get their green light regarding this model as they can feel "bypassed" > Complexity to find the optimal incentivization model for partners, and made even more complex due to the recurring nature of the business > Requirement for manufacturer to manage potentially high volume invoicing and define new back-office processes	> High volume invoicing to handle and new back-office processes to manage > Additional cost, back-office process complexity and risks to manage the "on behalf" outsourcing process
Bottomline	Only apply when there is no interest nor possibility to have direct touch point, or when the partner is adding a significant part of added-value on top of Manufacturer's product	Should be the preferred model whenever possible	By far the most complex model to operationalize Only apply when no other models are applicable

CASE STUDIES

THE ILLUSTRATION OF A TRANSFORMING CHANNEL PARTNER: ARROW ELECTRONICS CASE STUDY

Arrow Electronics started in 1935 by selling radio sets. Today it is a $23 billion business and the world's largest distributor of components and enterprise computing systems, operating as a valued supply chain partner in 56 countries. It serves 100,000+ original equipment manufacturers, contract manufacturers and commercial customers.

The Shift: From Commodity Provider to Value-Added Services

For many decades, Arrow was a straightforward and extremely profitable parts warehouse business, distributing electronic components to thousands of technology companies. Their customers came seeking isolated components.

"Before you would come in and say I want a processor...You would have a conversation with us about that, and we would go and buy that from someone and sell it to you for a slight markup," says Chief Digital Transformation Officer Matt Anderson.

But customers were increasingly looking for integrated outcomes. Arrow recognized that they needed to shift their business model from a commodity provider towards value-added services.

Monetizing Data: New Business Models

Arrow realized that when you put sensors on everything, you create data about everything. For example, "If you had shoes that had sensors in them you could charge for how many kilometers you want to walk per month! Those kinds of business models never existed before," notes Anderson

With this business model shift, these days Arrow is having very different conversations with their customers -- and has a very different relationship with them.

In other words, Arrow's customers used to come to them asking for isolated components. Now they're looking for integrated outcomes. Today's Arrow offers design engineering services and system administration. Their subscription service allows manufacturers to search over 300 million electronic parts and then apply that data to the manufacturer's bill of materials (BOM) and use for active updates.

Transactional Customers vs Solutions-Based Subscribers

In short, Arrow has started thinking -- and selling -- in terms of desired outcomes, not stand-alone devices.

Arrow is further leveraging subscription management, connectivity, design engineering, and enterprise computing to build an ecosystem of solution providers. This ecosystem allows innovators to solve critical business problems by building new technologies that gather unfathomable types and amounts of data. Recent examples include:

- Working with a major fast-food dining chain to automate, monitor, and put sensors on every single piece of kitchen equipment. The data collected should then be connected with intelligent customer menu boards and headsets; This allows the management chain to answer questions such as: whether equipment is in good working order, do certain menu items need to be removed, can menu be tailored for surge demand, etc.
- A biotechnology firm is building a new network of insect pheromone detectors that, when it picks up specific signals, automatically sprays a dispersant rather than using pesticides, leading to healthier food. Everything is automated, from the data the crop manager sees about insect patterns to the machine that sprays dispersant.
- They're even working to build a better mousetrap: an automated trap that monitors activity and effectiveness, certifies that it's meeting regulations that restaurant chains and grain elevators must abide by, and notifies the manager of any problems.

Arrow's division specialized on those new business models, called Silicon Expert Technologies (SET), has about 800 customers and is growing at a rate of 20-30 new customers per month.

Anderson calls out the difference between a transactional customer and a solutions-based subscriber: "At Arrow, a customer is someone who buys a component or who buys a piece of technology that could make a data center... A subscriber is someone who is really interested in a relationship with Arrow that is solving a specific problem."

Today Arrow benefits from the fact that IoT is making every single industry and every single company a potential subscription business. "If you are a fan of innovation, you are fundamentally a fan of the subscription economy," says Anderson.

4.3.4. INCENTIVIZATION AND CULTURE

Finding the right sales force and determining the best sales organization is only part of the sales story: you need an appropriate **incentivization plan** to ensure sustainability. Because the relationship with customers in a recurring model is so critical, sales personnel and account managers are made indispensable -- and their retention is a priority.

As a general rule, sales incentive schemes, in order to be effective, should follow three principles: **reflect the company's overall strategy**, be **embodied by all the sales teams**, and be **completely objective**, based on clear and pre-defined principles.

The sales incentive scheme should be designed with the aim of **encouraging specific actions from the sales team or partners**, whose ultimate goal should be to attract and retain customers. Incentives can take different forms, from direct compensation to benefits. The first step in redesigning the incentive scheme is reviewing existing incentives and understanding customer expectations.

As a result, in the transformation towards new business models, there are two new variables to consider:

1) Maximize customer lifetime value. Unlike traditional hardware sales, the job isn't done when a new contract is signed. Instead, it is crucial to maximize the customer lifetime value.

2) Customize compensation. Instead of a one-off "big sale," there will be smaller -- yet recurring and evolving -- recurring revenue from customers. Sales teams who are used to making large hardware sales deals are not likely to be motivated to sell smaller monthly/yearly recurring packages if you don't customize your compensation plans accordingly.

As a result, it is critical to build dedicated and distinct compensations plans that rather than focus on bookings instead focus on recurring metrics such as Annual Contract Value (ACV), Total Contract Value (TCV), or Monthly Recurring Revenue (MRR) - cf. CFO perspective. Compensation strategy should eventually be "modulated" by critical business considerations (contract length, renewal rules, payment terms, planned upsells, etc.).

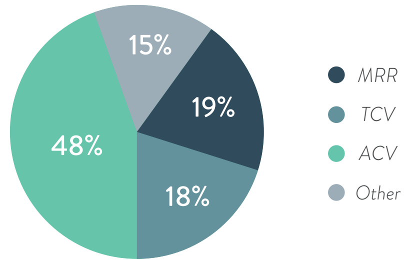
Finally, beyond traditional commissions, many companies embracing recurring business models also leverage specific and temporary incentives, also known as "SPIFFs," to drive or change certain behaviors, for example a cash bonus for getting certain logos or selling certain options or an X% additional bonus for a 3-year contract instead of a 1-year. For customer success teams, incentivization should focus on retention, churn prevention, and expansion.

Regardless of the compensation plan you design, it's important to keep the plan simple, predictable, and clear. As Marcus Bragg, SVP of WW Sales and Customer Success at Zendesk, advises "Hopefully you have no more than two to three major drivers of the variable commission."

KEY INCENTIVIZATION LEARNINGS FROM THE LATEST ZUORA'S CFO SURVEY (2017)

WHAT'S YOUR QUOTA BASED ON?

In other words, what metric do you use to guide sales compensation? Annual Contract Value, Total Contract Value, or Monthly Recurring Revenue? SaaS models tend to favor rewarding ACV, or the first-year footprint.

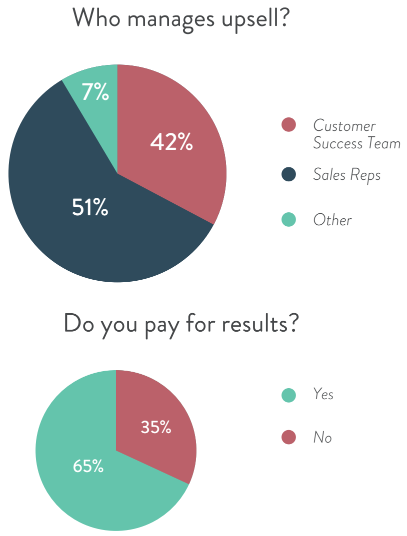


WHAT ARE YOUT COMMISSION RATES?

At the bottom rung of sales commission rates, 5% is probably closer in line with a traditional product sales model. At the other extreme, a 20% commission implies a mature product and agressive investment in market share.

Responses		Rates
9%	CHEAPSKATES	5%
35%	THE NORM	6-10%
37%	THE NORM	11-15%
12%	BREAKING THE BANK	20%

WHO OWNS THE UPSELL? SALES OR CUSTOMER SUCCESS? IF IT'S YOUR CS DEPARTMENT, SHOULD THEY BE GETTING A COMMISSION?



4.4. THE CFO PERSPECTIVE

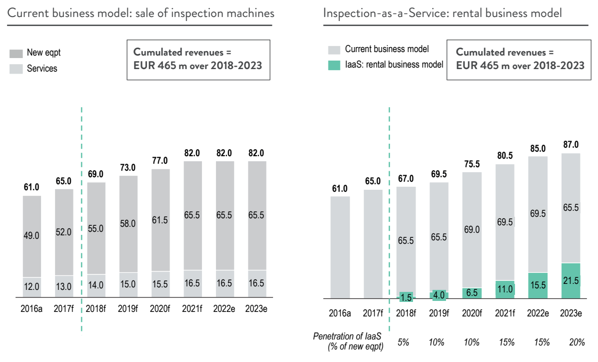
The challenge from a Finance perspective is that shifting to new flexible and recurring business models deeply impacts the way the business is financed and measured. It requires a mindset shift: **defining a transition operating model, building a new set of KPIs to measure success, and communicating this success internally and externally accordingly**.

And once you've learned how much of the new subscription business model the CFO is responsible for, the next challenge is to make sure everyone else in the C-suite and the organization gets how important these shifts are to the viability of the new business model.

4.4.1. DEFINING A TRANSITION OPERATING MODEL

Transitioning towards a new business model isn't as easy as flipping a switch. As we have seen across the three plays, while transformation delivers predictable revenue and cash flow over the long term, in the short term, cash flow is likely to be disrupted and margins depressed – especially in the case of the Repackage-to-Recurring and Product-as-a-Service plays (though the Connected Service play typically addresses new overlay solutions which results in pure new revenue stream, with high margin contribution and limited revenue contribution). Let's take the following example:

TRANSITIONING THE BUSINESS MODEL : A MANUFACTURING EXAMPLE



Assumptions: Progressive business model switch from sale of machines to rental; Rental contract value of 45% of machine sale price during 5 years; Rental contract renewal rate of 100% after 5 years

In this case – not only does the manufacturer need to finance upfront costs and the cash flow impact versus traditional sales, but the asset might also end up in its balance sheet, thus impacting the equilibrium of its key ratios.

Of course – by selling additional over-the-top services during the lifecycle of the contract, there's an incredible opportunity to expand the revenue footprint, but also margin contribution. For the CFO, this means new revenue recognition rules and potentially new payment strategies and methods to tackle (– cf. chapter 5 where we deep dive in the associated critical capabilities). Manufacturing companies will need to strategically forecast the transition to manage it – especially to find the right financing leverages for transformation (leasing, fundraising, etc.). Often, companies don't have the upfront capital on their balance sheet to do so.

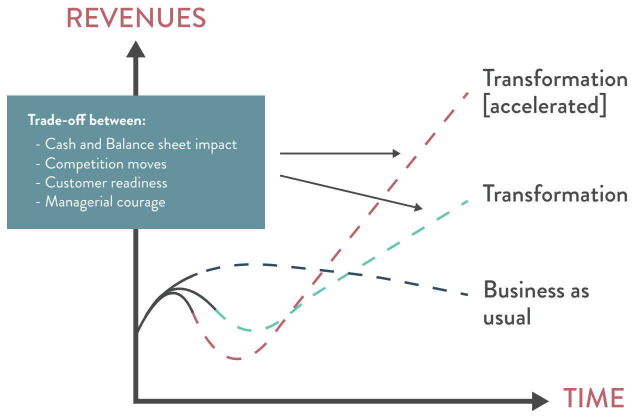
Financial Services are starting to make the move from traditional leasing models towards flexible subscription and usage-based models to support manufacturers in their mutation. According to Pascal Layan, COO at BNPP Leasing Solutions, "Leasing has, in many respects, pioneered the Subscription Economy by reinventing the value chain. The product isn't an end in itself – but becomes the platform for a service. As such, leasing solutions have a big part to play in helping manufacturers and resellers make the transition to a pay-per-month subscription model by providing capital to the manufacturer and its distribution channel on day one, then offering a hybrid subscription-like model to the end-user".

Overall, how quickly the CFO is able to transform the business will be dynamically impacted by at least four variables:

- Cash and Balance sheet impact
- Competition moves
- Customer readiness
- Managerial courage

In all cases, it will most likely follow a U-shaped revenue pattern as recognized revenues typically dip before bouncing back during the transitional period (we also refer to this as "swallowing the fish" effect wherein at the beginning of business model transformation, costs go up and revenue drops, but, over time, costs go down and revenue comes back up in the form of predictable recurring revenue).

As we've observed in the Software-as-a-Service industry, this transition is generally a multi-year move, typically taking from two to more than five years. It will likely take a lot longer in the manufacturing space because of the tangible aspect and associated marginal cost of the core solution being sold.



4.4.2. BUILDING A NEW SET OF KPIS TO SUPPORT A NEW TARGET OPERATING MODEL

With new business models, the focus is on metrics that capture the customer relationship. However, traditional GAAP (generally accepted accounting principles) metrics don't recognize and reflect the shift from one-time purchases to monetizing long-term customer relationships.

In the Subscription Economy, the relationship with your customer – not the sale of individual products – is the key to your company's success. And that's why traditional GAAP metrics are no longer sufficient.

Instead, a dedicated set of KPIs, typically used within the Software-as-a-Service industry as a "best-in-class," are now being widely adopted. At the most fundamental level, customer health is captured through Annual Recurring Revenue (ARR). Tyler Sloat, Zuora's CFO, compares ARR to recurring expenses (this includes the annualized Cost of Goods Sold, General & Administration expenses, and R&D), to capture the recurring profit margin which is "the cornerstone of the model," according to him.

Essentially, "you want to grow ARR faster than the recurring expense. This allows you to spend more to grow. Then, you will keep track of the growth efficiency index, which shows how much you can increase the ARR for every dollar invested."

Other key metrics revolve around:

- Level of client commitment (metrics such as ARR, Annual Recurring Revenue and MRR, Monthly Recurring Revenue)
- Evolution of client's contract over time (metrics such as ACV: Annual Contract Value)
- Evolution of client's commitment over time (metrics such as TCV: Total Contract Value)
- Customer retention and success (metrics such as churn rate or net retention rate)
- Efficiency of growth (metrics such as cost of acquisition, growth efficiency index)

To be fully effective, metrics must support a dedicated target operating model. Zuora has, for example, developed an internal framework called PADRE/PPM which stands for Pipeline, Acquire, Deploy, Run and Expand – and Product, People and Money for the supporting functions.

This framework gives a lens into the customer subscription journey, from initial inquiry to ongoing success. And it serves as a tool we can use to hold internal departments accountable for how they support the customer relationship throughout the customer lifecycle.

EXAMPLES OF ZUORA'S PADRE MODEL

P	A	D	R	E
PIPELINE	ACQUIRE	DEPLOY	RUN	EXPAND
Web Social AR / PR Events Product Launches	Demand Gen. Field Enablement Business Dev. Emerging Enterprise International Sales Eng.	Self Service Squads Partners Methodology	Tech Ops Support Renewals Account Mgmt. Adoption Training	Upsell Cross-sell

P	P	M
PRODUCT	PEOPLE	MONEY
PM / PMM R&D Docs	Recruiting Onboarding Training Help Desk	Finance Operations Legal

Each stage has its own set of metrics. For example, at the Pipeline level, you need to understand the nature of your sales approach (is it low-touch or high-touch?) and then measure the progress, such as traffic, leads, and opportunities.

In the case of Zuora, it has two main metrics for the pipeline: the Pipeline Creation Multiple (this is about setting the goal, such as a 5X sales quota for two quarters out) and the Pipeline Coverage Ratio (this is the ratio of the active pipeline on day 1 of the period divided by the sales goal for the period).

With a target operating model like PADRE, you can create a virtuous cycle. That is, the pipeline spurs customer acquisition that then

> *The idea of Swallowing the Fish...that whole concept has gone from a peripheral idea 5-10 years ago to one that is now fully embraced in the mainstream and expected, valued and, in some cases, demanded by Wall Street."*
>
> *Craig Hanson, Nextworld Co-Founder and General Manager*

increases the deployments and so on. "It's all about feeding ARR growth," said Tyler Sloat. "And PADRE makes sure we are on track."

4.4.3. COMMUNICATING SUCCESS INTERNALLY

An internal communication campaign is a way to empower and include employees during the business model change, and to provide a clear roadmap and objectives for the company.

CFOs need to be able to communicate the metrics specific to a recurring business and educate the executive staff on how to use them to make informed business decisions and how they will inform the trajectory of the business.

For example, executives in charge of growth (sales & marketing) are held accountable for a specific growth efficiency index (GEI) because the model is set up so that it generates a "dollar multiplier" for every dollar injected in the growth engine – i.e. how much you can increase the ARR for every dollar invested.

While, on the other hand, executives in charge of non-growth (such as engineering, product, G&A) will not get to grow until ARR grows.If everybody across the board is aligned on the model because the CFO has set up clear measurement and the associated target operating model to run it, this should translate into deep acceleration.

Having a dedicated set of metrics to be judged on also provides accountability and focus and reinforces the importance of having a dedicated entity to run the business unit, and prevents the issue of "schizophrenic" objectives between business-as-usual and new business models.

4.4.4. COMMUNICATING SUCCESS EXTERNALLY

CFOs will need to communicate clearly to their investors the undergoing transformation towards new business models. Of course, for public or private companies, the approach might differ depending of the investment horizon.

Yet, good news is that this business model transformation has already been witnessed in other industries, such as Software-as-a-Service – where companies like Adobe, PTC or Autodesk have successfully pivoted and, as a result, enjoyed valuation multiple premiums. And investors are getting it. According to Alex Eule, Managing Editor of Barron's "Wall Street has recognized the value of subscriptions over traditional sales."

"HOW SUBSCRIPTIONS ARE REMAKING CORPORATE AMERICA", ALEX EULE, MANAGING EDITOR OF BARRON'S

Best-in-class usually thrive in the following external communication skills:

- **Consistent communication.** Communicating above and beyond on the importance of the business model transformation and the means employed to make it successful, while emphasizing the predictability of recurring revenue
- **Educating investors and stakeholders.** Dedicating and spending time to educate investors and stakeholders in the "new" way of measuring success and associated metrics
- **Setting objectives against key metrics.** Explaining why the chosen metrics are important and the roadmap to the company's specific transformation and context, and reporting consistently against those objectives in order to prove that the business is under control.

On a side note, these metrics are even disclosed publicly in annual reports alongside GAAP results. Nowadays, this disclosure goes beyond the early adopting industries: for example, AMC Theaters which launched a new cinema subscription program called "Stubs A-List" on June 26th 2018, communicated the success of their subscription offerings reaching 500K+ subscribers in ARR terms, saying: "that already translates to $120 million of annual recurring revenue (ARR)". And Xerox reported on renewal rate "defined by the annual recurring revenue (ARR) on contracts" during their third-quarter 2018 results report.

PTC, one of the 50 biggest software companies in the world, provides another good example of transparent external messaging. In October 2015, at the start of their shift to a subscription model, PTC told

THE POWER OF SUBSCRIPTIONS

The software industry has spent the past decade transitioning to a subscription model. For investors, the payoff has been significant.

COMPANY TICKER	DATE OF TRANSITION START	DATE OF TRANSITION END	TOTAL RETURN (%)	S&P PERFORMANCE (%)
Synopsys / SNPS	8/18/04	8/22/07	21.10	33.70
Advent Software / ADVS	10/21/04	4/7/07	72.6	30.5
Ariba / ARBA	4/21/05	5/21/12	361.3	13.5
Cadence / CDNS	7/23/08	7/25/12	11.2	13.5
Aspen Technology / AZPN	7/9/09	8/13/15	359.1	136
Adobe / ADBE	11/9/11		792.7	119.3
Autodesk / ADSK	10/2/13		229.4	59.2
Intuit / INTU	8/21/14		146.5	35.3
Model N / MODN	2/3/15		31.2	31.6
PTC / PTC	4/30/15		128.3	29.3

investors and analysts that in five years (FY2021) it was aiming for $1.6B in revenue, 10 percent revenue growth, an operating margin in the low thirties and 70 percent of bookings coming from subscriptions. This disclosure led to a little pop: a 15% increase in valuation.

Just one year later, they upped the ante on their FY21 targets and have continued to beat and raise since then to tremendous results: As of May 2017, their stock was up 85% year-over-year, and they had added almost $2.5B in shareholder value in a period of less than 12 months.

4.5. THE CIO & CTO PERSPECTIVE

CIO/CTOs will need to work closely with the CXOs and leadership team to continuously educate them about the importance of the new digital capabilities and their benefits. Their main task is to design and lay the technological foundation of innovation in order to reap all the benefits from Industry 4.0's enablers and capture value: IoT, Big Data, AI, Cloud.

Accordingly, CIO/CTOs need to **facilitate an agile mindset** and **build a business platform of innovation** on top of the technological platform of innovation while **ensuring consistency with the legacy architecture** required to run the existing business.

4.5.1. FACILITATING AN AGILE MINDSET

Transforming towards new business models requires speed and an entrepreneurial approach. This will lead to resistance as it deeply modifies how the company is making money and transform practices that have been in place for years or decades.

To run this transformation, CIO/CTOs have to select the right implementation model for each individual case and earn the CEO's sponsorship to support transformation. In a nutshell, traditional businesses improve their products and services incrementally (exploitation) and are often likened to oil tankers for their lack of agility.

Start-ups innovate radically and disrupt the market (exploration), prompting comparison with speedboats. The rule of thumb is: the more innovative the expected outcome, the more agile the chosen approach needs to be:

- The **traditional waterfall** model should remain the right choice for the transformation of stable, core functions and associated IS systems. Projects of this kind are usually characterized by clearly defined goals, precisely definable requirements, little flexibility in the planned implementation, and changes on an incremental scale.
- The **digital factory** approach is the preferred option for transforming the existing business model on an incremental basis. In a digital factory, the business functions and IT work on an interdisciplinary level, development cycles are short, and the learning process is iterative. The overall objective is broken down into individual, clearly definable deliverables that are implemented step-by-step in precisely defined phases. The primary area of application for a digital factory is in the end-to-end digitalization of the existing business model, for example when digitalizing processes with a clear focus on customer centricity and the reduction of complexity.
- The **agile speed boat method** should be chosen as the implementation model when the aim is to implement disruptive ideas and decoupled innovative solutions outside of legacy structures. It is used for projects that aim to break new ground. Typically, neither the outcome nor the way to achieve it can be fully defined at the start of the project. This approach places a great deal of emphasis on creating rapidly visible results, having short development cycles and using agile methods.

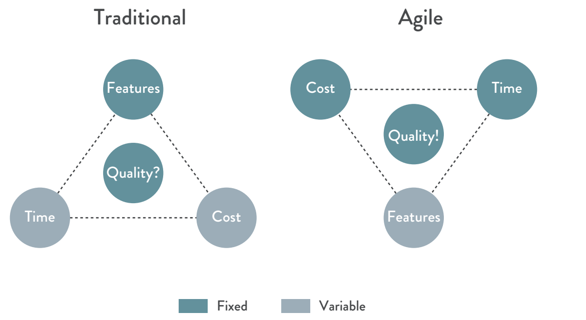
Due to the disruptive and highly innovative nature of business model transformation, agile speed boat and digital factory are the two most appropriate approaches to enable manufacturers to move faster.

Rapid prototyping and experimentation will shorten the time to market and cut costs as compared to more traditional methods. This fresh approach emphasizes lean and agile processes. New products should be iteratively tested in the market before being finalized.

This means that product generation needs to be faster and more focused on customer requirements which can be incorporated through direct feedback. Importantly, this rapid testing allows concepts that do not live up to expectations to fail fast. This is a good thing!

The overall objective is to think big, test small, learn fast, minimize investment in design and development before market testing, and build empathy with users. Leverage the Minimum Viable Product (MVP) approach – i.e. enabling only the required features to capture the attention of early adopters while enriching the roadmap to scale as the business grows and ecosystems mature (IoT connectivity solutions, etc.).

AGILE METHODS FOCUS ON MVPS AND FIXED TIMEFRAMES



Embracing this new agile mindset will lead CIO/CTOs to rethink their make or buy strategies and to consider new partners – even players from other industries.

These partners are useful not only for "feeding" the building blocks of reference architecture, but also as strategic enablers. For instance, vertical/horizontal cloud vendors or IOT solution providers could provide first-hand expertise and insights beyond the technical solution they're selling.

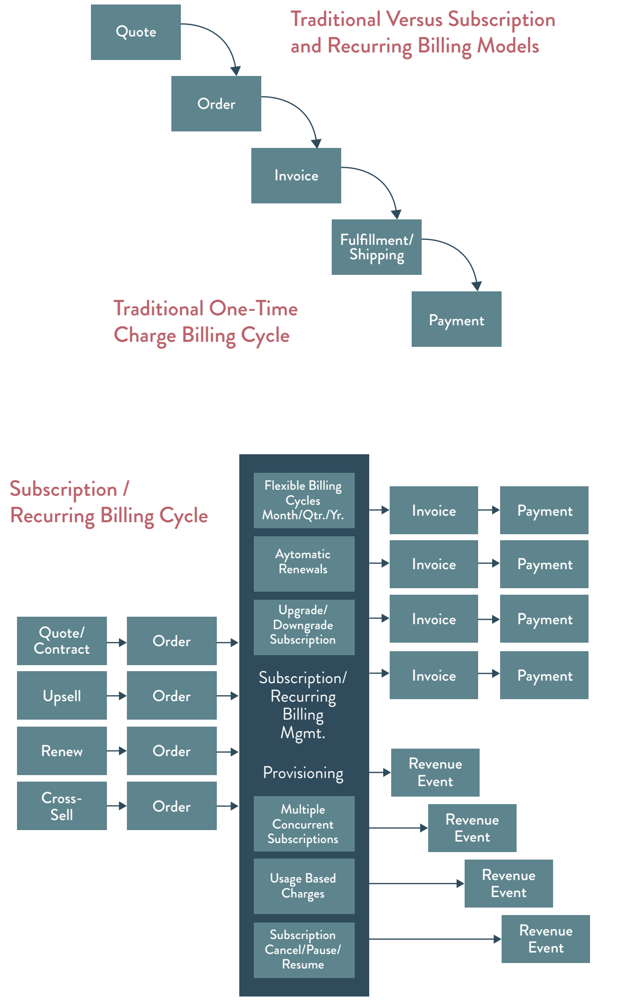
"Where so far companies were aiming at software solutions that would just fit their existing process needs, some SaaS providers can give them the opportunity to go much beyond in terms of value creation and help them rethink their product offers and even their business models" confirms Jean-Luc Galzi, interim CIO and former SVP Group Applications & Services at Schneider Electric.

4.5.2. BUILDING A BUSINESS INNOVATION PLATFORM WHILE ENSURING ALIGNMENT WITH LEGACY ARCHITECTURE

CIO/CTOs should focus on building a reference architecture that accelerates the delivery of digital service platforms. However, these reference architectures can't enable new technologies without integrating the business model innovation layer.

As detailed in Chapter 1, transforming towards new business models requires a deep transformation in business practices -- shifting from product to customer focus and focusing on monetizing relationships instead of merely selling as many units as possible through as many channels as possible.

Manufacturing companies rely heavily on Enterprise Resource Planning (ERP) solutions to successfully optimize key business processes such as production or supply chain. Manufacturers also invest in Customer Relationship Management (CRM) systems to track interactions with prospects and customers and improve sales efficiency.



Note: Representation only. Subscription/recurring billing solutions vary widely in range of capabilities.
ID: 369708
Source: Gartner (November 2018)

As a result, traditional business models are anchored on these two systems -- ERP and CRM – with all business processes, from quoting to ordering to fulfilling, falling between. This architecture assumes a linear process, but the reality of subscriptions is much more complicated.

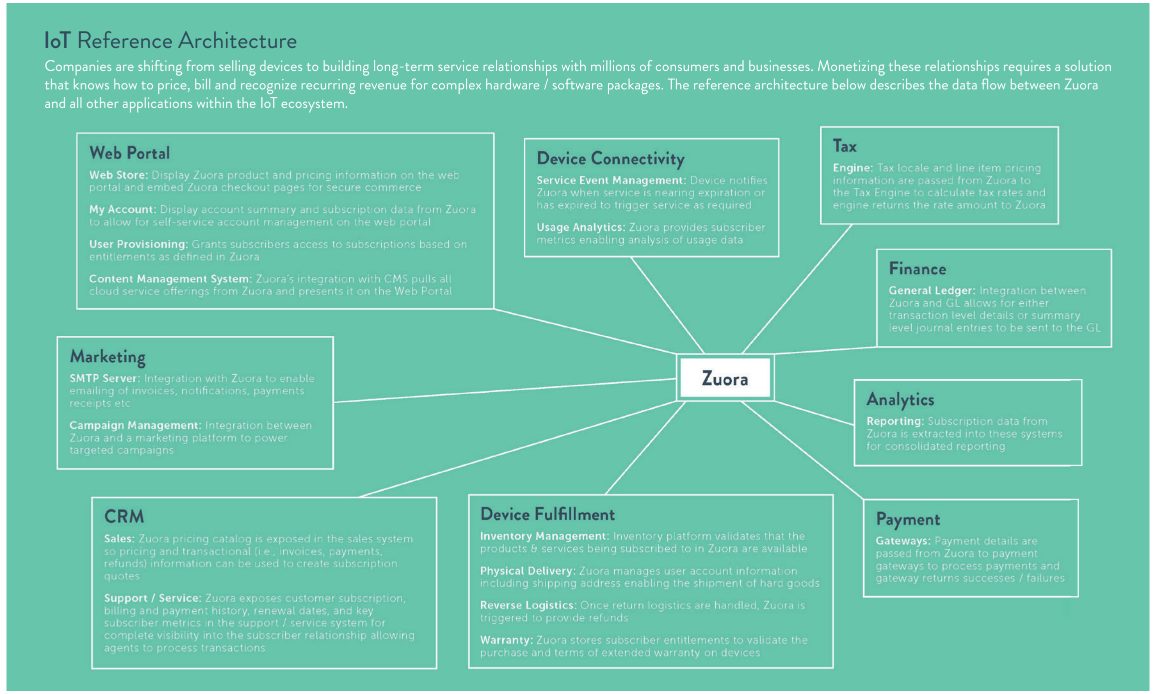
As the independent analyst firm Gartner notes, these solutions "are good at billing one-time sales, but more often than not, they are unable to support these new digital business models" especially as "a significant aspect of the monetization process associated with digital business will require organizations to address and revamp the customer billing experience and deal with the rising complexity and requirements for flexibility associated with that experience."

A new solution is needed: a comprehensive platform that can manage all the complexities associated with these new digital business models. Gartner also confirms, "digital business models have accelerated interest in and growth of subscription and recurring billing management (SRBM) because traditional solutions are unable to address the complexity and new requirements imposed by these models."

Recurring revenue businesses demand a flexible system that allows for experimentation with new pricing and packaging, go-to-market strategies, payment methods, and more -- especially as "technology disruption will accelerate demand for even more complex pricing/billing models," as Gartner notes. These business models also require openness, for example for customers to access self-service or partners for third-party services to provision and/or aggregate.

As a result, innovative businesses are seeking new solutions that can handle the unique requirements of subscription models and the new order-to-revenue lifecycle. Such architectures are becoming mainstream at Software-as-a-Service or Media companies embracing business model transformation.

Of course, CIOs will need to ensure the consistency of the IS landscape by analyzing the right level of integration between the new digital architecture and the legacy infrastructure. To enable innovation, these levels of integration can evolve as the business scales rather than making investments in costly projects up front. In short, CIOs should define a reference architecture and an agile roadmap that can support business model innovation.

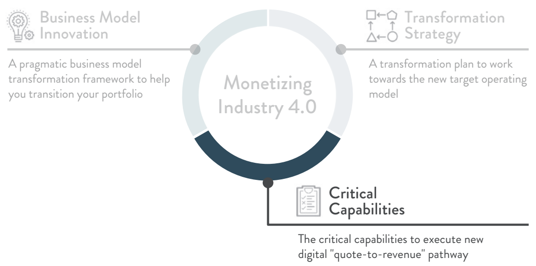


ZUORA'S SIMPLIFIED REFERENCE ARCHITECTURE FOR INDUSTRY 4.0 MONETIZATION (ILLUSTRATIVE)

As a result, CIOs should communicate within teams while closely aligning with key business stakeholders – especially CMOs & CFOs – to set the "acceptable" level of integration based on the stage of maturity/materiality of the transforming portfolio. In such a transforming environment, pragmatism should indeed prevail over positions of principle, as long as a roadmap with the associated due diligence has been completed.

From our perspective, having worked with a wide variety of subscription businesses from native SaaS startups to transforming Fortune 500 companies, we will deep dive in chapter 5 on a list of critical capabilities CIOs must be aware of when defining a business model innovation layer in their reference architecture.

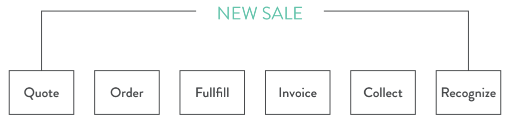
5. WHAT IT TAKES: MASTERING THE CRITICAL CAPABILITIES



As manufacturing companies make the shift to these new business models, they need new systems of business model innovation to help support transformation. It's not an overstatement to say that the IT architecture your company adopts can make or break your pivot to a new business model.

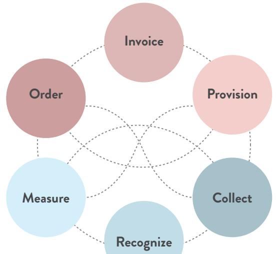
Technology should empower innovation, not inhibit growth. But we're seeing many leading executives unsure of how to use technology to support innovation. In fact, according to a 2017 Fortune survey, 73% of Fortune 500 CEOs said that the rapid pace of technology was their biggest concern -- and many aren't keeping pace, instead relying on legacy systems and IT architecture that simply can't manage these new models. Historically, manufacturing -- like many other industries -- has relied on ERP systems. But traditional ERP systems were designed to manage the one-off sales of product: a linear quote-to-cash process.

TRADITIONAL ORDER-TO-REVENUE IS LINEAR AND SIMPLE



ERPs struggle when it comes to managing new business models which are fundamentally more dynamic.

ORDER-TO-REVENUE IS MUCH MORE DYNAMIC WITH NEW BUSINESS MODELS



While ERPs still make sense for managing operations, there is a pressing need for a new monetization layer to complement ERPs and solve for the important challenges of new business models such as:

- Pricing beyond the "1 product = 1 price" paradigm -- e.g. pay-as-you-go/usage-based, committed recurring, etc.
- Managing ongoing relationships and flexible contracts
- Automating complex invoicing process, relying on usage or outcome/consumption
- Maximizing recurring cash collections with seamless payments
- Managing recurring operations at scale
- Accessing and tracking new metrics

These architectures pose issues for companies as they look to launch and scale recurring revenue models.

According to a recent survey of finance executives from CFO Research, 65% faced operational problems when launching a recurring revenue product or service, from challenges tracking revenue to an inability to leverage subscription data. And, as subscription annual recurring revenue contribution rises, issues with traditional architecture become an increasing burden that needs to be solved for: according to the same survey, nearly two-thirds (67%) of respondents were actively exploring new processes or systems to support recurring revenue products or services.

This exactly matches what we have witnessed for the past 10 years: companies trying to customize their legacy systems or build a custom landscape to tackle these challenges, without much success. For example, a leading German manufacturer took 6 months just to launch new pricing.

A leading software vendor found that it took 21 days just to process an order. These workarounds, custom codes, and other stop-gap measures don't just block growth, they also negatively impact the customer experience and the cost of operations. These limitations often lead companies to compromise, settling for suboptimal versions of planned launches -- or oftentimes they're forced to give up on projects altogether.

But across other industries in which business model transformation has disrupted the market -- such as media and software -- we see a new agile monetization architecture. And we're starting to see this new architecture being adopted by some leading manufacturers as well, such as Alcatel-Lucent Enterprise, Caterpilar, Komatsu, and Schneider Electric.

Transforming manufacturing companies understand the importance of having a dedicated innovation layer within the information system to support business model innovation. As Cyril Perducat, EVP Digital Services and IoT at Schneider Electric, noted, it's of the utmost importance to strike a "balance between technology innovation and business innovation."

5.1. THE 6 CRITICAL CAPABILITIES FOR TRANSFORMING MANUFACTURING COMPANIES

To support transformation, manufacturing companies need a business model innovation platform that can enable 6 new critical capabilities:

AGILE PRICING AND PACKAGING	SUBSCRIPTION LIFECYCLE MANAGEMENT	DIGITAL RECURRING RATING AND INVOICING
DIGITAL AND RECURRING PAYMENT FLEXIBILITY AND COVERAGE	AUDIT-READY, AUTOMATED FINANCIAL OPERATIONS	REAL-TIME ACCESS TO KEY MONETIZATION METRICS

Here we examine each of these critical capabilities, outlining the system needs, supported by proof points that include anonymized data from the Zuora customer database of 1.000+ customers, with a total $7.5B of invoice volume.

5.1.1. AGILE PRICING & PACKAGING

New requirement:

Manufacturing companies, like companies across all industries, are moving away from the "one product equals one price point" paradigm. Modern consumers are accustomed to purchasing in a digital fashion, and, as such, have expectations of tailored packaging and pricing model aligned to their perceived value.

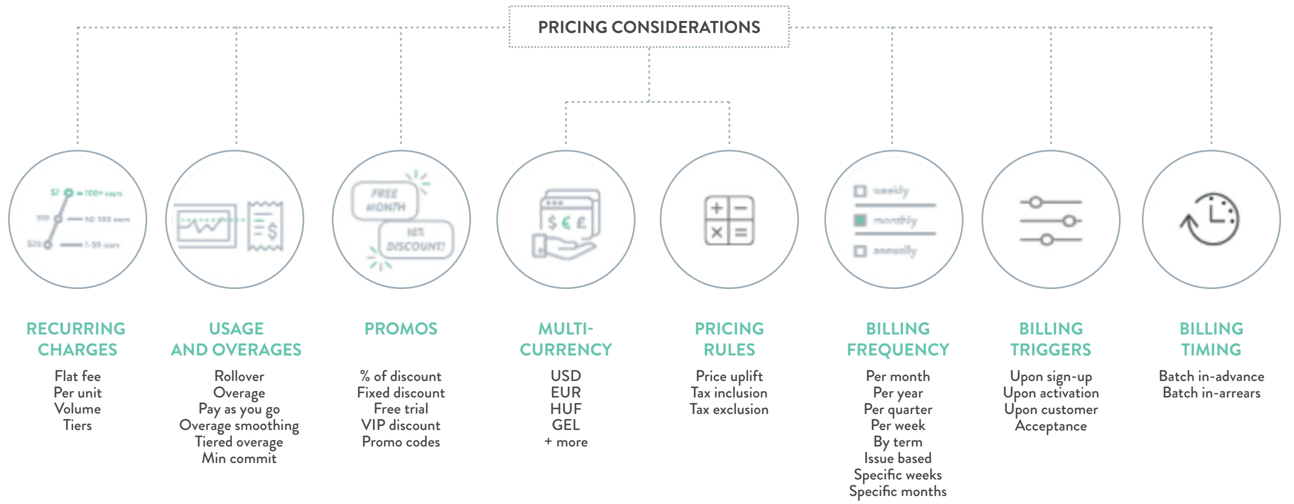
Usage-based pricing, in particular, is becoming more dominant across many industries. Started in software, it is now spreading across manufacturing, retail, media, information, and more.

Here are some of the more common usage-based pricing models:

1. Per-Unit Pricing. Also known as "pay per use." Pay per use is a per unit fee billed immediately after use.

2. Overage Pricing. This pricing model gives customers a certain quantity of included units – for example, minutes for calls per month. If your customer exceeds the quantity of included units within the billing period, the amount used over the included units is charged on a per-unit basis based on the overage price.

3. Volume Pricing. Volume pricing is used to charge a price based on the volume purchased. For example, a SaaS company might charge $.10 (flat or per unit) for 1-1000 data exports, but $.15 per export for 1001-10,000, etc. This kind of pricing can be a great incentive for a consumer to use more of the product since the price per unit gets cheaper.



4. Tiered Pricing. Tiered pricing is used to change pricing progressively as the volume increases. Like the volume pricing model, the tiered pricing model uses a price table to calculate the pricing. It differs from volume pricing in that the amount to charge varies progressively as volume increases, so different units may be priced differently depending on the tier they fall into.

5. Tiered with Overage Pricing. This charge model is similar to the tiered charge model, except there is an overage charge for any units consumed above the ending units of the final tier.

6. Multi-Attribute Pricing. This charge model charges customers through a variety of different metrics – for example a car subscription might charge through a combination of "time of day" or "day of week" or "type of car."

For an example of pricing variations in action, look at a company like GE Digital which offers enterprise resource packs priced to accommodate the varying needs of their industrial consumers. They sell multiple editions targeting different sized organizations (from small professional to large enterprises) and different annual plans from Cloud core to Cloud asset/analytics. On top of these plans, they incorporate usage pricing, for example tiered pricing for data points ingested and per connections, with pricing per unit decreasing as data points and connections increase.

And usage pricing yields bottomline results: Companies with no revenue from usage-based models show a YoY growth rate of just 18%, whereas companies that have usage-based pricing making up between 1-50% of their overall revenue grow by 28% YoY.

Core questions:

- PRICING TODAY: How do you price and package today?
- PRICING TOMORROW: What about in the future? Are you considering product editions, usage pricing, freemium, free trials, or other changes?
- PRICING CHANGES: How do you handle a pricing or packaging change? Who is involved in the process? How long does it take?

New critical capability:

Transforming manufacturing companies need an agile monetization platform that accelerates the pace of experimentations -- especially regarding the business model. Across the Zuora customer base, we see 13 pricing plans per product, on average. And best-in-class companies make 11 pricing/monetization modifications per quarter.

Pricing flexibility is essential for business model transformation. You need the ability to quickly and easily design new pricing and promo strategies in any currency using any combination of pricing models (one-time, recurring, consumption) and then have these new plans surfaced on your acquisition channels. And you need the ability to do all this without having to re-code or re-engineer.

Traditional ERPs are not designed for subscription or consumption-based prices and cannot support the wide range of pricing considerations of new business models, from recurring charges to promos to billing frequency options. That's because ERPs are designed to price and sell products by SKUs (Stock Keeping Unit). This data model is optimal when you're dealing with one-time product sales, but it's not sufficient to manage any sort of usage pricing or time-based monetization -- and leads to SKU explosion and hard-coded customizations that cannot scale.

When manufacturing companies rely on ERPs to price their products, they experience slow time to market -- and, oftentimes, failure to market altogether. We typically see businesses take 6-18 months to update their offerings, pricings, and payment models with an average 40% success rate.

With an agile monetization platform, manufacturing companies have the ability to launch new products -- and iterate -- quickly. Examples include:

- NCR needed a platform to help enable a new product launch and enable sales and services to price, package, and easily make changes to subscriptions. With the right infrastructure, the 125-year "young" enterprise was able to successfully launch NCR Silver 3.0 within a two-month window and make it available in more than 400 sites in 6 different countries.
- Arrow Electronics was limited with pricing: they could only offer simple pricing with monthly and annual plans that offered limited room for customization. With a dedicated agile monetization platform, Arrow is now able to easily iterate and test new pricing models, such as pay-per-use and usage models.

5.1.2. SUBSCRIPTION LIFECYCLE MANAGEMENT

New requirement:

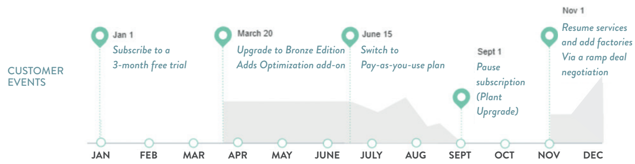
In a traditional business model, the major focus is to push as many products through as many channels as possible. But with new monetization models, businesses aren't just selling one-off products -- they are monetizing relationships and optimizing customer lifetime value.

With the customer acquisition cost (CAC) for new sales vs upsells at 4-7x, it's obvious the importance of increasing customer lifetime value. In fact, according to a recent Zuora Subscription Economy Benchmark report, 70% of a subscription company's revenue comes from existing customers through upsells, add-ons, and renewals. Businesses that enable customers to make changes to subscriptions over time, see positive results:

For companies that average one change for every single subscription, the growth rate almost triples from the baseline to 28% YoY growth. And companies with more subscription changes see reduced churn: Companies with no subscription changes have more than a 30% churn rate. Companies with one change per subscription have less than 20% churn rate.

A dynamic lifecycle could look something like this:

Example of a subscriber lifecycle



And this trend is increasing: According to the Subscription Economy Index, in 2015, only 30% of subscriptions had a change after the initial sign-up.

Today, 60% of all 90M subscriptions have at least one change after initial sign-up -- and, on average, we see four changes per subscription every year.

Core questions:

- Do you have a path forward for customers to move from offer to offer (e.g. bronze > silver > gold)?
- Do you have add-ons or options that can be added throughout the contract or point-in-time?
- Is renewal automated? Does it lead to pricing updates/uplift upon renewal?
- Should your "land & expand" strategy be secured through "ramp-deals" when possible -- i.e. contractually committing to progressive expansions where products or pricing can change?
- Can you make ongoing updates to the set of time-based periods in which pricing can change?
- Is your back office prepared for the downstream implications of changes throughout the customer lifecycle?
- Do you provide enough flexibility in response to your customers' ever-changing needs, in order to maximize your revenue?

New critical capability:

Manufacturing companies traditionally rely on ERPs to manage orders. But orders in an ERP system only understand one-time sales: quantity times price.

It's all about managing a linear process from quote to delivery -- and then hoping and waiting for the next order. This means that ERPs don't enable businesses to easily modify contracts through any channels, such as salespeople, self-service, or partners.

To effectively handle ongoing changes, you need a system that understands the notion of lifecycle and time-dependency of a contract and can track and manage changes over time. The more your sales teams, partners, or even customers themselves can tailor and change a subscription to their exact needs, the more value they will receive from it -- so you need to design offerings and operations to allow for these changes. And you need the ability to automate the billing, revenue, and reporting impacts of these changes on your back office.

With a system that can effectively manage the subscription lifecycle, manufacturing companies can grow their recurring revenue without placing additional burden on the back office. Examples include:

- Arrow found the need to enrich its offering, upgrades and renewals increased. But before having an agile monetization platform, they had to process those changes via massive spreadsheets. Today, customers can even manage their subscriptions online and information automatically flows into billing and finance.
- In recent years, recurring revenue had grown to represent nearly 55 percent of NCR's business.

5.1.3. DIGITAL RECURRING RATING & INVOICING

New requirement:

When a customer signs up for your new service, he's engaging in a recurring relationship with your business. From a billing perspective, this leads to a recurring invoicing process with added complexity. Specifically:

> "*On our old platform [ERP], we weren't able to launch these kinds of (recurring) services with agility. We didn't have flexibility in terms of pricing strategies. Time-to-market was also holding us back and our adaptability to evolving customer needs was at best questionable.*"
>
> *Pierre-Yves Noel, Cloud Services Product Owner at Alcatel-Lucent Enterprises*

- **Multiple invoices.** A single recurring order usually leads to multiple invoices (e.g., monthly, quarterly, or any other period of time)
- **Increased invoice volume.** The number of invoices will dramatically inflate -- most likely with a lower average amount per invoice. For example, when NCR made the shift from a single sale to selling point-of-sales-as-a-service per month over a period of several years, the increase in invoice was exponential.
- **Wealth of monetization models and frequencies within a single invoice.** The amount to invoice for each line item/charge can itself be based on a variety of charge models and can be directly impacted by events. For example, a customer could be charged for a machine-as-a-service subscription by month, for an advanced analytics software bundle per user by year, and/or for data export per consumed API per quarter (usage-based).
- **Variety of dynamic and external invoice triggers.** Invoicing of certain charges can be triggered by multiple events: when a customer signs up, when service is provisioned, upon customer acceptance, or at any other key milestone. This means the invoicing process should be able to integrate and leverage external information flows as they occur (usages, key dates, etc.).
- **Prorations.** Each change within a customer lifecycle is expected to be reflected via a proration. For example, if a subscriber were to upgrade from a bronze edition to gold on the 14th of May vs the 4th of May, this needs to be clearly reflected in the invoice.

How much you charge your customers is constantly changing given ongoing events across a subscription lifecycle.

To charge accurately, you need to take into account the service plan that was signed up for; usages and potential overages; upgrades and downgrades; and many other events.

Core questions:

- What would be the impact on your finance operations team were they to have to handle a major increase in invoice volume with your current processes and systems?
- When customers change their contracts (upgrades, downgrades, cross-sells, suspensions, etc.), how will you reflect this within your invoicing process?
- How do your current systems handle complex invoicing rules such as prorations, event-driven billing triggers, etc.?
- Can you accurately track, manage, and invoice for usage (pay-as-you-go, overages, etc.)?
- Do you have the ability to invoice different subscribers at different times (i.e. in response to different event triggers)?

New critical capability:

Businesses transforming to new business models need to have a system that allows for seamless and automated invoicing that accurately reflects any customer event at scale.

To have a completely accurate invoice means maximum automation; accurate prorations; ability to manage usage, overages and rollover of units; and accurate billing, regardless of invoice owners' changes, pricing plan changes, or contract changes.

ERPs are sufficient for a linear invoicing process, but not built to manage a recurring, events-driven, usage-based, and time-based invoicing process -- with complex dynamic rating rules.

Failing to tackle the invoicing challenge properly means that you're leaving money on the table. For example, we've seen an automotive information company misbilling ~$30k/month due to usage and proration complexities. And it puts you at risk for revenue leakage: In complex billing environments without the right systems, revenue leakage can "eat" from 1 to 5% of your topline.

Without an agile billing system, you also add extra burden to your back-office team (both for invoicing and in terms of increased customer service demands in response to customer questions about incorrect or unclear invoices). With an unoptimized quote-to-cash process, we see a >.5 FTE increase in back-office operations per 1.000 invoices / month. Failure to manage invoice complexity also negatively impacts the customer experience. And these problems will only get exponentially worse as you scale.

With an agile billing system, manufacturing companies can decrease headcount and increase billing efficiency and accuracy. Examples include:

- eMoney Advisors, a wealth management software leader with 57,000 subscribers, slashed the time of their back office operations from signature to payment from 500 hours to 34 hours – a 93% improvement – by optimizing their process through an agile billing system.
- After implementing an agile billing system for their subscription-only service NCR Silver, NCR was able to free up at least five FTEs (full-time equivalents) worth of work, allowing them to reassign staff to focus on customer engagement rather than wrestling with spreadsheets.

5.1.4. DIGITAL AND RECURRING PAYMENT FLEXIBILITY AND COVERAGE

New requirement:

Increased invoice volume -- that's recurring and with a lower average amount per invoice -- necessarily leads to the need for new payment, reconciliation, and dunning strategies.

Of course, for manufacturing's largest invoices, a standard bank transfer will remain a critical payment method.

For example, a customer probably wouldn't pay for an industrial robotic systems with a credit card! But for business model innovation -- as you start to monetize services for smaller, ongoing payments -- it's important to think about increasing payment options.

And yet, according to a 2016 Global Payments Insights Survey, 59% of organizations are not confident that they are flexible enough to drive innovation in payments and 65% of organizations recognize they face growing competition when it comes to payments.

Every country has different currencies, payment methods, and gateways.

The result is an explosion of payment options: there are hundreds of both local and global digital payment methods and 60+ payment gateways -- none of which provide complete coverage on their own. We typically see businesses with an average of 3+ payment gateways (e.g.: WorldPay, Chase Paymentech, Amazon Pay, Paypal, Sony Pay, Gocardless, etc.) and have seen that such a multi-gateway strategy can reduce gateway costs by between 0.25 - 1 points of revenue.

Depending on the price point, for some services with recurring payments, the only way to scale is to rely on direct debit strategies leveraging digital payment methods (ACH/SEPA/BACS, credit/debit cards, etc.). These approaches are not only reserved for B2C or innovative cloud startups. They are straightforward and serve the purposes of a wide variety of businesses across industries.

Increased payment complexity can also lead to greater security risk. Businesses operating under new business models with recurring payments need to find a way to store subscriber payment methods securely, in compliance with market standards.

As you build relationships with your customers and maximize their lifetime value, you need to rethink how you manage payment failure and dunning. For example, a long-time loyal customer whose latest payment failed might not receive the same type of communication as a newer customer. You need the flexibility to customize how you manage payments.

Core questions:

- Can you link payments to a contract lifecycle?
- Can you rethink your payment strategy for some of your digitally transformed business models?
- Do you know the key payment options for every country you do business in?
- How will you store subscribers' recurring payment information?
- Do you need to have different payment communications for different customers?
- What would an ideal payment retry process look like?
- Could involuntary churn become a big issue for your business based on the segments you'd like to serve?

New critical capability:

To maximize recurring cash collections, businesses transforming to new business model should have the ability to:

- **Automate payment process.** The payment process should be automated in close alignment with invoice automation to ensure scalability and reduce risks.
- **Capture payment method.** You need the ability to transparently capture customers' favorite payment methods. To do so requires a global payment engine, natively integrated with key payment gateways but providing a unified payment methods capture/update flow and storage. This ensures a seamless experience for customers and an optimal conversion rate.
- **Store customer payment methods securely to ensure PCI compliance.** Regardless of how you process payments, it is critical to centralize your customer payment methods, i.e. by offering an abstraction layer to payment gateways for global and comprehensive payment coverage. Storage should be "PCI Level 1" (Payment Card Industry) compliant-safe for subscribers' recurring payment methods when it comes to credit and debit cards.
- **Differentiate payment communications.** You should be able to differentiate communications in the case of connected / digital service -- and even "pause" / "deprovision" as a dunning leverage.
- **Minimize failure rate.** For digital payments, there are intelligent retry workflow and proactive approaches to minimize failure rate (e.g., payment method updaters, retry rules, etc.).

Optimal collection means optimized cash flow and prevented revenue leakage. Payments are also an important part of the customer experience. Unifying payments to create a secure, consistent, frictionless payment experience inspires consumer trust, security, and loyalty.

Manufacturing has traditionally relied on ERPs to manage the payment process. However, ERPs do not understand recurring payments or digital payment methods and are unable to link payments to the service or contract lifecycle for deprovisioning purposes.Compromising on the payment and collection strategy will negatively impact your cash flow. On the flip side, businesses can recover 2.5% to 5% just by employing smart payment retry or chargeback managements.

In addition, without a seamless payment experience, businesses are unable to optimize conversion rates, and are at risk of involuntary churn -- a big risk representing an average of 2.5% of ARR.

The ability to accept recurring payments enables manufacturing companies to scale their offerings. For example:

- NCR now has multiple offerings. NCR Silver starts at $79 per month with a contract, with plans increasing from there ($89/month for NCR Silver with EMV service and $149/month for NCR Silver Pro Restaurant edition) with additional costs for additional sites, devices, and month-to-month subscriptions.
- MANN+HUMMEL'S Predictive Maintenance for Heavy Duty Fleets called Senzit starts at $20/month per device for their premium plan, with a 45-day trial.
- A leading SaaS provider was experiencing $20M per year in payment failures due to a homegrown integration which lacked reliability as well as salvage or fraud prevention capabilities.

5.1.5. AUDIT-READY, AUTOMATED FINANCIAL OPERATIONS

New requirement:

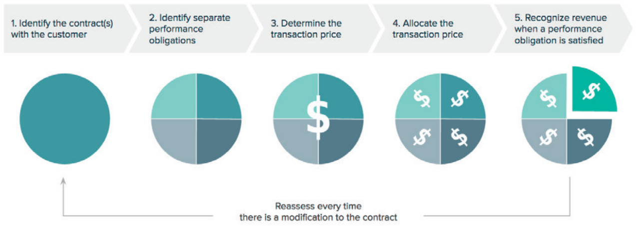
As we have seen, these new business models lead to an exponential increase in customer events and transaction volume in terms of orders, invoices, and payments. These processes need to be automated to enable business scalability. But, even with automation, your finance and operations teams will face an additional challenge: revenue recognition.

The shift from short-term, one-time isolated transactions requires companies to ensure compliance with ASC 606 or IFRS 15 accounting standards. In short, the new standards issued in 2018 -- the Federal Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) -- are designed to simplify and harmonize revenue recognition practices across different industries, jurisdictions, and markets in order to enable transparent comparisons at a global scale.

These new standards are based on one overarching principle: **Companies must recognize revenue when goods and services are transferred to the customer**, in an amount that is proportionate to what has been delivered at that point.

The impact of these new standards on subscription companies is profound. Adopting and implementing these new standards is more than just a headache. It will directly impact the growth engines at the heart of your business.

The standards are built around a five-step model:



As a result, compliance with the new standards presents a particularly difficult challenge for companies shifting to new business models.

That's why, according to a recent Gartner report, "By 2022, 70% of mid-to-large enterprise businesses will be using an automated revenue management solution to support complex billing and revenue recognition compliance."

The recurring nature of subscription and usage-based models brings the following complexities:

- **Subscription are rarely recognized upfront, unlike traditional one-off sales.** Let's take a very simple example: a $120K annual subscription fee for a digital monitoring capability, at a $1K per user per year for 120 users for a 3-year contract. This would lead to recognizing $10,000 per month during the subscription period. Since product-focused industries have traditionally recognized revenue upon transfer of property or based on milestones, recognizing revenue during a subscription period instead is a big shift.
- **Subscriptions change frequently.** While traditional products are typically a "ship, bill & forget" type of sales process, as we've previously noted, subscriptions involve ongoing changes. These changes can make it difficult to identify the contract. In some circumstances, contract changes are handled as a modification to the existing contract, while in other situations, a separate contract is created. This means the revenue contract has to be reassessed and revenue within the contract must be reallocated properly.
- **Subscriptions are complex and rolled out over time.** The handling of common subscription characteristics—e.g. evergreen subscriptions, nonrefundable upfront fees—becomes problematic as companies determine how to handle different recognition patterns and manage differences in "invoices dollars" vs "revenue dollars."
- Similarly, usage-based pricing can make determination of the transaction price more complicated as estimations and judgment become important. This all adds to the difficulty of accurately tracking contracted, recognized, and unbilled deferred revenue.

Core questions:

- How will you structure your subscription offerings? Is it a simple product? A bundle? Are there options?
- Have you already involved your Finance and Audit teams?
- Have you already defined and reviewed the Terms & Conditions of your future contracts, and their impact on revenue recognition?
- How will you recognize revenue in compliance with the ASC606/IFRS15 standards?
- How different are the new standards from your existing revenue recognition rules?

New critical capability:

Transforming manufacturing businesses require a system that can help Finance operations to tackle the revenue recognition challenge at scale -- especially for companies that may have never had to manage complex contracts and revenue models.

ERPs were not designed to manage the complexity of these new recurring revenue models in accordance with these new standards. The core ERP data model doesn't understand the complexity of a recurring contract and wasn't designed to manage deferred revenue, multi-element arrangements, or contract modifications.

We typically see Finance teams using spreadsheets, manual operations or their corporate performance tools as a fallback solution. Not only are these workarounds insufficient, time-consuming, and error-prone, but they're not responsive to the standards new five-step model for revenue recognition.

This translates into an exponential burden on the finance function resulting in increased costs, slower closing, reduced visibility on revenue KPIs, and risks of non-compliance.

Businesses need to complement ERPs with a dedicated Revenue Automation layer that is:

- IFRS 15/ASC 606 compliant, with a data model designed to handle the complexities of deferred revenue, multi-element arrangements, and contract modifications
- Closely aligned with the General Ledger of your ERP

An automated revenue management solution ensures the viability, scalability, and financial compliance of new business models -- while also ensuring an optimal time-to-close. For example:

- Schneider Electric has projected $2B in recurring revenue in the next 3 years as a result of implementing a finance solution to automate complex revenue recognition and enable quick month-end accounting close processes.
- After implementing a revenue automation system, SurveyMonkey was able to significantly improve their revenue tracking process, spending about 50% less time booking revenue entries.
- Fortinet was able to convert four million lines of waterfall conversion data with >90% accuracy with the right revenue automation system.

5.1.6. REAL-TIME ACCESS TO KEY MONETIZATION METRICS

New requirement:

Manufacturing companies are typically run by GAAP metrics. Those metrics, such as Sales, Cost of Goods Sold, or Gross Profit are, by definition, backward-looking. However, with new innovative business models comes new forward-looking metrics. These metrics translate the predictability and recurring nature of the model.

Some of these key new metrics include:

- **ARR (Annual Recurring Revenue)** - ARR shows the money that comes in every year for the life of a contract, allowing for predictability of revenue. It's a good measurement of the health of a business.
- **Churn rate** - Also called attrition rate, churn rate is a measurement of churn, i.e. subscriber turnover. Churn rate is the rate at which a business loses subscribers.
- **CLV (Customer Lifetime Value)** - Customer lifetime value estimates the total value of a customer over the course of its lifetime, calculating for both revenue and cost. CLV sees subscribers as assets and is a useful tool in managing and focusing on maintaining long-term subscriber relationships.

- **ARPU (average revenue per user)** - The ARPU measures the revenue of an individual subscriber as calculated by taking total revenue for a defined time period and dividing that revenue by the total number of subscribers during that time period. The ARPU is valuable for providing a per user view of revenue.
- **Growth Efficiency Index** - The cost of growth is measured by the growth efficiency index (GEI), which is the sales, marketing, and onboarding costs that are required to earn $1 in additional annual recurring revenue (ARR).

As explained in previous chapters, these metrics are also critical to steer, assess, and communicate the value of a recurring business. In a nutshell, businesses offering subscriptions live and die by these metrics!

While ERPs were sufficient to report GAAP metrics, they can't automatically calculate these new dynamic metrics that continuously need to be recalculated. As a result, producing those metrics from your traditional architecture will require manual calculations, Excel spreadsheets, and other insufficient, inefficient, and error-prone workarounds that lead to incorrect KPIs, uninformed decisions, additional costs, and a bottleneck to tackling scale.

Core questions:

- Do you know the future target operating model of your new business model?
- Do you know what metrics should support decision making for this operating model, by measuring the real-time health of your new business model?
- How would you currently pull those metrics?

New critical capability:

Businesses need the ability to calculate key subscription metrics in real-time for any transaction and the ability to surface these metrics across the order-to-revenue process.

These metrics enable businesses not only to monitor financial performance but to predict future outcomes, drive decisions, and uncover new revenue opportunities. Since, as we already noted, on average it is 7x more expensive to get a new customer than retain an existing one, the importance of proactively monitoring subscription metrics cannot be overstated.

Combining reporting on these new set of metrics with behavioral, usage, and demographics can generate insights that empower businesses to continuously improve segments and associated actions with successful feedback loops.

For example, the ability to identify and anticipate churn enables businesses to mitigate churn risk through relevant campaigns. When key data and KPIs are automatically generated, businesses can spend more time acting on the data, rather than struggling to compile it.

When businesses have real-time access to monetization metrics, they are better positioned to steer, assess, and communicate the value of a recurring business.

For example:

- With the right platform, NCR Silver management is able to get accurate reporting on previously unknown keystone metrics, such as monthly recurring revenue (MRR) and total revenue per customer (TRC).
- A leading SaaS solution leveraged actionable analytics on recurring metrics across their customer data to find opportunities for growth -- which resulted in increases in upsells by 134%, renewal rates by 16%, customer engagement by 19%, and net promoter score by 58%.

5.2. BUSINESS IMPACTS AND CONSEQUENCES OF NOT ENABLING THESE 6 CAPABILITIES

Manufacturers willing to move towards new business models need to nail these 6 capabilities in order to deliver optimal monetization potential across the subscriber base.

According to Forrester, The ROI of Digital Business Transformation, "77% of firms that reported themselves as being in a mature phase of digital transformation reported an increase of at least 10% in their year-over-year revenue growth rate."

Failing on any of these 6 critical capabilities will result in:

- **Missed revenue opportunities.** The inability to maximize revenue is the most important issue.
- **Failure to reach full market potential.** With other manufacturing companies taking on new business models and focusing on providing greater value, competition is fiercer than ever.

> "*My reason for being hired was to help finance be ready as business models were deployed in the organization. I knew I would have challenges, but didn't know how big or how broad the challenges were, everything from system readiness to deciding how to price our commissions. We are making quick decisive changes as we move forward with our new strategy."*
>
> *Terrence Mendez, Chief Accounting Officer, Hitachi Vantara - implemented a revenue automation solution for ASC606 in 4.5 months*

- **Revenue leakage.** When you can't properly bill or collect from your customers -- especially due to the inherent complexity of the charging models -- this results in revenue leakage.
- **Suboptimal experience for consumers.** A poor customer experience can lead to weaker conversion rates and/or higher churn.
- **Delayed go-to-market.** Time-to-market is drastically slowed by system limitations.
- **Increased cost of operations/overhead functions** (sales, operations, finance, etc.). Failing on the scalability of back-office operations results in higher overheads which directly impacts profit margins.
- **Higher IT costs and shadow IT.** Businesses relying on workarounds and custom developments in lieu of having the right systems in place will face massive overhead on the organization and an increased risk of errors.
- **Risks of non-compliance.** This is especially true in terms of account receivable / revenue recognition (IFRS15/ASC606) due to these new paradigms associated with recurring business models.

In a nutshell, don't let your systems hold back your growth strategies.

5.3. A NEW ORDER-TO-REVENUE ARCHITECTURE FOR BUSINESS MODEL INNOVATION

Traditional IT architecture simply isn't built to support business model innovation. Business model innovation requires digital transformation.

The right order-to-revenue architecture needs to support:

- The six capabilities outlined in this section
- A fast time-to-market to reap the benefits early
- The ability to iterate on the business model with a low cost of failure to maximize opportunity
- Complete openness in order to integrate into the existing IT landscape (ERP, CRM), and also with the new digital ecosystem (IoT platform, datalakes, API gateways, digital service platform, etc.) to orchestrate the entire quote-to-revenue flow
- Scalability and audit-readiness to support enterprise requirements

6. FINDINGS AND CONCLUSION

1. Manufacturers have mostly leveraged Industry 4.0 innovation for efficiency, while the biggest opportunity lays in Business Model transformation

2. This business model transformation towards subscription and consumption-based models must be seen as a win-win: creating more monetization opportunities while improving the customer experience

3. In a similar fashion as what happened in other industries like Software or Media, Manufacturing companies will face business model disruption and new competition – the question is not "if" but "when" and "how"

4. This business model disruption is a threat, but can turn into a once-in-a-century opportunity to generate new recurring revenue streams: those that have successfully executed these strategies are reaping the benefits – growing 5-9x faster than S&P 500 companies according to the latest Subscription Economy Index

5. Even though manufacturers acknowledge the relevancy of topline generation and the shift of value pools towards new business models, most of them haven't articulated dedicated go-to-market strategies

6. Manufacturers should proactively scrutinize their current product portfolio to analyze how it can be transformed towards new business models

7. At a high level, we identified 3 different plays to gradually transform the portfolio: (I) connected services / (II) repackage-to-recurring / (III) product-as-a-service

8. Each of these 3 plays can coexist and need to be applied depending on the unique positioning of the manufacturer, the product and the customer segment

9. This transformation requires strong and direct sponsorship from the CEO – as well as being championed by key stakeholders: CMO, CTO, CIO, CFO, COO

10. Business model transformation needs to be dynamically planned because of its highly disruptive nature to the equilibrium of the company across stakeholder functions, from financial statements to the target operating model, business processes, and the entire organizational structure

11. The transformation will indeed be gradual: it will most likely follow a U-shaped revenue pattern, as recognized revenues and cashflow typically dip before bouncing back after the transitional period

12. As we've observed in the Software-as-a-Service industry, this transition is generally multi-year - two to more than five years for Software companies where the goods being sold are digital by essence

13. It will likely take a lot longer in the manufacturing space because of the tangible aspect and associated marginal cost of the core solution being sold

14. The pace of transformation will be driven by at least 4 key variables: the P&L/BS/Cashflow impacts, competition moves, customer readiness and managerial courage

15. The company will need an agile mindset to operate the transformation and the CIOs & CTOs should be supporting this with the help of the CEO: the more disruptive, the more agile the approach

16. Enabling this transformation will require new capabilities that are typically not supported by the current information system – usually focused around ERP systems within manufacturing companies

17. The 6 new critical capabilities best-in-class leverage from their information system are:

- Agile pricing & packaging, to power new monetization models
- Subscription lifecycle management, to enable recurring relationships
- Digital recurring rating & invoicing, to support new billing approaches
- Digital recurring payment flexibility and coverage, to support new collection processes
- Audit-ready, automated financial operations, to respect new revenue recognition imperatives
- Real-time access to key monetization metrics, to provide target operating model success follow-up

18. Roland Berger and Zuora can team up to help manufacturers to plan and operate this strategic transformation

Business model transformation is a long journey that deserves ambitious targets: we believe that each company should aim at reaching 20% penetration of new equipment sales with recurring ("as a Service") solutions within a 5-year time horizon.

7. LEVERAGING THE BUSINESS TRANSFORMATION FRAMEWORK

The switch from current business models to subscription and consumption-based revenue business models is a critical move for manufacturing companies. But these new business models are significantly more complex than traditional product ones and thus successful transformation will require the right expertise and support.

We believe Roland Berger's strategic know-how in new business model definition, combined with Zuora's expertise in digital business model transformation provides a pragmatic and actionable solution:

- Roland Berger will advise on the new value proposition definitions, solution/market fit analysis, the financial modelling of the new business models, and the definition and implementation of your change management plan
- Zuora, with 10+ years of Subscription Economy expertise, will provide agile software-as-a-service monetization and help you quickly get digital prototypes to market and leverage their existing experience across 1.000+ customers

Both Roland Berger and Zuora offer a best-in-class approach that relies on the following two pillars:

- **Top management commitment** to ensure alignment and commitment of all key stakeholders (including Sales, Operations, Product, IT, Finance) – and the sponsorship and mandate for innovation
- **Agile approach** to help you shape and test the new business model to show tangible impacts in weeks, not years

This means a fast closed-loop between recommendations and delivery, enabling manufacturers to test, learn, and iterate on their portfolio transformation following this playbook's learnings.

In short, together Roland Berger and Zuora offer a "packaged starter kit" for Manufacturers ready and willing to make a quantum leap forward in their digital transformation. Our joint approach aims to ignite, through business model innovation, the single most important engine, yet sometimes forgotten in Industry 4.0: the growth engine.

ADDENDUM

THE SUBSCRIPTION ECONOMY INDEX

INTRODUCTION

The Subscription Economy Index™ report (or SEI) is based on anonymized, aggregated, system-generated activity on the Zuora service, a comprehensive platform for subscription-based businesses. This index reflects the growth metrics of hundreds of companies around the world, and spans a number of industries including SaaS, IoT, media, telecommunications, and corporate services. Because the SEI data goes back to 2012, it reflects seven years of growth of the Subscription Economy®. This edition of the Subscription Economy Index report (SEI) features new results from the second half of the 2018 calendar year.

The breadth and depth of the data analyzed in this study speak to the rapid ascent of the Subscription Economy. IDC predicts that by 2020, 50% of the world's largest enterprises will see the majority of their business depends on their ability to create digitally enhanced products, services, and experiences. Gartner predicts that by 2023, 75% of organizations selling direct to consumers will offer subscription services. And in its Digital Commerce State of the Union survey, Gartner found that 70% of organizations have deployed, or are considering the deployment of, subscription services. This is a broad, secular shift.

Recurring revenue-based business models have exploded over the last decade owing to digitally enabled, pay-as-you-go services. As globalization has placed increasing margin strains on manufacturing and product sales, subscription-based businesses have benefited from stable and predictable revenue projections, data-driven insights from direct consumer relationships, and large economies of scale owing to relatively small fixed costs.

The companies that have been featured in this survey for the past seven years have seen their sales grow by more than 300%. While those growth rates may fluctuate, and are susceptible to broader market trends, recurring revenue models offer sustained and predictable returns that largely avoid the volatility of traditional "boom or bust" product cycles.

This study was conducted by Zuora's Chief Data Scientist, Carl Gold.

Download the entire report at www.zuora.com/resource/subscription-economy-index

HIGHLIGHTS

Subscription companies have grown more than 300% in the past seven years

An average company in the Subscription Economy has grown its revenue by 321% since the launch of the index in January 2012, a compound annual growth rate of 18.1%. In addition, the Subscription Economy Main Index, in calendar year 2018, crossed 300 percent growth for the first time in Q3 and ended Q4 at 321.

Overall, subscription businesses are growing revenues about 5 times faster than S&P 500 company revenues and U.S. retail sales

Subscription companies grew 18.1% versus a 3.6% average for both the S&P 500 and U.S. retail sales in the seven years from January 1, 2012 to December 31, 2018. The long-term historical average growth rate of the SEI level is 18.1%, and 2018 ended with an above average growth rate of 19.8%.

The Subscription Economy Index growth rate correlates with GDP

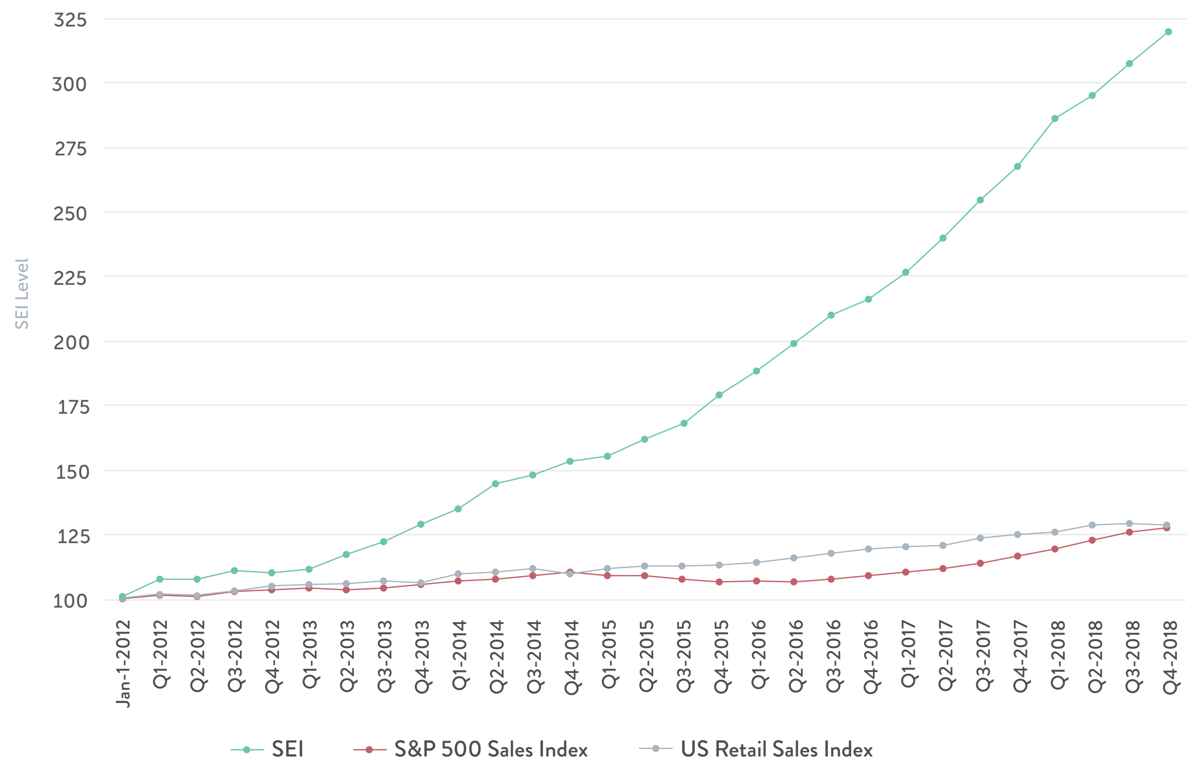
The SEI data demonstrated a consistent pattern with broader economic trends. In 2017, the SEI companies led the way into a period of high growth in Q1, one quarter before GDP growth accelerated in Q2. In the first half of 2018, growth in the SEI level peaked in Q1, one quarter before the peak of GDP growth in Q2. And in the latter part of 2018, the Subscription Economy led the way again, slowing in Q2 while GDP growth began slowing in Q3 and is still slowing now while the SEI level is on the rise.

European subscription growth surpasses North America

Europe is now trending well ahead of North America with cumulative growth of 64% over the course of 2017 and 2018, compared to 48% growth for North America over the same two years. Overall, EMEA subscription companies saw a CAGR of 25.6% and North American companies saw a CAGR of 21.6%.

Asia-Pacific (APAC) Subscription Economy growth exceeds sales growth in regional stock market indices by a wide margin

The APAC SEI level rose around 16% over the year 2018, giving APAC subscription companies almost ten times the growth of ASX index (Australia) sales per share index, four times the growth of NZX index (New Zealand) sales per share, and 2.5 times the growth of the Nikkei index (Japan) sales per share.



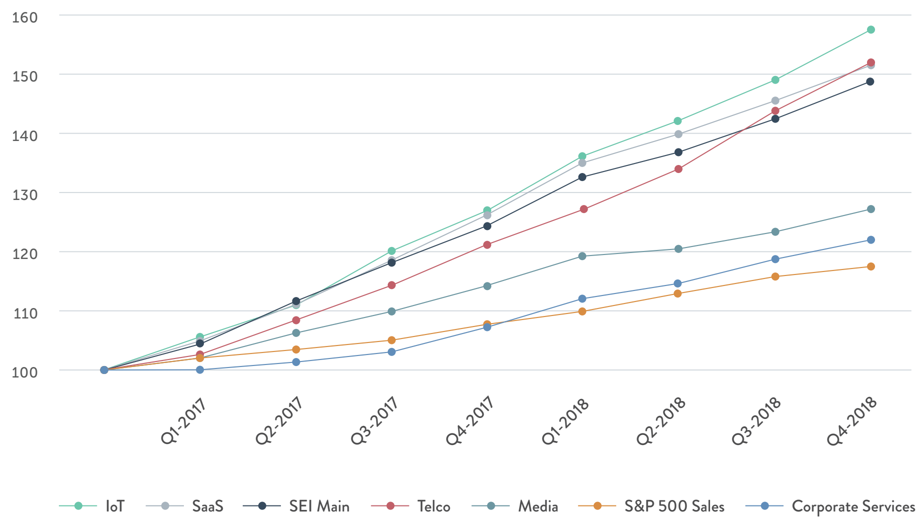
Quarterly values of the Subscription Economy Index (SEI) level, in comparison to indices of the S&P 500 Sales per Share and U.S. Retail Sales. All indices take a base value of 100 on January 1, 2012, and grow in proportion to the quarterly increase in the one year trailing total sales that they measure. Over a period of 7 years (January 1, 2012 to Dec 31, 2018), the SEI companies grew at an average annual rate of 18.1%. The SEI level is now at nearly 325, indicating that the average Subscription Economy company revenue has more than tripled over these 7 years. The S&P 500 Sales per Share Index and U.S. retail sales both grew at an average annual rate of 3.6%. As a result total growth in sales for the traditional economy is just above 25% for the entire 7 years.

Subscription business sales have grown substantially faster than two key public benchmarks—S&P 500 Sales and U.S. retail sales. Overall, the SEI data reveals that subscription businesses grew revenues about 5 times faster than S&P 500 company revenues (18.1% versus 3.6%) and U.S. retail sales (18.1% versus 3.8%) from January 1, 2012 to December 31, 2018.

Average Annualized growth rates for the Subscription Economy IndexTM companies (SEI, red line and left axis) and U.S. Gross Domestic Product (GDP, green line and right axis) measured on a quarterly basis. Despite the very different scale of the growth rates, the trends are similar: Growth fell in late 2016 and picked up in the first half of 2017, then slowed again in the first half of 2018. But the trends in 2017 and 2018 appeared first in the SEI data, and the GDP followed in subsequent quarters.

Recent years have shown increasing correlation between the trends in the Subscription Economy and in the traditional economy.This started back in late 2016 and early 2017, when growth slowed in the latter part of the year. Growth then recovered later in 2017, with Subscription Economy growth beginning to recover in Q1 and GDP growth following in Q2. This period of heightened growth lasted for about a year, with Subscription Economy growth slowing in Q2 of 2018. GDP growth began to fall Q3 2018, and then fell precipitously in Q4. Subscription Economy growth meanwhile has already begun to recover, though it remains to be seen if 2019 will see a return to 2017 growth rates.

SUBSCRIPTION REVENUE GROWTH BY COMPANY TYPE



GROWTH RATES BY INDUSTRY

	Corporate Services	IoT	Media	SaaS	Telecommuni-cations
2017	7%	24%	13%	23%	19%
2018	13%	22%	11%	19%	23%

SaaS was the fastest growing sector beginning in January 2017. But once the IoT sub-index was introduced in mid-2017, this new IoT sub-index grew even faster. The only sector unaffected by the slowdown in 2018 was Telecommunications: Telecommunications accelerated in 2018 and ended up equal to SaaS for growth in this two-year period.

Which industries are thriving in the Subscription Economy? As a subscription billing and finance SaaS company based in Silicon Valley, Zuora has a significant customer base of other software vendors—both SaaS natives and on-premise vendors switching to recurring revenue models. Historically, SaaS has been one of the fastest growing sub-indices in the Subscription Economy. But since a sub-index was created for IoT companies, this sector has seen remarkable growth. IoT beat SaaS over this period. In this study, we define IoT companies as OEMs (Original Equipment Manufacturers) who are taking advantage of sensors and connectivity in order to diversify their revenue mix with digital services. SaaS also saw stiff competition from Telecommunications which surged to catch up in the end of 2018.

REVENUE BAND

GROWTH RATES BY REVENUE BAND

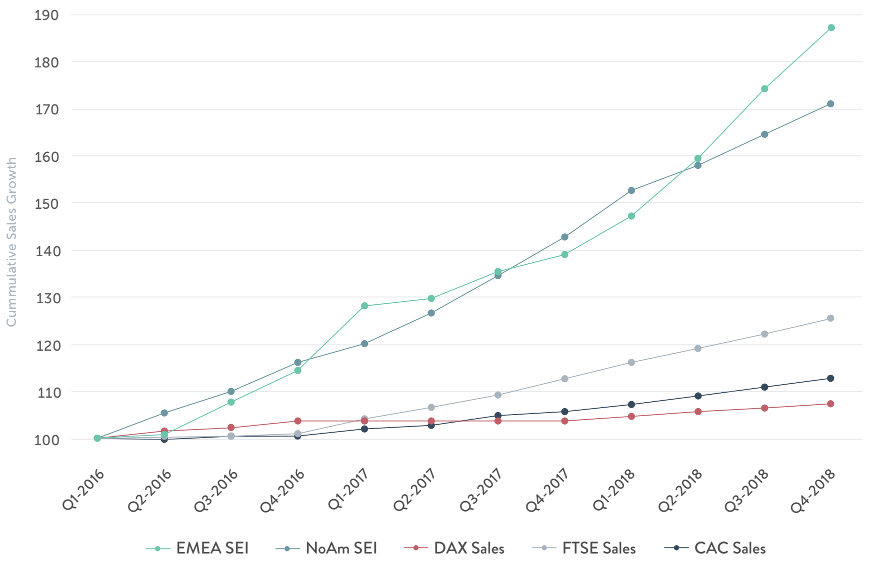
	<$1M	$1M-$20M	$20M-$100M	$100M
2018	17%	22%	17%	26%
2017	17%	18%	18%	19%

Large companies, those with more than $100M+ in revenue, have grown the fastest throughout this period.

Large companies have an advantage in the Subscription Economy. The sub-index made up of $100M+ constituents has been the highest performing since its inception in 2014, and that trend continued in 2018. In contrast to start-ups, enterprises have more resources, more distribution, more new acquisitions, and more channels to grow. As a result, they benefit from the network effects mentioned earlier in this study.

Note: Revenue band refers to the overall consolidated revenue of the entity, not the subscription revenue running on Zuora.

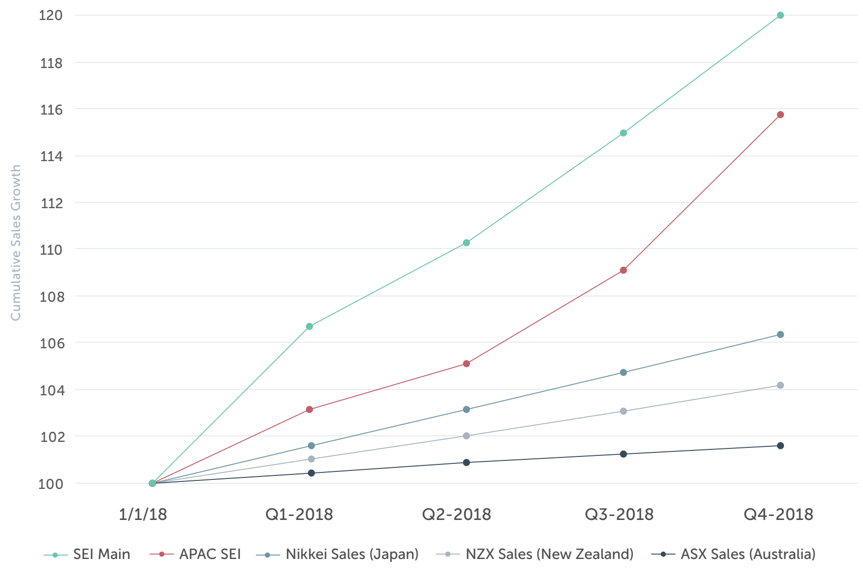
GROWTH BY REGION: NORTH AMERICA AND EMEA



The figure shows the relative growth in recurring revenue for the EMEA Sub-Index of the SEI report (Green) and the North America Sub-Index of the SEI report (Blue). In each quarter, the index is increased by the same percentage as the percentage growth in each region. Starting from a base value of 100 at the end of Q1 2016 the EMEA index has grown to 187 and the North America index has grown to 171. Over the years North America took turns having faster growth, but then EMEA accelerated decisively to surpass a slowing North America in 2018. Also shown are the cumulative growth in sales per share for companies of the major European stock market indices: The FTSE index, the CAC 40 (Cotation Assistée en Continu; France) Index, and the DAX index (Deutscher Aktienindex; Germany). The EMEA index had more than ten times the sales growth of the DAX index, seven times the sales growth as the CAC index, and more than three times the sales growth as the FTSE Index.

The Subscription Economy Index report has included an EMEA sub-index with history dating back to Q1 2016, which has seen 187% growth since then. Since then, the EMEA and North America indices repeatedly exchanged places as the fastest growing region: EMEA growth starting slowly in Q2 2016 but accelerated ahead of North America in 2017. North America pulled ahead again in late 2017 and early 2018, but then Q2 of 2018 was the faster quarter on record for EMEA SEI growth, at the same time as North America was slowing. Now EMEA is clearly ahead of North America, having had 87% growth over this time period in comparison to just 71% for the North American SEI level. In short, the Subscription Economy in Europe is clearly on the ascent. Over the past 33 months, European subscription companies have even bested their American counterparts' annual growth rate of around 20% with an even faster rate of 23% (CAGR of 25.6% and 21.6% respectively). This is remarkable because European economic growth rates overall have lagged behind North American growth rates for much of the past decade.

(NEW) GROWTH BY REGION: APAC



The figure shows the relative growth in recurring revenue for the APAC Sub-Index of the SEI level (Red) and the Global SEI level (Green), starting from a base value of 100 on January 1,2018. The APAC SEI level rose around 16% over the year, meaning the average company in the index had 16% sales growth during the year. Also shown are the cumulative growth in sales per share for companies of the major regional stock market indices: The ASX index (Australia), the NZX index (New Zealand), and the Nikkei index (Japan). The APAC SEI index level had almost ten times the sales growth of the ASX index, four times the sales growth of the NZX index, and 2.5 times the sales growth of the Nikkei index.

This is the first SEI report to release a new Asia-Pacific (APAC) sub-index with sales growth data for 2018. For the Subscription Economy Index report, the APAC region consists of Australia, New Zealand, and Japanese subscription-based companies. While subscription companies have existed in these countries for decades, we now have enough cohort data to accurately profile them. The APAC index rose from a base value of 100 to just under 116 for the year, meaning that the average subscription company in the APAC region saw sales increase by 16% in 2018. The growth of the Subscription Economy in the APAC region was much faster than sales growth for the companies in the major stock market indices in the region, as shown in the Figure.

SEI CONCLUSION

While Subscription Economy businesses are not guaranteed to succeed, companies with recurring revenue models tend to enjoy growth rates higher than the rest of the global market, enabled in part by the ability to extend average customer lifetimes, maximize ARPA and net account growth while minimizing churn rates, and take advantage of usage-based billing.

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About Zuora, Inc.

Zuora provides the leading cloud-based subscription management platform that functions as a system of record for subscription businesses across all industries. Powering the Subscription Economy®, the Zuora® platform was architected specifically for dynamic, recurring subscription business models and acts as an intelligent subscription management hub that automates and orchestrates the entire subscription order-to-cash process, including billing and revenue recognition. Zuora serves more than 1,000 companies around the world, including Box, Komatsu, Rogers, Schneider Electric, Xplornet and Zendesk. Headquartered in Silicon Valley, Zuora also operates offices in Atlanta, Boston, Denver, San Francisco, London, Paris, Munich, Beijing, Sydney, Chennai and Tokyo. To learn more about the Zuora platform, please visit www.zuora.com.

Roland Berger

About Roland Berger

Roland Berger, founded in 1967, is the only leading global consultancy of German heritage and European origin. With 2,400 employees working from 34 countries, we have successful operations in all major international markets. Our 50 offices are located in the key global business hubs. The consultancy is an independent partnership owned exclusively by 220 Partners.

For the past 50 years, Roland Berger has helped its clients manage change. Looking at the coming 50 years, we are committed to supporting our clients conquer the next frontier. To us, this means facilitating navigating the complexities that define our times by providing clients with the responsive strategies essential to success that lasts.

Terra Numerata

About Terra Numerata

Terra Numerata is a curated global network composed of startups and innovative companies offering services complementary to Roland Berger's expertise. Terra Numerata is working with internal teams to develop hybrid offerings to solve clients' pain points in innovative ways. This initiative demonstrate Roland Berger's engagement to work with an open innovation approach. It empowers consultants with new tools, skills and mindset to enhance their work and Roland Berger's projects.The ecosystem created under the Terra Numerata umbrella is accessible to all consultants online via a dedicated digital platform and via a team who is constantly assessing and selecting new partners.

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