

Perspective Book

How will your industry evolve?



40

years of expertise

95%

satisfaction rate

2 300

successful missions in
all industrial sectors

4 values

Commitment, Responsibility,
Team Spirit and Innovation

IAC Partners is a global strategy consulting company specialized in improving its clients' competitive edge.

Working together with IAC Partners you will benefit from a unique blend of top-tier consulting expertise - structured around 4 main practices - enriched by in-depth insights from experienced industry experts.

Our work is characterized by pragmatic tools and frameworks, with a hands-on, «make-it-happen» consulting approach.

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Dear Madam, Sir,

As Sam Walton, Walmart's founder, liked to remind us: "There is only one boss. The customer. And he can fire everybody in the company from the chairman on down, simply by spending his money somewhere else."

My first thoughts will, thus, naturally go to you, dear customers. You enabled us, after a year of strong growth in 2017, which saw our turnover and workforce double, to repeat this performance in 2018.

In 2018, we fulfilled our new ambitions, served our clients, key accounts and

Intermediate size companies, all around the world from strategy to technical & operational topics.

We opened new offices in Düsseldorf in January, Lyon in June and Chicago at year-end, to serve you locally as close as possible to you and your needs and in your own environment.

We changed our name, from Inter Action Consultants (often known as IAC) to IAC Partners, easily identifiable abroad and highlighting one of our cabinet's core values, Partnership and this goal of building

together a new leader in Consulting. These three letters, I.A.C, for Innovate, Accelerate, and Challenge represent what we want to be at your side, a consulting firm always allowing you to be one-step ahead, to be faster in your projects and push your limits to improve your competitiveness.

In order to address your challenges better, we streamlined our organization by creating four practices (Product Innovation & Development; Procurement & Supply Chain; Digital Transformations & Enabling Technology; Organization & Change) and eight Industries with their own specificity.

We improved our presence, with about twenty publications in the press, on subjects as diverse as Made in France, The Future of Nuclear Power, The New Silk Roads, The Strategies to Pursue & Cope with the Emergence of Mobility Services and Autonomous Vehicles...

By your side, let us make 2019 the year we take on your competitive challenges.

There is
only one boss.
The customer.

L



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Products Innovation & Development

Reaching true product excellence

by Jean-Baptiste Guillaume, Partner



Great products not only drive more revenues and margins, but they also create excitement all around the company and a sustainable edge on competition.

Product manufacturers faced several challenges in 2018: rising technical complexity of products ... while resources are scarcer and environment concerns grow.

First, product customization's rising demand indicates designing more complex and evolving ranges based on modular platforms. IoT / Big Data exploitation embeds more and more software and technology inside the products.

Nevertheless, such new integrations are a massive challenge as resources are scarce and manufacturers need to do more with less. Cost and efficiency of projects (Non-Recurring Cost as Engineering, Toolings, and time to market) are as important as direct cost of products.

Hence, to succeed in capturing more and more market share, industrial players need to define new processes and to connect new ecosystems to gather with efficiency the new skills required.

Finally, as environment is a growing concern for all industries, eco-design is not only a new concept but a necessity to grow towards sustainable development. Industrial players now manage their products lifecycle to control their environmental footprint and to define new business models.



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Perspectives

Designing great products, anticipating needs, exceeding expectations and facilitating the user's life for the better will still be the base of disrupting actors in the industry. The next leaders will be the ones who boost their value proposition with extended offers and services.

The next leaders will be the ones who boost their value proposition

B2B and B2C markets will continue to evolve from highly standardized to customized demand. Companies proposing complete customer-centric solutions with products as enablers will experience an increase in value. Customer centricity is not just about offering great customer service, it

means offering a great experience from the awareness stage.

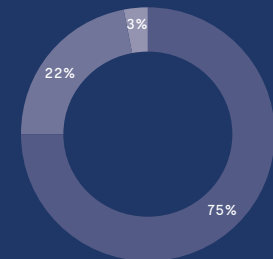
Pressure on costs will increase in every sector, including those saved so far in previous decades.

Facing this challenge is crucial to stay up and starts from early phases of product design to operational excellence.

The need for speed will be prevalent as well at every stage including product design, industrialization, customization & delivery, forcing manufacturers to transform their processes and ways of working.

2019-2025 Challenges

Designing great products is a challenge as 75% of product launches fail, according to a Harvard study.



- Less than 7,5M\$
- Between 7,5 and 50M\$
- More than 50M\$

Earnings after first year launch for Consumer Goods Products market



Procurement & Supply Chain

How can you push the digital
transformation of your Supply Chain?

by Michael Kaysersberg, Partner

“ *Having an agile Supply Chain and a Procurement ecosystem that helps to stay ahead in a digital world is a challenge for organizations across all industries.* ”

To persist digitization, interdependency of siloed business units, global competition, market volatility and increasing complexity, internal needs and external capabilities need to be linked. Digitization emerges rapidly across all industries and entities of a company.

*Procurement
ecosystem 4.0
unleashes competitive
advantages through
cost-reduction*

As a result, world leading enterprises struggle to stay ahead of the competition they used to dominate. This includes Procurement organizations. Global competition in volatile markets,

decreasing in-house value-add and increasing demand for access to external product innovation drivers are only some of the challenges Procurement is facing. Hence a shift from the traditional

Procurement model into a future-ready Procurement ecosystem 4.0 unleashes competitive advantages through cost-reduction by implementing agile Supply Chain solutions and enables transparency of processes along the SC for all stakeholders to boost cross-functional synergies.



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With shift comes change: we have identified four key levers that will help organizations advance their Procurement 4.0-readiness:

- 01** An “ecosystem” linking internal Procurement teams with external experts (e.g. from supplier side) fuels (product) innovation processes and ensures leadership in technology and market expertise
- 02** Cross-functional instead of siloed expertise required: Procurement 4.0 is linked to IT-based and digitized processes, product development and marketing
- 03** Disruption of traditional Procurement models implies new ways of thinking and working – within the unit and on executive level
- 04** Future-ready Supply Chain solutions:
 - aim close to the business
 - institutionalize more frequent adaption rhythms to adapt SC strategy to new realities
 - are interlinked with digitized processes within the organization



Perspectives

Our Procurement & Supply Chain practice combines a pragmatic, hands-on approach with strong expertise in top-tier strategy- and management consulting.

IAC “Smart Margin” is a holistic approach aiming for both quick-win-results and sustainable Procurement processes:



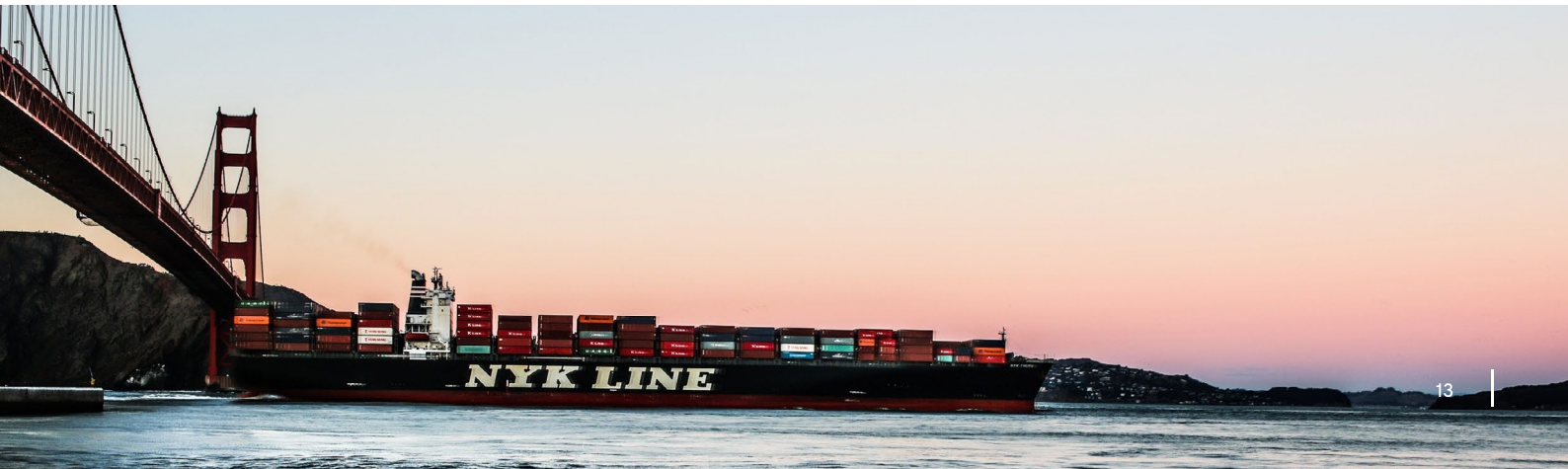
Analytics & Savings



■ Analytics ■ Savings

Our name is our promise:

- **Innovate.** We know how important an innovative Procurement unit 4.0 is. Our approach delivers not only cross-functional synergies. It is also proven to be a cost-reduction lever that helps to strengthen our clients' competitiveness in a sustainable way.
- **Accelerate.** Once the strategic framework for the unique challenges our clients are facing is in place, we accelerate: An agile, state-of-the-art project management steers our Procurement initiatives. Strategic subjects are conveyed through hands-on workshops with all involved stakeholders – internal and external. That ensures success in onboarding, implementation of new ways of working and sustainable organizational change.
- **Challenge.** Our value for the clients lies not only in successfully accomplished missions. We demand an open exchange with our clients. We want to challenge, not to serve. By challenging Procurement processes, ways of working, traditional habits and organizational structures, weaknesses and potential future pitfalls can be disclosed, opportunities identified, change initiated.





Digital Transformation & Enabling Technologies

Demystify the miracle

How to create a technology-enabled business- & operating model

by Maurice Resan, Partner



Getting in shape for the digital era remains a strategic hot topic on CxO-Agendas – worldwide and across industries. With increasing pace, complexity and competitive pressure – the Achilles heel to stay ahead is not rooted in technology, but leadership capability to lead the way.

As emerging technologies like AI, data analytics and IoT more and more enter the stadium of “mass-market-readiness”, most executives begin to embrace the power of digitization to boost operational performance in their support functions and supply chains; companies push the process of implementing new digital enablers to unleash new sources for economic- and business value.

But coming with significant change towards new ways-of-managing, -thinking and -working, our transformation experience shows three key take-aways:

01 It's not the technology that builds the bottleneck to “make it happen”.

02 It takes more than technology alone to stay ahead in the competitive game.

03 Often-cited “Disruptiveness” happens not only externally – establishing a tech-driven business model comes with significant paradigm-shifts in business- and management culture.

Therefore, digital frontrunners embrace the opportunities of digitization by applying a holistic approach towards organizational change overcoming common digital pitfalls – bridging the gap of historically-grown organizational silos via x-functional, agile teams and connecting the dots via a business strategy-aligned digital roadmap.



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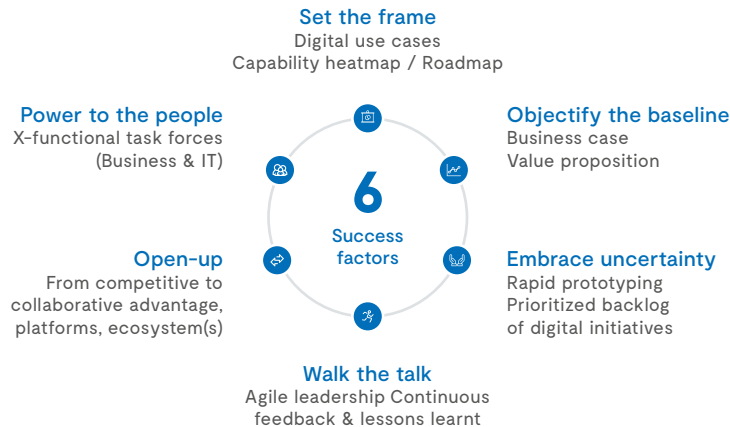
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Perspectives

Driven by increasing uncertainty, speed and complexity of change, a solid approach towards sustainable Digital Transformation balances activities to set the strategic direction ("frame") with agile techniques of re-calibrating implementation "on the go". Either way, digital transformation

starts – or stops – at the top, putting executives under pressure to guide the way forward. Our experience supporting industry heavyweights in their digital journeys globally can be canalized in six common success factors – separating the good – from outstanding – performers:



Approach

Layers

- Digital Strategy & Business Model
- Digital Operating Model
- Digital Mindset & Culture
- Digital Enabler



Stages

- Energize
- Mobilize
- Stabilize & Scale-up



Holistic Framework

- Templates
- Use Cases (industry-specific)
- Client References

Our expertise

With our unique combination of top-tier strategy- and management consulting expertise, real-life industry know-how and state-of-the-art design thinking techniques, we offer a pragmatic framework to support our clients in all relevant challenges of their digital transformation journey.

Structured around 4 distinctive digital layers – covering all aspects from Strategy, Processes, Organization, People and Technology – our framework enables tailor-made scoping of your transformation initiatives – from a holistic “big picture”-view to a drill-down in prioritized hot topics.

Integrating classic change management instruments, 3 stages help to mobilize the essential key success factor of every transformation – the people – from anchoring need-for-change to design and successful training of new-ways-of-working.

Enriched by success-proven templates and real-life client use cases we help bridging the gap between top-managements strategic vision and high-level Power Point concepts towards successfully adapted daily work procedures.

What are you waiting for?

Don't hesitate, accelerate!



Predictive Maintenance

Effective approaches address both technological and organizational challenges

in partnership with



by Jean-Baptiste Guillaume & Rémi Sabonnadiere

” *IAC Partners and L2F have a unique complementary positioning to support industrial actors, combining strategy, operations and organization consulting with the best algorithm in Europe.*

At the era of real-time data processing, IoT and Big Data, it is now possible to predict and avoid failures before they occur and reach new levels of operational efficiency. But success is not only a matter of technology.

To successfully implement predictive maintenance, 2 technical challenges have to be overcome to gather and analyze data:

- 01** It is necessary to monitor the right identified metrics through the installation of smart sensors on the products, remotely connected to the organization's data center.
- 02** The development of advanced predictive algorithms e.g. embedding Topological Data Analysis is a vital step to deliver precise failure patterns.

Even though the technical level is essential in the deployment of predictive maintenance, it is not sufficient to a successful implementation. Many industrials fail to implement concrete results at the organizational level:

- 01** As maintenance operations will no longer be planned on a regular basis, new service processes and skills have to be defined in order to operate in agile mode, enabling smart and efficient operations.
- 02** Finally, predictive maintenance requires disruptive changes to be operated at the organization level, which have to be tackled as part of a change management policy to enable this transition toward a new digital-oriented mindset.

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Rémi
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Corporate Solutions Manager



Perspectives

Because it provides tangible return on investment in almost all industrial sectors, predictive maintenance will continue to be the basis of new product development strategies.

93%

*of companies describe their
maintenance processes
as not very efficient*

Our studies show that some benefits can be:

- 01** A decrease of breakdown occurrence by up to 70%,
- 02** Lower aggregate maintenance costs by up to 30% compared to preventive maintenance and
- 03** Reduction in unplanned downtime by up to 50%.

Predictive maintenance is not only about cutting costs. It has the ability to generate new business opportunities; in particular through the addition of new services in the offering portfolio driven by the development of smart business models.

As such, we are expecting an increase in the move from the sale of traditional products toward the sale of services with, for instance, new value proposition based on operating time (e.g.; in hours/month...) or product availability, which are more customer-oriented.

2018 - 2020 Challenges

- **1,000 avoided engine failures over 1 year** thanks to predictive maintenance on Delta Airlines' fleet
- **5-10% of average inventory cost reduction** thanks to predictive maintenance
- 55% of the companies are running pilot projects but **only 23% are generating a tangible benefit from it**
- To support implementation of predictive maintenance, **80% of companies would require assistance** on data analytics and 72% on the solution's implementation

Those benefits apply to any type of business, ranging from product manufacturers, to transport operators but also asset centric industries.

As an illustration, the low-cost carrier EasyJet implemented predictive maintenance of its entire fleet of more than 300 aircraft, following successful pilot projects. Relying on support from Airbus, 31 events were successfully predicted before

they occurred last year. On another domain, Nestlé retrofitted its entire corporate coffee machine operating base with predictive maintenance, optimizing technicians' travels.

The race is just starting, and most of leading companies are running pilot projects at least, in preparation of a future global expansion.





Organization & Leadership

Domesticate the change

How to make your organization more adaptable

by Heike Bartsch & Martin H. Kaltenbach

” *Leadership challenges in the age of the Millennials. Successful CEO's need to leverage the organization in today's new normal of globalized, dynamic markets.*

Markets are facing a looming slowdown accompanied by political instability which leads to worldwide economic nervousness.

Old correlations explaining market behavior seem not adequate any more, accustomed tools will be unlikely to lead to satisfactory solutions.

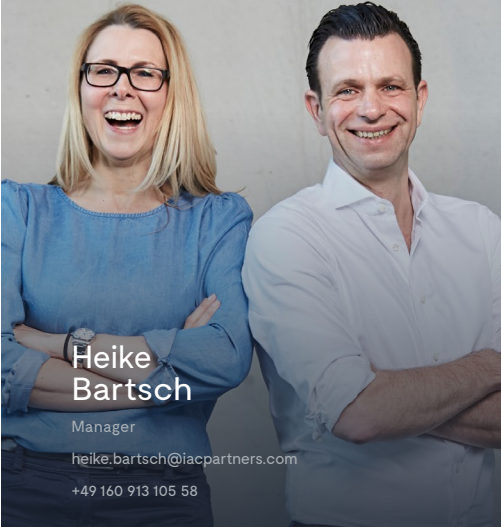
Defensive, risk orientated strategies are no longer sufficient to prepare for upcoming challenges.

Among many examples, let's take a look at Kodak, the company that dominated the photographic film market during most of the 20th century.

Although Kodak actually invented digital photography already in 1975, they decided

not to launch this early innovation into the market. Management reaction was defensive – maintaining their film sales – and so the management failed to see the potential of a disruptive technology; even though they had started it.

To the surprise of some, Kodak failed in 2012 behind declining sales in films since digital photography became the new normal.



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The rise and fall of the stars of technology.

Nokia was exposed to a slightly different experience after being the global leader in mobile phones for more than 20 years. Though having released the first smartphone – the 'Communicator'–, they didn't grasp the concept of software and kept focusing on hardware and therefore missed the rise of today's smartphone as mass product.

Apple however, adapted to the changing customer behavior by a substantial process innovation with launching the iPhone in combination with the App Store in 2007.

There are many more examples of leading companies within their respective industries that misjudged customer needs and market requirements. Taking defensive or reactive actions instead of proactively shaping the future leads to an immense uncertainty regarding the perception of customers and market trends, which in fact is vital to a changing economic climate.

In a nutshell the world is constantly changing, and changes are becoming more unpredictable while happening faster and faster. As historical forecasts and past experiences are losing their relevance and are rarely applicable it's becoming more difficult to anticipate events or predict how they will unfold.



Perspective - consumer knowledge trends

All industries are changing fundamentally at an ever-growing pace. Predictions based on backward-looking tools

collapse as traditional correlations do no longer fit. Increasingly, experience-based skills seem to be outdated, as knowledge is available anytime and anywhere.

In 1982 Buckminster Fuller created the "Knowledge Doubling Curve" in which he noticed that until the year 1900, human knowledge doubled approximately every century. By the end of World War II knowledge was doubling every 25 years. In 2013 average human knowledge was already doubling every 13 months. According to IBM's predictions, starting in

the year 2020 we expect the doubling of available human knowledge every 12 hours.

Historically customers have expected basics such as quality, service and fair pricing. Today's customers have much higher expectations, such as proactive service, personalized interactions and connected experiences across channels

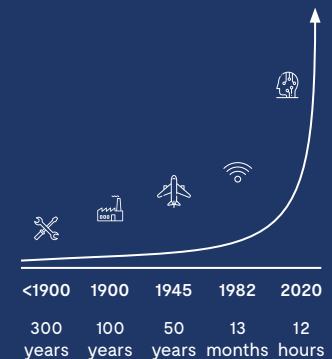
Hence, knowledge management becomes more of a processual challenge than the mere accumulation of knowledge.

With the rapidly evolving knowledge base and its accessibility, customer expectations change equally fast.

Building strategies to best cater for those rapidly evolving customer expectations increasingly requires strong predictions that incorporate all possible aspects and the capability to constantly adapt.

2019 & onwards What counts?

Knowledge doubling



Managing the enormous amounts of knowledge coupled with the evolving requirements calls for advanced data analytics on the technical side. However, the pure data handling capability will not get the companies where they want to be. Data interpretation and rapid adaptation take a front seat in how companies need to be prepared.

Such rapid evolutions in customer requirements create a massive need for flexibility and adaptability of the companies; thus leading to a corporate culture that is constantly transforming.

As the future will be increasingly unpredictable, companies need to constantly question their current strategies to adopt market challenges.

During the 1990's, solid strategies were expected to stay intact for a period of 3-5 years; today we very often need to adapt or entirely revisit strategies already after 6-9 months.

Average Lifetime of Business Strategies

*1990
3-5 years*

*2019
6-9 months*

Today's CEO who leads such amorphous organizations will need to prepare their decisions very differently than in the past decades.

Decisions need to be based on solid predictions on evolving product and process needs and require a very diverse set of analytics, tools, methods and viewpoints.

Assembling powerful, diverse teams and hence recruiting talent with new capabilities will be the key to a sustainable future.

So why not use the skills and the natural mindset of the millennials? Just the ones that strongly influenced the fast-paced nature of today's markets?

Generation Y

born 1981 - 1991



Tech/web
savvy



Family
centric



Ambitious



Communicators



Team
Players



Like to
be loved

Future challenges – millennials as success factors

The millennial workforce become a much more important contributor than previous generations as they are adding a different mindset and skillset to the process which is largely influenced by their digital upbringing.

Millennials or Generations Y (why) and Z, digital natives, are highly comfortable dealing with an information-saturated, fast-paced, interconnected world. As a result, they are very adaptable, able to respond quickly to new situations. They are driven to find purpose in their work, they require flexibility in every respect while questioning every aspect – including the status quo.

The individual and collective requirements of those millennials have hugely influenced changes in customer requirements – they initiated the changes hence best understand them and are in the best position to anticipate future dynamics.

None of those changes and dynamics can be adequately predicted with experience-based views and toolsets.

Called 'war for talent' – there is and remains a strong competition for the best talents predicted to become fiercer for the millennials. Key to win over talent requires a corporate culture that rewards courage, offers space to "think and to try". Hence, it becomes exceedingly important to improve the way organizations deal with mistakes.

In a recent study fault tolerance was examined in 61 countries. Unsurprisingly, Germany came second to last, many of the European core countries following suit, the US is doing only marginally better in general. All those countries and cultures still display pockets of excellence: process innovation such as Paypal, Amazon or the App Store never would have arisen without challenging existing cultural traits.

As important as hiring will be to develop the right skills and capabilities. The employees will be paramount to consistently challenge and question today's strategy and adapting to new market mechanisms.

Generation Z

born 1992 - 2001



88% are
extremely close
to parents



76% want
human impact
& doing good



50%
university
educated



65% worry
about the
economy



74%
want to be
entrepreneurs



100 texts per day
Attention span
8 seconds



> 7.5
hours/day
screentime



\$143bn
direct purchase
power in US

Future challenges – nurture teaming and become customer centric

Embedding the organization in a flexible, bottom-up work structure, that incentivizes challenges, provides room for trial and error and rewards risk taking will contribute to nurturing organizational capabilities and attracting new talent.

The business climate of today is unflinchingly complex, riddled with uncertainty, becomes more and more difficult to navigate and requires heightened amounts of physical, mental and emotional stamina of the CEO's

As a result, future CEO's core competencies are changing immensely: Formerly focused backward on risk, product and cost management, the future CEO challenge will comprise a constant strategy adaption, facilitating perpetual transformation and relentlessly maintaining a customer experience focus. The successful CEO of the future will need to assemble and manage highly diverse teams that persistently drive change.

IAC Partners support organizations in their change agenda and help senior leaders adapting to the new environments and expectations – we help our clients both in defining the 'true North' and making change happen across the organizations.

CEO Focus

Past – Company Manager



Experience based



Risk Management



Cost Management



Product focus

Future – Team Facilitator



Attracting
& retaining talents



Constant strategy
adaption

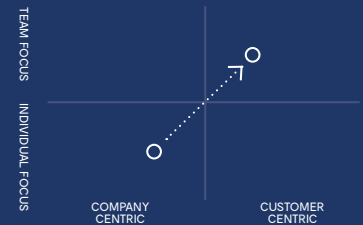


Facilitating constant
transformation



Consumer
interface focus

CEO of the Future





Aerospace & Defense

Achieving program excellence

by Olivier Saint-Esprit, Partner

“ *Actors need to reduce significantly their non-recurring costs to capture the growing demand.* ”

This year was a record year for the industry regarding commercial aircraft deliveries and global military expenditure, and this trend of growth is expected to continue for the coming years.

Manufacturers and suppliers had to face significant ramp-up in production. Some suppliers have struggled in this challenge leading to supply chain interruptions for the OEM.

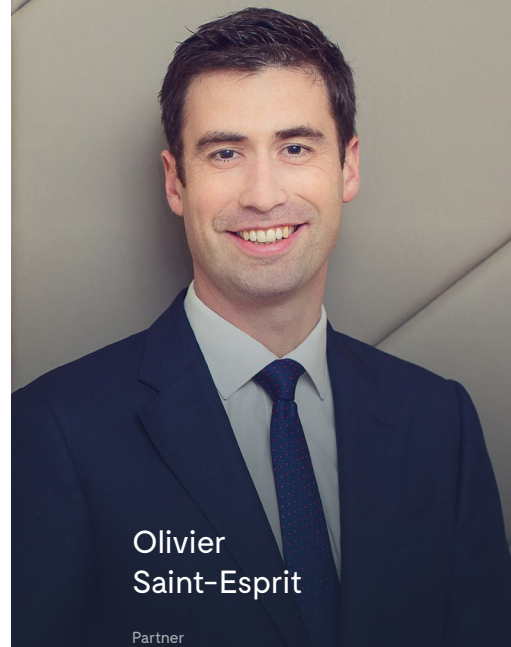
In addition to this increase in production volume, we see a shift with development costs of programs now only being supported by suppliers and not OEM.

Therefore, suppliers need to radically reduce non-recurring costs to survive, notably by deploying innovative developments (e.g. platforming,

modularization) and leveraging on synergies between them (e.g. re-use). In the Defense sector, heightened global tensions and geopolitical risks, recovery in the US defense budget, and higher defense spending by major Asian powers are expected to drive global defense sector growth.

However, French DGA is under pressure and tends to minimize investments. To offset this lack of investments, French actors need to rely on exports to find new sources of revenues to fuel their new developments.

Finally, although technology is nothing new to the industry, players have to deal with disruptive technological breakthrough (e.g. big data, AI, deep learning, blockchain) and play defensive against potential digital new comers.



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THALES

iXblue

Perspectives

First, French actors have to improve their competitiveness, notably by reducing their development costs (usually representing more than 50% of the total costs of a program) and accelerating their time-to-market in order to address international markets.

To achieve this goal, they must strengthen their Project Management to minimize drifts in costs and planning, by combining Lean with Agile approaches.

Moreover, manufacturers and suppliers in the industry will have to adapt to new ways of certifying an equipment. Certifications by proof, which has historically been a strong barrier to enter the market, are being challenged by massive experimentation and simulation logics arising from the automotive industry.

Development costs represents more than 50% of total costs of a program.

Finally, manufacturers and suppliers need to take up the challenge of Autonomy.

Strategy wise, as today's "platform-based"- will evolve into "service-based" business models, offering additional business potential and changes in revenue streams and share, players need to reinvent their business models to make the most of this opportunity.

We see historical established aero players being endangered by aggressive new comers, both from Digital industry leveraging on data gathering, fusion and cybersecurity competencies, and from Auto industry leveraging on more and more complex technologies with much higher volumes and lower costs (e.g. lidar, radars).

2020-2030 Challenges

AIRBUS

2017   

2018     

800 deliveries of airliners
(vs. 718 in 2017)

BOEING®

2017   

2018     

806 deliveries of airliners
(vs. 763 in 2017)

A close-up, low-angle shot of a microscope, showing the objective lens and eyepiece. The image is dark and moody, with a focus on the mechanical details of the instrument. The text is overlaid on the left side of the image.

Healthcare & Lifesciences

Support the transformations underway

by Jean-Baptiste Guillaume, Partner

“ *The transformations underway in the Healthcare & Lifesciences sector are deep and sustainable. Cost pressure, normative evolutions, technical innovations and the increasing importance of the patient in the value chain are game changers.* ”

Our clients in the medical sector faced three major challenges in 2018, linked to a need to optimize the global health system: the evolution of business models, the growing interest in the patient's journey, and finally, a continued strong pressure on the direct costs of the equipments.

Equipment manufacturers, as well as healthcare providers, need to adapt their business models to current evolutions of the sector: outpatient hospitalization, e-health, IoT and the use of big data to optimize care. But, evolving towards more services when you are a "pure tech" company, or integrate technology when you are a pure service provider is not easy nor painless.

Patient's journey within the various institutions is also a growing area of work to optimize the quality and efficiency of care and flow regulation within the institutions. We are witnessing a real paradigm shift: a supplier used to offer equipment for health professional, but now his objective is to provide the patient with the best possible care experience. The patient is therefore integrated directly in the development process through the "Living Labs".

Finally, in recent years, all players of the Healthcare sector have been facing unprecedented pressure on direct costs of equipment, on the time required to develop new solutions, as well as on the amount of new investments.



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 **Carestream**

 **Air Liquide**

GETINGE 



Perspectives

Healthcare actors are shaping their next business models to adapt to changes in the entire system. They will gradually refocus on patients' many expectations with a controlled level of intervention and will grow in the cost management maturity.

The digitalization of care, the use of artificial intelligence and the advent of big data exploitation will lead health actors to use the mass of data generated to offer a so-called precise, personalized to each patient (healthcare, decisions, treatments, practices or medical products) medicine.

The reduction of the overall cost of the health system, in particular through the improvement of the patient journey, will allow

the development of "Homecare" solutions. It's not only the taking of medication which can be done at home, but also the control of certain parameters, the installation of equipment or the intervention of specialists.

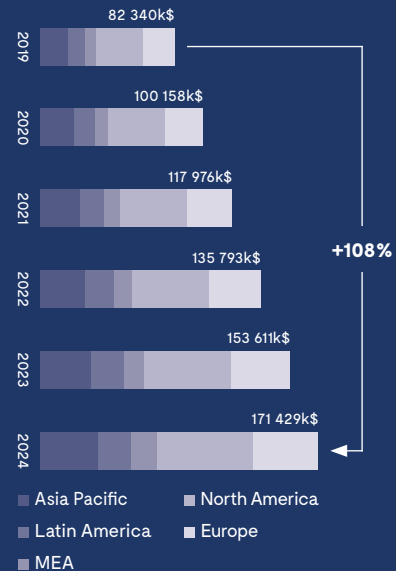
The actors concerned will need to adapt their range of products and services with remote management.

Finally, the optimization of the total cost of ownership for equipment suppliers, will lead them to develop predictive maintenance solutions, to ensure their service rates, stay competitive and respond to growing market pressures.

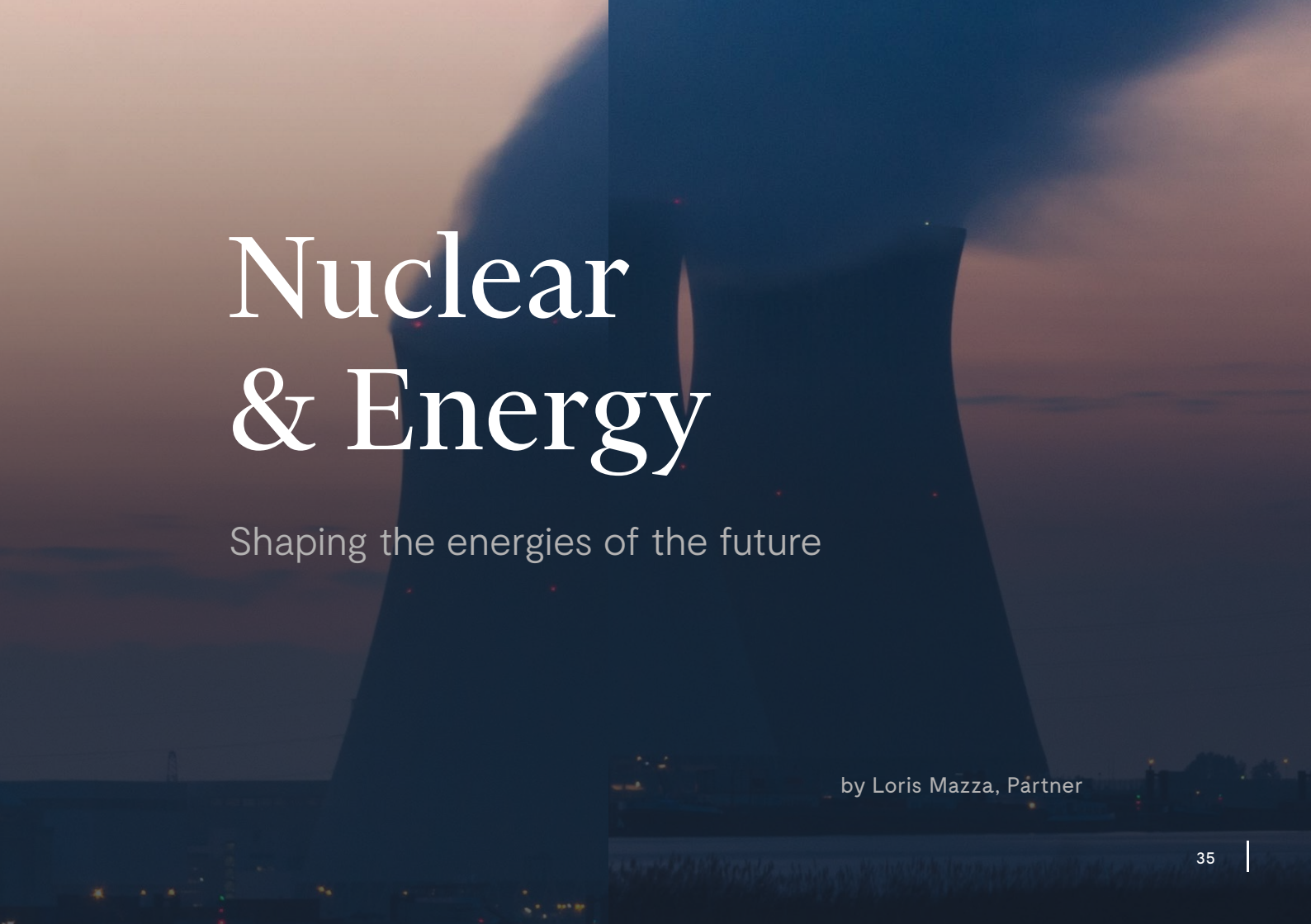
The precision medicine market is expected to double by 2025

2019-2025 Challenges

Trend in the global precision medicine market by region (\$K)



Source : Persistence Market Research in Journal of Precision Medicine, 2018



Nuclear & Energy

Shaping the energies of the future

by Loris Mazza, Partner

“ 2018 confirms the increasing demand for safer, cleaner and cheaper energy; this drives a technological and economic competition & synergy between fossil, nuclear and renewable sources of electric power.

According to the IEA (International Energy Agency) the worldwide yearly consumption of electric power has doubled since 1990 to reach 23000 TWh. Main drivers being emerging countries' needs, the digital transition and a progressive shift from thermal engines to electric vehicles.

Emerging countries need additional power to support their development, while mature countries focus on replacing fossil with alternative energies for environmental concerns. Based on the political, economic and geographic context, every country is adapting its mix of energy sources to cover increasing electric power needs; smart grids are supporting the strong flexibility required by these mixed arrangements.

Nuclear remains, so far, the only non-fossil technology capable to mass

produce electric power at a Levelized Cost of Energy (LCoE) close to gas/oil/coal and independently from geo-climate conditions; the biggest challenges remain to be convincing in terms of environmental risks and to limit the currently very high investment levels and time-to-turnkey for operators.

For the green renewable technologies, mainly wind and solar, the challenge is to increase output and continuity of supply, to bring their LCoE down and become less invasive for the environment; for example, COLAS is developing solar carriageways for the highways. Innovations are underway, but the major next step is to convince authorities to adopt these solutions with still poor investment/performance ratio.



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Perspectives

Major transformations are ongoing in the energy sector with different trends between mature and emerging countries. Mature countries' consumption growth is reduced; the main focus is on replacing old fossil with new renewable energy power plants to reduce carbon footprint. Developing countries need strong additional power generation to support their growth; they are increasingly

investing in renewable energies, but on the other hand are continuing to invest in nuclear and fossil energies.

The Power Grid of the future has to integrate a mix of different energies and adapt to evolving needs. Flexibility is key and the development of storage systems will continue to improve the combination of supply stable (fossil, nuclear) and weather depending (wind, solar) energies.

⌘ Nuclear

It will stay stable/declining in mature countries, shifting to renewable, but will strongly grow in emerging countries; Conversely, emerging markets are investing in nuclear plants, with China aiming at becoming a world leader, focus will be costs (LCoE) and safety.

☀ Photovoltaic

It will also grow, both in number of projects and in scale. In the mid to long term, solar energy is expected to gain in competitiveness (current LCOE at ~100\$/MWh) and bypass wind energy by 2025 in terms of installed base.

⚡ Wind

It will grow driven by environmental pressure pushing for quick projects' commissioning. Given large footprint requirements from wind turbines, growth will mainly come from offshore projects.

2017-2040 Challenges

1 billion

In 2017, the number of people without access to electricity reached the below 1 billion level.

China

In 2017, China was the major country contributing to the global growth in energy contribution.

20%

Renewable Energy Directive in EU targets **20%** of renewable technologies in the energy mix by 2020, raising it to **32%** by 2030.

Two thirds

Renewable energies are expected to represent **two thirds** of global investments in power plants to 2040.



Consumer Goods

New expectations from new consumers

by Nicolas Huygevelde, Principal

” *2018 definitely marked a move of the Consumer Goods market to catch up the millennials’ needs rooted in their behaviors.*

Historically, consumers used to be extremely loyal to a brand (due to family history, brand positioning, perceived quality level, etc). In other words, once established, brand loyalty ensured regular sales volumes from a solid customer base. Nowadays, consumers’ needs and desires are quickly changing and evolving, partly driven by new habits from the millennials generation.

Those millennials are now rather looking for experiences than simply buying a leading brand. Thus, we see today a boom in the product diversity offering, with a growing number of newcomers disrupting the established positioning of historical brands; today close to 90% of companies compete primarily on customer experience, comparing to 36% in 2010.

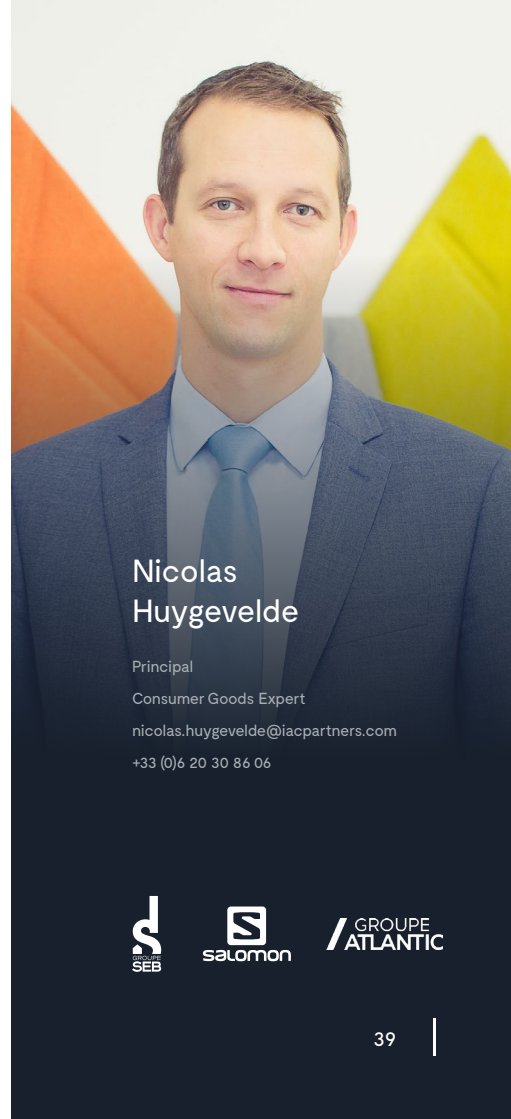
New brands’ claims also adapt to consumers’ current concerns, such as

personal wellbeing or environmental awareness.

Groupe SEB promotes its 10 years repairing of most of its products, claiming to be cheaper than buying a new product, quality stays the same, and above all, repairing limits the ecological impact of the waste & scrapped products.

In the 100% juice segment, Tropicana Pure Premium, the leader by far, lost significant market shares (from 5% to 10% depending on countries) due to newcomers like Innocent, a small brand with huge growth in France.

Innocent differentiates itself by meeting new customers’ expectations such as environmental concerns (using vegetal plastic and green agricultural process to reduce greenhouse effect, sustainably producing the fruits, and giving 10% of their benefits to NGO).



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Perspectives

In the search of the continuous improvement of consumers' experiences, brands' digitization will play a key role.

First, the use of social networks is now critical for any organization, but even more critical

in the consumer market. Customers' feedbacks and advertising are now reaching a much larger audience on Facebook, Instagram and Twitter than traditional communication channels.

Second, the rise of Artificial Intelligence and data analytics is opening promising perspectives for products' customization based on the analysis of customers' behaviors and preferences.

Benefiting as well from the global digitization, e-commerce sales are

The rise of Artificial Intelligence and data analytics is opening promising perspectives for products' customization

expected to follow their exponential growth in the years to come. In 2018,

e-commerce sales reached \$500 billion, a 16% growth compared to the previous year. Future growth will be further boosted by an increasing penetration of smartphones in emerging countries; a growing number of online platforms from retailers looking to broaden their distribution channels; and further innovations from e-commerce giants.

To illustrate this trend and start the new year 2019 the right way, Amazon became the largest US listed company bypassing Microsoft and Apple; and is expected to reach \$1 trillion market cap by the end of the year.

2018-2022 Challenges

- Today, **90% of companies compete primarily on the basis of customer experience**, compared to 36% in 2010.

- **US e-commerce grew by 16%** in 2018, with Amazon accounting for 40% of the \$454 billion revenues.

- **Amazon's total online sales are expected to increase** from \$130 billion in 2018 to more than \$180 billion by 2020.

- By 2022, **China e-commerce market is expected to become twice as big** as the US market, reaching \$1.8 trillion.

We can see IKEA, the world's biggest furniture retailer, has to cope with increasing competition, like made.com, Etsy, or even Amazon Design, who make 100% of their business online.

IKEA decided in 2018 to massively invest in e-commerce, city-centre showrooms and more home delivery and assembly services.

Thus, Ikea online sales made a 31% jump in 2018, to reach only 5% of their total turnover, same as in 2017.

To face these new challenges, companies in the consumer goods market are looking to expand their global reach,

in the aim to increase sales volumes and profitability. For that reason, consolidation on the market is expected to continue, enabling companies to reach more geographical markets and/or diversify their value proposition.

Once again, the Groupe SEB example is a perfect illustration. In continuation of their external growth to expand its core business more globally, they finalized in 2018 the acquisition of WMF, leader in professional coffee machines, diversifying their offer and entering this way for the first time, a totally new business model for the company.





Automotive & Mobility

Embracing digital transformation

by Olivier Saint-Esprit, Partner

“ *Companies willing to win and survive in the mobility market must reinvent themselves as the industry experiences turbulences.* ”

The mobility industry is facing 4 major rising challenges: electrification, autonomous driving, connectivity and shared mobility services.

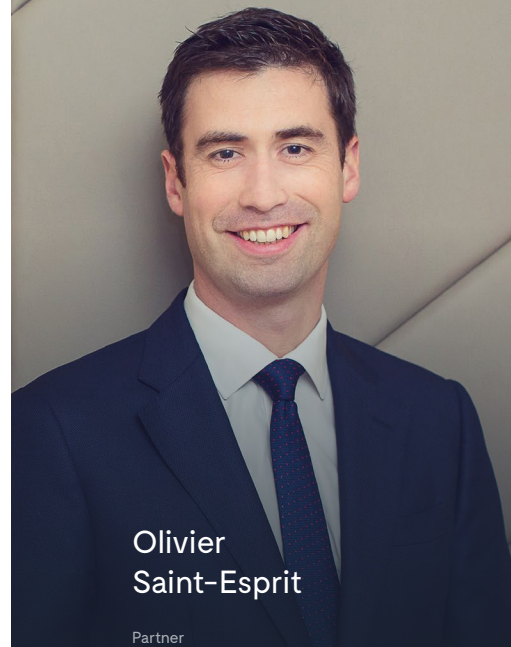
Driven by environmental factors and regulation incentives, worldwide sales of electric vehicles have doubled in 2018 (compared to 2017) reaching a global market share of 4.6%. Sales will continue to grow, every major car manufacturer announcing plans to release extensive ranges of EV models in their portfolio in the coming years. However, major investments in vehicle charging and power grid infrastructure are required.

Besides, the race to autonomy is intensifying. Despite regulatory inconsistencies across regions and the first fatal accident in the US, almost all the OEMs took part in experimentations

this year and have announced ambitious roadmaps regarding autonomy.

Moreover, although connectivity is nothing new to automotive, data and analytics are becoming a source of revenues for multiple actors along the value chain. Business opportunities continue to grow rapidly and significantly, the total business value of connected car services will reach €100 billion by 2020.

Fostered by these three trends, shared mobility services are exploding, last year being the most active year on record for M&A activity, among vendors serving the automotive & mobility sector. While suppliers attack to fight for a leading position as providers of core future technologies, OEMs shift their attention to revenue creation and reinvent themselves as service providers.



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Perspectives

Strategy wise, manufacturers and suppliers must rethink their business models in order to generate revenues induced by those new paradigms.

In the next ten years, vehicle sales will drop from 79% to 54% of the value, generated by vehicles on their product lifecycle. The other half of the pie will be value generated through after-market services, data-enabled services or shared mobility services.

While coping with low margins on their core business, OEMs need to invest heavily in customer-oriented service innovations, such as ride sharing and ride hailing.

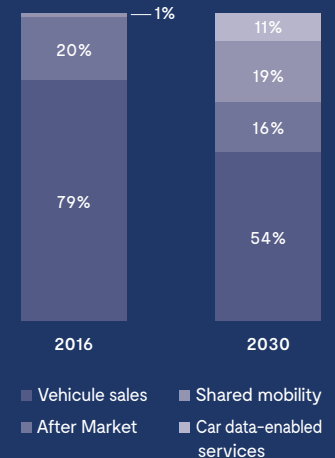
Already, companies who invest their R&D budget in software solutions instead of product range are showing stronger growth than their competitors.

On top of these new services to the end-customer, players need to find ways to monetize the data generated. For instance, usage-based insurance or retail businesses advertising through geolocation will become a new B2B lucrative source of revenues.

From an operational point of view, as car manufacturers push for vehicle electrification and full autonomy, manufacturing processes are getting more complex.

2020-2030 Challenges

Share of the value over the car value chain



Enabling Technologies

- Connected
- Autonomous
- Shared
- Electrified

Given the uncertainty around how quickly these technologies reach commercial scale, automakers need a flexible production capacity in order to manufacture different types of vehicles (e.g. internal combustion, hybrid, and fully electric) on the same assembly line.

Moreover, with the amount of software contents in the car expected to triple in the next 15 years, R&D has to reinvent itself to embrace digital.

The challenge is to combine the 100-years old traditional, linear and sequential product-development

approach of the auto industry with a much more rapid and iterative development approach like Agile or V-cycles.

These two very different ways of production must be coalesced and mastered by the same organization to ensure best-in-class time-to-market and software updates over the air.



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