

# The European Business Review

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Turning Societal Challenges into Business through Value Sharing

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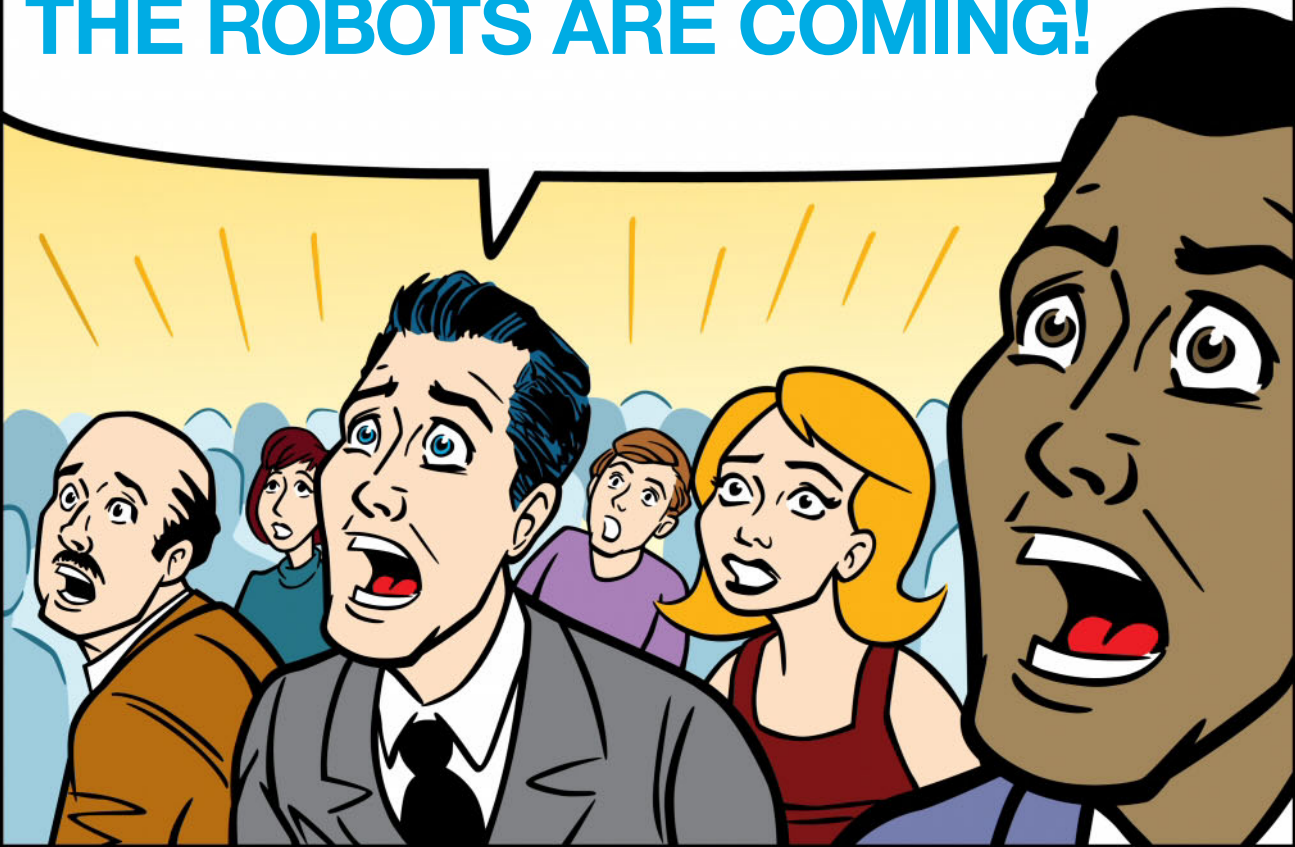
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# Turning Societal Challenges into Business through Value Sharing

BY SIMONA ROCCHI, BAHAA EDDINE SARROUKH, KARTHIK SUBBARAMAN, LUC DE CLERCK AND REON BRAND

**How do brands stay meaningful and relevant in the 21<sup>st</sup> century? One powerful route is to deliver high value to customers while addressing wider social and environmental issues as an integral way of doing business. But doing this requires rethinking how value is created. In this article, we explore case studies of leading companies who are putting this new value creation and sharing into practice. From these we draw seven recommendations for enterprises wanting to follow this transformative economic path.**

**T**o understand how to go forward, it's useful to briefly look back at how the transformative path has emerged as the latest wave of value creation. The initial wave arose during the Industrial Revolution when large numbers of newly-urbanised people first had access to mass-produced goods that improved their lives. In the 1980s, this form of value creation came under pressure in advanced economies as businesses faced relentless competition, market saturation, changing labour conditions and stricter regulation.

With products becoming commodities, leading companies began developing experiences as a way to compete, setting the scene for aspirational brands such as Armani, Louis Vuitton, Camel and Apple. In the 1990s and the 2000s, the Internet and digital information and communication technologies triggered a third wave, where value creation became democratised with almost anyone able to generate value. Digital platforms such as eBay, Kickstarter and Shapeways 3D Printing supported self-empowerment, e-business and peer-to-peer opportunities.

Today, these various economic paradigms coexist in advanced and emerging markets, progressing at different speeds and scale. And a fourth wave is starting to appear: the "Transformation Economy". This is driven by

**Transformation Economy** is driven by the realisation that despite economic progress, the world's population is facing persistent socio-economic inequality and mounting environmental challenges.



**Table 1 - Paradigms in value creation**

Overview of value creation from a ‘people’ as well as a business perspective

		1950>>	1980>>	Unfolding	Future
		Industrial economy	Experience economy	Knowledge economy	Transformation economy
People Mindset	Captivating idea	Product ownership	Experience	Self Actualisation	Meaningful Living
	View	Local	Global	Contextual	Systemic
	Quest	Modernising one’s life	Explore lifestyle identities	Individual empowerment	Address collective issues
	Effect	Productivity & family life	Work hard play hard	Develop your potential	Meaningful contribution
	Skills	Specialisation	Experimentation	Creativity	Transformative thinking
	Approach	Follow cultural codes	Break social taboos	Pursue Aspirations	Empathy & cooperation
Business Mindset	Economic driver	Mass production	Marketing & branding	Knowledge platforms	Value networks
	Focus	Product function	Brand Experience	Enabling creativity	Enhancing meaning
	Quality	Products	Product-service mix	Enabling open-tools	Inclusive value networks
	Value proposition	Commodities	Targeted experiences	Enable self-development	Ethical value exchange
	Approach	Persuade to purchase	Promote brand lifestyle	Enable to participation	Leverage cooperation
	Goal	Profit	Growth	Development	Transformation

Source: Brand, R. and Rocchi, S., *Rethinking value in a changing landscape. A model for strategic reflection and business transformation, 2011.*  
<https://pdfs.semanticscholar.org/c34a/3e300f1b9d1d4eb45e2af3cf7e2aa3d0344b.pdf>

the realisation that despite economic progress, the world’s population is facing persistent socio-economic inequality (especially in emerging markets) and mounting environmental challenges. People are looking for solutions to global issues that affect their quality of life, and this is opening new business spaces. (See Table 1)

Recognising this shift, certain brands are directing some of their value creation efforts in new directions, in particular towards the UN’s 17 Sustainable Development Goals (SDGs).<sup>1</sup> The quest for answers and opportunities in societal goals and collective needs is influencing research, development and design in companies as diverse as Danone, DSM, Interface, Johnson & Johnson, Tesla, Unilever, Vodafone, and Royal Philips, to name a few. This is not philanthropy or Corporate Social Responsibility. These companies are following a commercial rationale to re-direct part of their investments in innovation towards new meaningful solutions that can drive business development.

**PEOPLE ARE LOOKING FOR SOLUTIONS TO GLOBAL ISSUES THAT AFFECT THEIR QUALITY OF LIFE.**

The size of the challenge – and the opportunity – is huge. According to one estimate by the United Nations Conference on Trade and Development (UNCTAD), the SDGs could cost between USD 2.5 and 4.5 trillion a year<sup>2</sup> between 2015 and 2030. However, complex global issues cannot be solved by any single company or stakeholder. In this new paradigm, business value is associated with inclusive value networks that can develop context-specific solutions. The way ahead lies in a variety of venturing and cooperation models that share complementary capabilities, resources, investment risks and return on investments – networks which together can amplify positive social, economic and environmental impact.

Such networks may include Private-Public-Partnerships (PPPs), as well as a variety of For-Profit and Not-for-Profit cooperation platforms. But these PPPs differ from their traditional task-oriented, transactional “contract-out” counterparts in which private companies are seen as vendors used to save costs rather than as partners in helping to maximise outcomes. The new PPPs are collaborative, value-sharing ecosystems of governments, large companies, start-ups, NGOs, and international and academic institutions. They mobilise multiple stakeholders around a common goal and specific targets: for instance, reduction of maternal



mortality or CO<sub>2</sub> emissions by a given percentage, instead of conventional PPP activities such as building air purification systems or new hospitals.

This evolution has been documented by authors such as W. D. Eggers and P. Macmillan in their book *The Solution Revolution*,<sup>3</sup> and in publications such as the World Economic Forum’s 2016 paper, *Health System Leapfrogging in Emerging Economies*.<sup>4</sup> Often initiated by visionary leaders or motivated core cross-sector teams, value networks target long-term financial sustainability incorporating innovative financing, efficient cost structures and new sources of revenue. And they are able to adapt over time to ensure the fulfillment of the pre-defined goal.

### Pioneers of the Transformation Economy

Although the necessary business models for this new paradigm are not yet mature, case studies from the early pioneers offer insights into how to proceed. They illustrate how mobilisation of people and value-sharing approaches generate solutions that create better living conditions, support social equity, and respect the environment, as well as delivering economic returns on investments.

One of the first ground-breakers was Interface®, a manufacturer of modular carpet. In the 1990s, CEO, Ray C. Anderson,<sup>5</sup> was inspired by concepts of the “restorative economy” and “waste as value, not cost”. He challenged the company to set bold corporate environmental goals and to pioneer closed loop systems with targets such as “zero waste” and “zero impact by 2020”.<sup>6</sup>

Now a perfect fit with SDG 12 (Ensure sustainable consumption and production patterns), Anderson’s ambitions were almost unheard of at the time. Interface had to seek partners to develop the required knowledge, capabilities, and competencies in cleaner production techniques, renewable energy and waste recovery. It also had to set up a network of stakeholders able to provide infrastructure and take-back and recycling channels. As a result, Interface moved away from the traditional industrial economic paradigm of selling carpets based on “taking-making-wasting” to become a provider of “indoor comfort”, offering customers superior value through recyclable and upcyclable leasing solutions. It turned the issues of sustainability and the cost of waste<sup>7</sup> into a billion dollar corporation, dispelling the myth that

**Table 2 - The Sustainable Development Goals.** Overview of 17 goals to transform our world, adopted by the United Nations.



Source: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

focusing on environmental challenges negatively affects the bottom line.

For another early pioneer, Grameen Danone<sup>8</sup> Ltd, the impetus came from two founders who focused a big vision onto a well-defined achievable goal. One was Franck Riboud, at the time CEO of Danone, a French multinational fresh dairy products company committed to “bring health through food to as many people as possible”.<sup>9</sup> The other was Muhammad Yunus, founder of the Grameen Bank and acclaimed worldwide for establishing micro-credit in developing markets. Together Riboud and Yunus aimed to bring low-cost, fortified yoghurt to malnourished children across Bangladesh.<sup>10,11</sup> One cup of the “Shokti Doi” yoghurt would cover a child’s daily requirements of vitamins, salts, calcium and proteins.<sup>12</sup>

From current perspectives, the business is aligned with SDG 1 (End poverty in all its forms everywhere) and SDG 2 (End hunger, achieve food security and improved nutrition, and promote sustainable agriculture), and from the start it produced positive impacts across the value network.<sup>13</sup> The milk was purchased from local micro-farmers, and its micro entrepreneurs, the “Grameen Danone Ladies”, delivered yoghurt to rural areas via door-to-door distribution receiving a 10% commission for their services. In total, Grameen Danone Foods created about 1,600 jobs within a 30 km radius around its environmentally friendly factory in the Bogra district.<sup>14</sup>

Unilever coordinated the creation of a Post-2015 Business Manifesto endorsed by over 20 leading companies, setting out a vision for the role of business in achieving the SDGs.

### More Recent Examples

Other companies are now following in the footsteps of these pioneers including world leaders such as Unilever. In 2014, Unilever coordinated the creation of a Post-2015 Business Manifesto<sup>15</sup> endorsed by over 20 leading companies, setting out a vision for the role of business in achieving the SDGs. Unilever itself is engaging with the SDGs through the Unilever Sustainable Living Plan<sup>16</sup> and its transformational change agenda. This agenda defines three areas where the company believes it has “the scale, influence and resources to make a big difference”: eliminating deforestation; making sustainable agriculture mainstream; and “working towards universal access to safe drinking water, sanitation and hygiene”. In this third area, Unilever sees the largest opportunity to both deliver on SDG 6 (Ensure availability and sustainable management of water and sanitation for all) and to add value for its own business.

Unilever uses advocacy on public policy and partnerships with governments, NGOs and other industry players to achieve this goal. The company has helped establish the WASH4Work<sup>17</sup> coalition, part of the UN-Business Action hub, and is a member of the Toilet Board Coalition which seeks to develop sustainable and scalable commercial solutions to the sanitation crisis. It is also measuring the impact on the communities these initiatives seek to transform. For instance, Unilever’s Lifebouy hand soap<sup>18</sup> brand has conducted a clinical trial<sup>19</sup> of its handwashing behaviour change approach.<sup>20</sup> Involving 2000 families in Mumbai, India, the trial demonstrated that children in the intervention group had 25% fewer incidences of diarrhea, 15% fewer cases of acute respiratory infections, and 46% fewer eye infections than the control group.

The transformative path is not always smooth. For example, Grameen Danone struggled due to an incomplete understanding of its target consumers’ tastes and preferences, their purchasing power and the local financial and infrastructural resources.<sup>21, 22</sup> But for many initiatives the biggest challenge is trying to scale beyond an initial setting.



Unilever is working with communities and organisations in India and Nigeria by giving access to clean water.

Photo Courtesy: <https://www.unilever.com/sustainable-living/our-strategy/about-our-strategy/>





Nonetheless there are success stories – such as that of Vodafone, Safaricom and M-Pesa. Today, M-Pesa is a mobile phone-based money transfer, financing and micro-financing service that reaches 25 million<sup>23</sup> people in Africa, Asia and Europe. Yet, it began as a pilot project looking at ways to reach “unbanked communities”.<sup>24</sup> Telecoms company, Vodafone and its Kenyan affiliate, Safaricom, had an idea for the disbursement and repayment of micro-finance loans via mobile phones. However, the pilot revealed that people really wanted a service which would allow city dwellers to send home money to relatives in distant locations via phone messages.

Despite doubts about its viability and financial regulatory issues, the service launched in 2007 when Kenya’s Central Bank gave permission on an experimental basis. By meeting its users’ needs and expectations, M-Pesa has since enabled millions of people on low incomes to access basic financial services, and the business has scaled successfully to Tanzania, Democratic Republic of Congo (DRC), Mozambique, Lesotho, India, Romania and Albania. It has also spurred Safaricom to integrate the SDGs (particularly 9, 8, and 10) within its corporate strategy.<sup>25</sup>

### **An On-going Example – How Philips Supports Healthcare Transformation in Africa**

Philips is committed to delivering innovation able to improve the lives of 3 billion people each year by 2025. It also believes that the UN SDGs 3 and 12 are critical to bettering the health and sustainability of the planet and its people. This led Philips to identify a clear issue for its transformative innovation efforts – strengthening healthcare at primary level in low-resource settings in Africa and South East Asia (aligned with SDG 3, Ensure healthy lives and promote well-being at all ages). And in September 2017, the company extended its commitment to primary and community care by announcing its aim to improve the lives of an additional 300 million of people a year by 2025 in underserved communities.<sup>26</sup>

Such initiatives matter. Seventy percent of Africa’s population still lives in rural areas, frequently without

access to even basic health care. Facilities that do exist often lack clean water and electricity, and maintenance is poor. There are shortages of healthcare workers, and few effective referral systems to secondary and tertiary care. Governments struggle to sustain public healthcare systems financially, while people risk falling into poverty due to the cost of care.

Against this backdrop, Philips has recently entered into an SDG Partnership Platform<sup>27</sup> with the Government of Kenya and the United Nations to accelerate access to primary healthcare. More widely, Philips aims to address some of the most urgent needs: family planning and antenatal care, newborn and infant health, basic emergency care, mental resilience and health education on communicable and non-communicable diseases (such as cervical and breast cancer and diabetes). However, experience shows that single-issue projects often fail. What’s needed is a holistic approach that recognises the inter-related effects of the many challenges confronting primary care – an insight that became one of the starting points for Philips and its Community Life Centers (CLC).<sup>28</sup>

### **The Community Life Center Platform Ecosystem**

A CLC<sup>29</sup> expands a primary care facility – typically focused on mother and child care – into a community hub, supported by infrastructure and services beyond healthcare alone. In collaboration with business and local organisations, the centre may sell drinking water, electricity, solar lighting products and access to the Internet. This improves quality of life for the whole community, creating opportunities for small business development, sporting and social activities, as well as enabling the health facility to generate income to fund itself. Moreover, the CLC approach is modular so it can adjust to the size of population being served, and adapt as lessons are learnt and additional needs identified.

### **Initial Projects in Kenya and Further Implementation**

Philips established the first two CLCs in Kenya. In June 2014,<sup>30,31</sup> a CLC opened in Githurai, (a

**Philips is committed to delivering innovation able to improve the lives of 3 billion people each year by 2025.**

semi-urban area in the east of Nairobi) with the goal of reducing the extremely high rate of maternal and newborn mortality in the local community. The second,<sup>32,33</sup> is in Mandera,<sup>34</sup> a rural county in north-eastern Kenya with one of the world's highest maternal mortality ratios.<sup>35</sup>

For these projects, Philips worked closely with the Ministry of Health, local governments, other businesses and NGOs. The CLCs were scoped in collaboration with all the stakeholders including the local community; the design and research team leveraged “design thinking” and “people centric” capabilities and tools to gather qualitative, context-specific, socio-cultural insights. Philips also drew on other core capabilities – clinical consultancy, health systems expertise (particularly in public health and evaluation), and new business development – to provide the medical hardware and services, work- and patient-flows, and training. This training includes also introducing Community Health Workers (CHWs) to a social franchising model where CHWs offer care in people's home supported by the Philips medical backpack.

More recently, in 2017, the implementation of a mini-CLC in a remote rural site in Tadu,<sup>36</sup> in the Democratic Republic of Congo, marked an important step in confirming the capacity of the CLC approach to transpose and scale to different geographical and socio-cultural settings. Elsewhere, Philips is part of a consortium led by Amref to establish a CLC focused on the delivery of sexual reproductive health services in Ethiopia. The company is also investigating new opportunities to set up CLCs in Sub-Saharan Africa and South East Asia.

### Measuring and Learning

Measurement reveals the CLCs' outcomes. For example, in Githurai a locally-approved operational monitoring and evaluation plan confirmed its positive results. Recent data indicates that some 6000 clients were seen in outpatient visits in the first quarter of 2017 with adult women comprising 63% of the female population (a six-fold increase since the CLC was opened). And ante-natal visits (new

and repeat) have risen from 6 to 13 per quarter, to as many as 670 clients.<sup>37</sup> Furthermore, as patient and visitor numbers have grown, services such as street food vendors, public transport and private “boda boda” motorcycle taxi services have flourished.

Cooperation and commitment from a range of stakeholders and partners requires **transparency and trust**. Parties should be able to discuss and agree on the notion of value in the context of their joint-action and how value will be created and shared.

More widely, Philips and its strategic stakeholders are engaged in studies and evaluations to explore cost implications, quantification of clinical performance, financial models and use-cases for long-term sustainability of CLCs. Lessons have been learnt about regulatory issues (e.g. over a healthcare facility wanting to sell water to finance day-to-day operations in a context where health care is often free); and about the importance of initial scoping, clearly defined joint goals and roles and responsibilities.

Internally, Philips has crystallised this learning into a “cookbook”, detailing the methodology and processes that constitute the CLC approach. Although each situation is different and requires complex solutions based on high-level consultancy and cooperation, this cookbook will facilitate future scaling by enabling next iterations to draw on what has gone before.

### Seven Recommendations for Innovating in the Transformation Economy

What do these case studies reveal about using innovation to turn societal challenges into opportunities for value creation? We believe the examples in this article share seven factors that can help innovators, entrepreneurs and corporations who team up across sectors to create sustainable business for the long-term.



## 1 Select a “Burning” Issue, Take Ownership and Mobilise Stakeholders

Selecting the right issue is fundamental. Is this a significant issue where our company’s capabilities can clearly contribute towards creation of a solution? Is the issue in line with our overall strategic direction and brand promise? If the answer to both questions is yes, it will be easier to mobilise internal support and to ensure that the company is in a credible position to take action.

Maximising the chances of success also depends on identifying an issue of the right size, which can be translated into an initiative with the potential to scale. This avoids daunting complexity and makes it easier to demonstrate progress, in turn inspiring confidence in stakeholders and partners. Initiators also need a strong narrative to motivate employees and to encourage external partners to join forces.

## 2 Identify the Enablers for Success

Next, take stock of the enablers for success such as funding, policy and legislation, R&D, technology,

logistics and operational capabilities, and the level of interest from stakeholder groups. This helps identify where the company can contribute most effectively, and where it needs to rely on partners or other stakeholders and to reach out to them with the right call to action.

## 3 Team Up with the Right Partners

Addressing complex issues requires partners that are in for the long haul, who are willing to learn together and help each other. In the scoping period, the parties need to develop trust, align their thinking on using their capabilities, and agree on a governance structure that ensures results over time. As well as sharing the risks, responsibilities and benefits, partners also need to combine complementary expertise, global know-how and local contextual insights. Experimentation, co-venturing and new business models will often be necessary; as will knowledge experts; deep local contextual insights from for-profit and non-profit stakeholders; and leveraging trusted social networks. In the Transformation Economy, the “how” to act and the “with whom” are typically as important as the “what”.

## 4 Create a Common Definition of Value Among Stakeholders

Cooperation and commitment from a range of stakeholders and partners requires transparency and trust. Parties should be able to discuss and agree on the notion of value in the context of their joint-action and how value will be created and shared. Business modelling should reflect this and state expectations as clearly as possible. Mechanisms for the regular review of value flow and for maintaining a high degree of transparency should be put in place.

## 5 Define Baseline and Performance Indicators

Provision of funding for socio-economic and/or environmental challenges is increasingly subject to measurement of outcomes (which often emerge over longer periods of time). This means careful setting of baselines for performance indicators is key. Project milestones should also be agreed by all partners and key stakeholders from the start to avoid unrealistic expectations and/or use of inappropriate conventional measurements. Joint initiatives to solve complex issues require patience, commitment and good monitoring. And an “agile” way of working, where plans and tactics can be continuously adapted is a sound basis for shaping governance and management.

## 6 Never Compromise on Customer Experience

In the contexts we have discussed, partnerships can readily fall into the trap of thinking that any solution is better than no solution. Too often “doing good” for society and the environment has led to market failure. It is assumed that socially or environmentally valuable solutions require a sacrifice in terms of the quality, performance, and user experience. On the



The Githurai-Langata health facility in Kenya. Philips, in partnership with the local county government, transformed the facility as a model for its Community Life Centers project.

## The Transformation Economy offers tremendous scope: turning social and environmental issues into business opportunities that can make brands more meaningful and respected, and it can generate long lasting revenue.

contrary, such solutions should offer better quality, a higher level of performance and a better experience than current ones. It is a matter of doing well (building a loyal customer base by delivering a great experience) as well as doing good (delivering results on commitments to solve significant societal issues).

This requires all key stakeholders and partners to participate in setting clear performance and quality targets using a top-down and bottom-up approach that creates a sense of ownership in the solution. In addition, the use of people-focussed research tools and design-thinking methodologies can help in gathering deep, qualitative insights and co-creation of context-specific value propositions able to deliver the desired user experiences.


### 7 Leverage Learning in Contexts with Similar Challenges and Conditions

For most companies, experimenting with opportunities in the Transformation Economy starts gradually. Capturing and leveraging lessons from successes and failures (together with the partners involved) helps to ease the way to new opportunities in other contexts with similar challenges and conditions. This allows the network to continue to extend its market for value delivery and to build on its experience. It may also increase the attractiveness of new partners for similar ventures in different settings.

### Final Word

The Transformation Economy offers tremendous scope: turning social and environmental issues into business opportunities that can make brands more meaningful and respected, and it can generate long lasting revenue. Furthermore, working towards outcomes with a sense of purpose can motivate and engage employees. But there are no business models to “cut and paste”, and value creation partnerships require

an investment in time and resources. Nonetheless such partnerships offer a platform for loyalty and strong customer engagement which is very different from today’s business environment where propositions are easily copied and under constant price pressure.

We believe the way forward is first to create awareness and stimulate interest in issues that may resonate within your organisation. It’s a matter of finding the right opportunities that you can leverage to build capacity and relationships to succeed in this new paradigm. Internal organisational transformation is as important as external. Breaking down silos and creating multi-disciplinary platforms able to participate in value sharing network initiatives is essential. Companies can only inspire external stakeholders and partnerships if they themselves radiate passion, commitment, and a spirit of collaboration to solve challenges and to transform how value is created and shared. 

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#### References

- UN (2015) "Sustainable Development Goals – 17 goals to transform our world", 25 September. <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>
- United Nations Conference on Trade and Development website (2014) *Developing countries face \$2.5 trillion annual investment gap in key sustainable development sectors, UNCTAD report estimates* - <http://unctad.org/en/pages/PressRelease.aspx?OriginalVersionID=194>
- Eggers, W. D., Macmillan, P. (2013) *The Solution Revolution. How Business, Government and Social Enterprises are Teaming Up to Solve Society's Toughest Problems*. Boston: Harvard Business Review Press.
- World Economic Forum (2016) *Health System Leapfrogging in Emerging Economies. Ecosystem of Partnerships for Leapfrogging*, a report produced in collaboration with the Boston Consulting Group, May.
- Interface website (2016) "The Interface Story" - <http://www.interfaceglobal.com/Sustainability/Interface-Story.aspx>
- The Natural Step website (2017) "Case Study: Interface" - <http://thenaturalstep.nl/project/interface/>
- Interface website (2016) "The Interface Story" - <http://www.interfaceglobal.com/Sustainability/Environmental-Footprint/Waste.aspx>
- Danone Communities website (2016) "Addressing malnutrition and access to safe drinking water through social business incubator" - <http://www.danone.com/en/for-all/sustainability/unique-business-approach/danone-communities/>
- YouTube (2014) "An interview on social business with Franck Riboud", former Chairman and CEO, Danone Group - [https://www.youtube.com/watch?v=hC5Wz3\\_tnnA](https://www.youtube.com/watch?v=hC5Wz3_tnnA)
- Yunus Social Business Blog (2016) "Grameen-Danone Foods Ltd" – Nutrition <http://www.yunusb.com/blog/category/case-studies/>
- The Grameen Creative Lab website (2016) "Grameen Danone Foods Ltd" - <http://www.grameencreativelab.com/live-examples/grameen-danone-foods-ltd.html>
- Yasmin, N. N. (2016) *Sustainability of a Social Business: A Case Study on Grameen Danone Foods Limited* in Asian Business Review, Vol 6, n.3, 18 December <http://journals.abc.us.org/index.php/abr/article/view/887>
- The Grameen Creative Lab website (2016) "Grameen Danone Foods Ltd" - <http://www.grameencreativelab.com/live-examples/grameen-danone-foods-ltd.html>
- The Grameen Creative Lab website (2016) "Grameen Danone Foods Ltd" - <http://www.grameencreativelab.com/live-examples/grameen-danone-foods-ltd.html>
- Sustainable Development Goals and the post-2015 agenda: A Business Manifesto signatories including Unilever and Philips (2015) - [https://www.unilever.com/Images/sustainable-development-goals-and-the-post-2015-agenda-business-manifesto-january-2015\\_tcm244-423602\\_en.pdf](https://www.unilever.com/Images/sustainable-development-goals-and-the-post-2015-agenda-business-manifesto-january-2015_tcm244-423602_en.pdf)

- Unilever website (2017) "UN Global Goals for Sustainable Development" - <https://www.unilever.com/sustainable-living/the-sustainable-living-plan/our-approach-to-reporting/sdg/>
- Wash4Work website (2016) "WASH4WORK" - <https://wateractionhub.org/wash4work/>
- Unilever website (2014) - "Joining forces to tackle the sanitation crisis" - <https://www.unilever.com/news/news-and-features/Feature-article/2014/Joining-forces-to-tackle-the-sanitation-crisis.html>
- Unilever website (2017) – Lifebuoy Mumbai trial <https://www.unilever.com/sustainable-living/improving-health-and-well-being/health-and-hygiene/changing-handwashing-habits-for-better-health/>
- Unilever website (2015) - "Lifebuoy way of life. Towards universal handwashing with soap: Social Mission Report" - [https://www.unilever.com/Images/lifebuoy-way-of-life-2015\\_tcm244-418692\\_en.pdf](https://www.unilever.com/Images/lifebuoy-way-of-life-2015_tcm244-418692_en.pdf)
- Rodrigues J., Baker, G. A. (2012) *Grameen Danone Foods Limited (GDF)* in IFAMA (International Food and Agribusiness Management Review), Vol. 15, issue 1, January-[https://www.researchgate.net/publication/227366476\\_Grameen\\_danone\\_foods\\_limited\\_GDF](https://www.researchgate.net/publication/227366476_Grameen_danone_foods_limited_GDF)
- Yasmin, N. N. (2016) *Sustainability of a Social Business: A Case Study on Grameen Danone Foods Limited* in Asian Business Review, Vol 6, n.3, 18 December <http://journals.abc.us.org/index.php/abr/article/view/887>
- Vodafone website (2016) "M-Pesa reaches 25 million customers milestone", 25 April 2016 - <https://www.vodafone.com/content/index/media/vodafone-group-releases/2016/mpesa-25million.html>
- YouTube (2013) "The Story of M-Pesa" – <https://www.youtube.com/watch?v=i0dBWae3aQ>
- KPMG (2016) "Case study: Integrating the Sustainable Development Goals into Safaricom's Corporate Strategy" - <https://home.kpmg.com/content/dam/kpmg/pdf/2016/07/za-safaricom-case-study.pdf>
- Philips (2017), Philips Global Website - <https://www.philips.com/a-w/about/news/archive/standard/news/press/2017/20170918-philips-steps-up-commitment-to-ensuring-healthy-lives-for-all-during-united-nations-general-assembly-week.html>
- Philips (2017) "Philips Partners with the Government of Kenya and the United Nations to improve access to primary healthcare in Africa", Philips Media, May 2 - <http://www.philips.com/a-w/about/news/archive/standard/news/press/2017/20170502-philips-partners-with-the-government-of-kenya-and-the-united-nations-to-improve-access-to-primary-healthcare-in-africa.html>
- Philips (2017) "Introducing the Community Life Center platform", Philips Website - <http://www.philips.com/a-w/about/sustainability/healthy-people/supporting-communities/fabric-of-africa/programs/philips-community-life-project.html>
- Philips (2016) "The Philips Community Life Center approach" video in YouTube, December 2 - <https://www.youtube.com/watch?v=zxE1zfSpFI&t=58s>
- Philips (2014) "Philips inaugurates Africa's first Community Life Center aimed at strengthening primary health care and enabling community development", October 3 - <http://www.philips.com/a-w/about/news/archive/standard/news/press/2014/20141003-Philips-inaugurates-Africa's-first-Community-Life-Center-aimed-at-strengthening-primary-health-care-and-enabling-community-development.html>
- Goin, J. (2014) "Philips innovative clinic opens in Kiambu county" in *Capital News*, October 4 - <http://www.capitalfm.co.ke/news/2014/10/philips-innovative-clinic-opens-in-kiambu-county/>
- Philips (2016) "Philips and UNFPA collaborate to transform lives in Mandera County, Kenya – announce plans to implement Kenya's second Community Life Centre", May 12 - <http://www.philips.com/a-w/about/news/archive/standard/news/press/2016/20160512-philips-and-unfpa-collaborate-to-transform-lives-in-mandera-county-kenya.html>
- Business Daily (2016) "Philips plans Mandera healthcare centre to reduce cost burden", May 12 - <http://www.businessdailyafrica.com/economy/Philips-plans-Mandera-healthcare-centre/3946234-3201086-yuibj3/index.html>
- Chatterjee, S. (2015) "We can change the story of Mandera", October 22 - <https://www.standardmedia.co.ke/article/2000180345/we-can-change-the-story-of-mandera>
- UNFPA (2014) "Kenya Counties with the Highest Burden of Maternal Mortality", 13 August - <http://kenya.unfpa.org/news/counties-highest-burden-maternal-mortality>
- Philips (2017) "The first Philips Community Life Center (CLC) in the DRC" in YouTube, January 18 - <https://www.youtube.com/watch?v=Qg7OeHk04w>
- Philips (2017) from figures provided by the local Health Information Management System in Githurai used to report to the District level (2) on a monthly basis.



# AI BOOSTS PROFITS

A decorative graphic consisting of a horizontal line with a thin blue center line. Above and below this line are overlapping, wavy shapes in shades of green, purple, and blue, creating a sense of motion and depth.

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# To find value in the digital age, FIND IT FOR OTHERS FIRST

BY OMAR ABBOSH, VEDRANA SAVIC AND MICHAEL MOORE



**To grow their businesses consistently, leaders must envision a much bigger picture of where value resides than they have traditionally. And they must be prepared to create much more value than they can capture for themselves.**

**W**hy do so many companies struggle to identify and capture growth opportunities? The digital age is brimming with promise on this front. Yet regularly growing the portion of a company's share price that is based on expectations of future earnings growth – while at the same time growing the portion based on actual earnings – is not the norm.<sup>1</sup> In fact, only two percent of the 995 large organisations examined in a recent Accenture research study have accomplished this feat over the past 16 years. (See “About the Research” for more detail.)

Our research suggests two reasons why this percentage is so low.

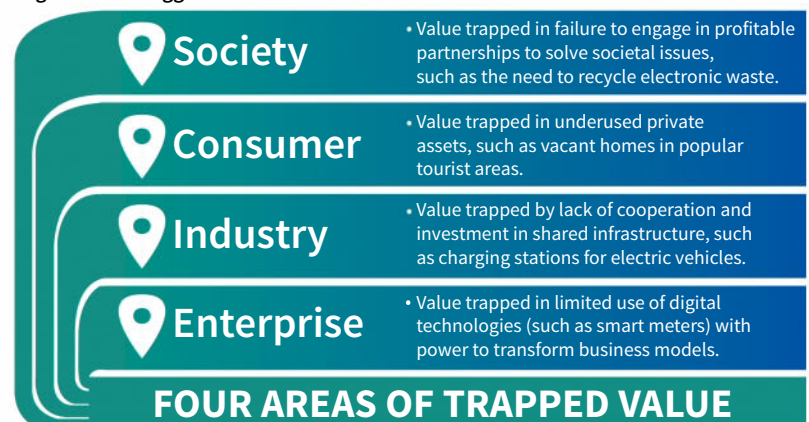
First, while a tremendous amount of new value can result from new or advancing technologies, that value is often trapped, both within and beyond the boundaries of any single business. For example, executives often overlook opportunities in their existing enterprise to apply digital capabilities to serve customers in new ways, and thus to increase revenues (rather than solely to reduce costs). In their industry, value is often trapped where outdated infrastructures serve scores or even hundreds of companies and where change would upset the status quo – even though the status quo does not support accelerated adoption of new products and services. (It's also possible that a few companies in any given industry are already benefitting from innovations that, if shared, could serve many more and grow the pie for everyone.)

Value is trapped with the consumer when potential demand is latent, say, a desire to save time or to simplify a task. It is also trapped when companies can't see the potential sources of surplus supply that consumers possess (for example, a vacation home that sits empty, or downtime that a consumer would trade for the chance to make money). And there is an enormous amount of societal value that remains trapped when companies and other entities could, but haven't, come together in profitable partnerships that benefit constituents beyond their immediate customers and shareholders. (See Figure 1.)

The second reason is counterintuitive: To grow value consistently in the current business environment, many companies are going to need to release much more value for others than they capture for themselves. Many companies are still viewing value creation too narrowly; they see industry profits as a fixed pool. They envision and insist on margins that are unnecessarily high in a

Executives often overlook opportunities in their existing enterprise to apply digital capabilities to serve customers in new ways.

Figure 1: The Bigger Picture of Value



world of vastly larger demand and value release. That type of value mindset made sense when companies competed more as single entities going head-to-head against others in an industry. But today, companies are increasingly partners, not simply competitors, and are participants in broad ecosystems, not just traditional industries. It's "coopetition" in the fullest sense. Even consumers are becoming part of these ecosystems. One way is by acting as "prosumers" – for example by sending electricity back to the grid from their solar panels.

So, if your position is – "This is the value we create and capture for our company today; the market will reward us" – you've already lost.

### Value Visionaries

The high performers in our study, those that target and create value growth most consistently, think about value differently. They are value visionaries, acutely aware that releasing value has a flywheel effect. This awareness helps them spot opportunities for value creation where others do not – and to convert opportunities into reality where others cannot. UberX, for example, was estimated to have generated \$2.9 billion in consumer surplus in its four biggest US markets in 2015 – Chicago, Los Angeles, New York, and San Francisco – equivalent to more than six times its estimated revenues generated in these cities. (For a more comprehensive example, see "Illumina Releases Value Consistently and Broadly".)

To see just where and how other high performers do this, we need to explore in more detail the four main areas where trapped value resides.

**In the enterprise.** In any given enterprise, value can be trapped by an overreliance on traditional business models and capabilities. Value visionaries overcome this challenge by innovating on top of their core capabilities. Tencent, a leading provider of Internet value added services in China, offers an example: the company's WeChat messaging app, released in 2011, has more than 900 million active users.

But Tencent unlocked a torrent of additional value when it began using its social media services to facilitate mobile payments. The volume of mobile payments in China reached \$8.6 trillion in 2016, compared with just \$112 billion in America.

**Value is trapped in an industry when only a few companies are reaping rewards in a marketplace where many more could benefit.**



In the first quarter of 2017, WeChat Pay accounted for 40 percent of the market.

Importantly, releasing trapped value in a legacy business creates investment capacity required to support an incumbent's innovation efforts in other areas. In fact, our research has found that companies that innovate pervasively – for their legacy businesses and for new ventures – report stronger performance than companies that innovate only selectively in one area or the other.

**In the industry.** Value is trapped in an industry when only a few companies are reaping rewards in a marketplace where many more could benefit. It also exists when it would take more than one company to deliver an infrastructure improvement that could and would reward many more.

Consider how Volkswagen, BMW, Daimler and Ford joined together to create "Ionity" – a network of over 400 high-power charging stations for electric vehicles across Europe, which will use the Combined Charging System (or CCS) standard. This move is critical to accelerating demand for electric vehicles, in a market that is expected to reach 56 million vehicles in circulation by 2030, 28 times the 2016 stock, even under a low-growth scenario.

**For the consumer.** Consumer trapped value generally exists where there is latent demand for something that consumers themselves actually own in abundance, and under-utilise. Airbnb was founded on the idea that there was latent demand for less expensive and more convenient lodging – and enormous untapped stores of such lodging owned by other consumers who were willing to monetise those assets. It thrives on the consumer value being released for travellers, and for individuals who had vacation homes or apartments sitting empty or who were previously incurring higher costs to attract and secure renters. Airbnb is estimated to have captured \$2.5 billion in revenue between 2010 and 2016. But it is estimated to have released \$20 billion in host revenue.

Similarly, transportation technology companies have tapped into latent consumer demand for more convenient ways to travel locally. Grab, the leading on-demand transportation and mobile payments platform in Southeast Asia and its highest-valued tech company, has attracted not only freelance drivers but also experienced taxi drivers. In late October 2017, Grab completed one billion rides across Southeast Asia. With over 2.1 million drivers and upwards of 72 million consumer app downloads, we estimate that Grab has helped generate monthly net income of approximately US\$2,200 per driver.




## IT IS A TALL ORDER TO BE MORE ATTENTIVE TO ONE'S LEGACY BUSINESS AND, CONCURRENTLY, MORE VISIONARY ABOUT OTHER SOURCES OF TRAPPED VALUE.

**For society.** Finally, in society at large, trapped value exists where companies have opportunities to partner profitably to create new benefits for the general population. Take reliable access to electricity. Tesla recently partnered with Neoen, a French renewable energy company, and the local government in South Australia, to build and install the world's largest lithium ion battery plant. The 129-megawatt-hour (MWh) battery is tied to a wind farm run by Neoen; the plant is being used to provide much-needed reliable energy in an area inhabited by 1.7 million people, where power outages and shortages have been the norm. For Tesla, the project was a time-critical proof that it can deliver on its promises, building confidence in its renewable energy capabilities.

### Complementary Pursuits

It is a tall order to be more attentive to one's legacy business and, concurrently, more visionary about other sources of trapped value. Nonetheless, visionary companies improve the way the world lives and works by unleashing new sources of value not only within, but importantly beyond the boundaries of their own enterprise. They know that these are not mutually exclusive pursuits.

Recall the late management guru Peter Drucker's view: "The proper social responsibility of business is to turn a social problem into economic opportunity and economic benefit, into productive capacity, into human competence, into well-paid jobs, and into wealth. His words rang true when he wrote them; they ring even truer today. 

### Illumina Releases Value Consistently, and Broadly

California-based Illumina, founded in 1998, has outgrown its peers in both the value generated by current operations and investor expectations for nine out of the last 15 years. It has done this by balancing its investments in innovation wisely, and by seeking to unlock trapped value beyond the boundaries of its own enterprise.

Illumina's core business is gene sequencing – genomics. Ten years ago, it cost the company US\$10 million to sequence a single human genome. In 2014, Illumina's HiSeq X did this for just \$1000. And even with about 90 percent market share, Illumina continues to push to release trapped enterprise value: its latest NovaSeq technology is expected to break the \$100 barrier.

Meanwhile, the company, which reported global revenues of \$2.4 billion in 2016, is also focussed on growing the size of the pie overall, and on staking a claim in the new markets it is helping to create. In 2015, Illumina formed Helix, an initiative dedicated to making DNA-based learning and its benefits more accessible – and hopefully tapping latent consumer demand to have increasingly personalised services and products. For \$80, Helix takes a customer's saliva sample and sequence their DNA, creating an individual profile. These people can then "shop" in Helix's open marketplace of applications provided by third-party

companies. They can use their profile in a variety of ways, for example, to learn more about their genealogy, or acquire a tailored health and fitness regimen. The third-party providers benefit from the release of industry trapped value – as they get access to the portions of data that are relevant to their service in exchange for ceding a share of their revenue to Illumina.

### About the Research

We analysed the growth of current operations (current value) and investor expectations (future value) of 995 of the largest companies by revenues across 14 industries in 12 countries over the period 2000-2016. We calculated a two-year rolling average for both measures (to control for cyclical fluctuations) and then calculated the annual percentage growth for each measure, for each company. We then established an industry benchmark based on the median performance within each of our 14 industries. To establish an indicator of high performance – a "value release premium" – we deducted the industry benchmark from company-level growth. In each year, trapped value release was determined to occur when both future and current value had positive value release premiums. Those that successfully released trapped value for at least 60 percent of the years analysed (equating to two percent of the sample), were classed as "consistent value releasers" (the high performers).

### About the Authors



**Omar Abbosh** (*left*) is Accenture's Chief Strategy Officer. **Vedrana Savic** (*center*) is the Managing Director, and

**Michael Moore** (*right*) is a Senior Principal, with Accenture Research.

#### Reference

1. Our research shows that increasing investor expectations (future value) while converting previous growth promises into reality (current value) at a higher rate than industry peers, over a period of time, enables companies to sustain strong roots (profitable core businesses) so that they can weather the unexpected storms brought by disruption in their industry or in the broader market. In parallel, strong roots are needed to fuel growth in new businesses, which is critical to uplifting investor confidence. Relying on only current or future value growth makes companies more vulnerable to disruption.

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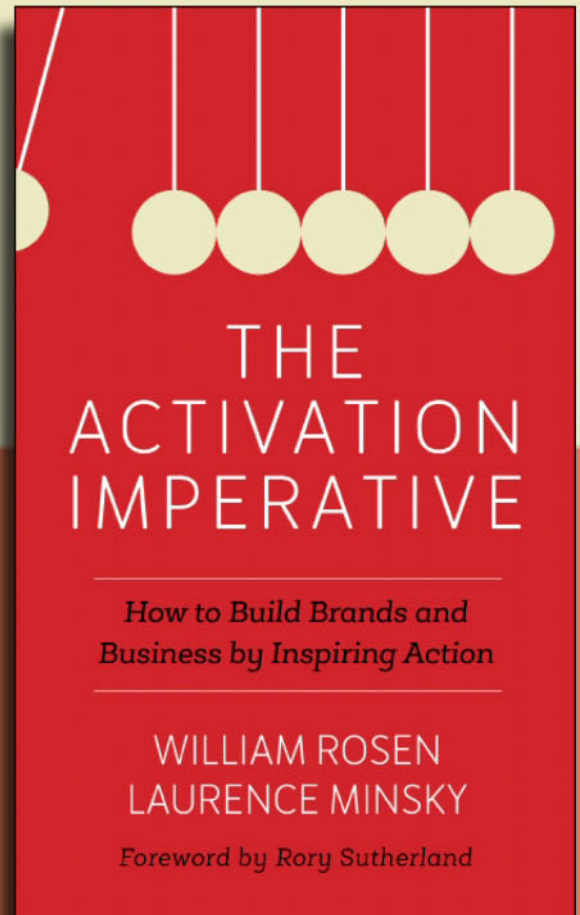
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# TOLERATING FAILURE: A KEY TO CREATING SUSTAINABLE BUSINESS

BY CB BHATTACHARYA, ERNESTO CIORRA AND JOANNA RADEKE

**Best-in-class companies galvanise their workforces to serve a larger purpose – creating a better world. They empower employees by providing leadership support and a sense of psychological safety. We illustrate how it can be done based on the example of Enel “My Best Failure” programme for celebrating failure and encouraging innovation.**

**T**he idea of creating sustainable business is not new to business executives. They all should be creating shared value (Kramer and Porter 2011),<sup>1</sup> which in simpler terms means making money and doing good, and they all should be writing the new story of business (Freeman 2017)<sup>2</sup> by transforming their companies to become responsible citizens and changing the world for better.

But where are the real life examples of such transformations? With issues such as global warming, water scarcity and rickety supply chains representing dire threats to human societies, the absence of corporate action to date is startling. Scientists have calculated that humans must decrease carbon dioxide output by around 1.4 percent each year to prevent catastrophic warming. Yet the world’s 500 largest companies increased their emissions by 1 percent between 2010 and 2015.<sup>3</sup> Water scarcity is getting worse, contributing to famine, military conflicts as well billions of dollars in losses for companies. Yet

a 2016 survey of hundreds of companies found that they are moving slowly, with performance not “improving markedly” year over year.<sup>4</sup> Only 15 percent of companies had a “comprehensive water policy”, and only two-thirds were even measuring their water usage.<sup>5</sup>

Over the past five years, we have visited dozens of large, publicly listed firms and spoken with hundreds of employees, middle managers and senior leaders. We have also ventured outside of corporate headquarters to the front lines, visiting factories, mines, retail stores and other facilities across the globe. In addition, we have engaged in-depth with at least thirty large, multi-national corporations as part of the Sustainable Business Roundtable – a unique, peer-to-peer learning network one of us founded (CB Bhattacharya), one of us manages (Joanna Radeke), and one of us is part of (Ernesto Ciorra).

Our extensive research has revealed that best-in-class companies galvanise their workforces around

**Business executives should be creating shared value and they all should be writing the new story of business by transforming their companies to become responsible citizens and changing the world for better.**



the future and the common good by making it worthwhile for individuals, both from a financial or career standpoint and from the standpoint of their identities as professionals (Bhattacharya and Polman 2017)<sup>6</sup>. They try to create workplaces in which employees do not have to check their humanitarian or environmental commitments at the door, and where sustainability and profitability objectives go hand in hand (Polman and Bhattacharya 2016).<sup>7</sup> Employees in such companies are engaged to serve a larger purpose – creating a better world.

The cases of enlightened companies show that this engagement around the common good often happens at unexpected moments and in unexpected places. When one of us (Bhattacharya) interviewed the Enel CEO in June 2016, and he told us about his personal epiphany at a dessert, we knew the company is one to watch out for. When one of us (Bhattacharya) found himself at a big ceremony in the Enel headquarters in Rome, where employees were receiving awards from the same CEO for their business failures, we knew we are onto a new story of business.

### Letting Them Fail: The Enel Case

Fear is the main obstacle and the worst enemy to change, and if companies want to innovate and to experiment in order to stay competitive, but also respond to the challenges such as climate change or scarce resources, they have to take risks and work on spreading a blame-free culture within the corporate environment.

Three years ago Enel adopted an Open Innovation approach to “flip its point of view” and capitalise on what it saw as a source of tremendous growth by dedicating a single organisational unit to the management of information flows with all its main stakeholders. Radically changing the way the company shares information and approaches the taboo of failure required a series of new practices: creating spin-offs to manage new businesses, measuring innovation KPIs all around the company, identifying innovation managers for every function, business line and area, and connecting those people with a chief innovation officer who reports directly to the CEO. To improve the company’s appeal and therefore expand its network of experiences, Enel has embarked upon a challenging but rewarding transformation, that requires shifts in key areas such



Celebrating failure and encouraging innovation at companies can aid employee engagement, because it contributes to the feeling of psychological safety and availability.

as neutralising the fear of what is new, adopting one or more UN Sustainable Development Goals as a corporate mantra, identifying innovation heroes and ambassadors in and outside of the company, involving providers, universities and customers in the innovation journey, being courageous in the drive for innovation, nurturing people’s creativity, as well as involving creative people from other sectors in all innovation projects.

In 2015, to counteract the stigma of failure and win over the resistance that surrounds failure in the workplace, Enel launched “My Best Failure” – an online platform that invites colleagues from all over the world to share their “best failures”. These include efforts to launch an innovative product, introducing a new work technique and even trivial calculation errors. The platform has catalogued Enel’s setbacks, expanding the overall corporate experience. The initiative serves as a first step towards building a culture of failure, where people are not afraid to speak about their errors, but are open to discussing them publicly with the aim of avoiding similar errors in the future. On the other hand, to preserve open and frank internal debate and exchange, the company ensures that management does not assume a judgmental attitude.

Common failures in all types of businesses are normally set aside with a mixture of embarrassment and a desire to have another go without truly reflecting on the lesson at hand. “My Best Failure” takes a different approach: each edition invites people to share their own particular failure, and awards the most useful ones. The winners of last year’s edition included those who wanted to optimise road repair procedures after excavation work; those who involuntarily invited 37,000 people to enroll in a social network that no one was familiar with, and even one person who failed to convince their colleagues about the rather unorthodox way of improving the company’s organisational chart. The next edition will kick off in January 2018 and will be followed by an award ceremony, giving the company another batch of important lessons.

The mistakes shared on the “My Best Failure” platform were made in an attempt to do something new, something that had never been tried before; a necessary risk for a company that truly believes in innovation for a sustainable future, and the only way to multiply its chances of success. On the one hand, shining a

spotlight on what did not go as planned allows for an in-depth analysis of what to do better next time and, on the other, allows one to take note of negative results.

The prize awarded to the three winners was in line with the spirit of the “My Best Failure” programme itself: each person had a chance to enrich his/her career by spending time in another company unit of own choice or in one of the start-ups that collaborate with Enel.


### The important role of psychological safety

In the 1990s, William Kahn, Professor of Organisational Behaviour at Boston University, introduced the term engagement based on his observation that people have a choice as to how much of themselves they are willing to invest in their jobs. Kahn conducted in-depth interviews with employees at two organisations. He discovered that employees were much engaged both emotionally and physically, when they experienced psychological safety: a feeling they were valued, accepted, and respected – and able to perform in a positive work environment (Kahn 1990).<sup>8</sup>

As with Enel, celebrating failure and encouraging innovation at companies can aid employee engagement, because it contributes to the feeling of psychological safety and availability. What is really going on is courage enhancement. By creating an atmosphere of safety and reducing the pressure to succeed, employees feel confident to share their ideas. Employees who once felt inhibited suddenly feel free to express their thoughts, frequently contributing to the innovations that drive the company.

In progressive companies, where failure and innovation are encouraged and emphatic, failure-tolerant leaders are developed, such leaders have closer ties with their employees (Farson and Keyes 2002).<sup>9</sup> Failure-tolerant leaders try to break down barriers that separate them from their followers. They engage at a personal level with the people they lead. This contributes to a higher sense of self-efficacy in employees. Employees in such companies are not afraid of being themselves at work and they do not feel they need to check their personal moral code at the door. In addition, employees are encouraged to collaborate with outside actors, such as universities or even other companies. This helps employees connect to that all-important sense of a higher purpose.

### Conclusion

Sustainability challenges of today can only be addressed if employees start believing in their power to transform the company. Leadership support and the sense of psychological safety are crucial to such empowerment. Empowerment enables employees to take ownership of difficult sustainability challenges thereby making both our businesses and our world a better place. 

### About the Authors



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### References

1. Porter, Michael E. and Kramer, Mark R. (2011). Creating Shared Value. *Harvard Business Review* January-February 2011.
2. Freeman, R. Edward. (2017). The New Story of Business: Towards a More Responsible Capitalism. *Business and Society Review* 122 (3): 449-465.
3. Moorhead, John and Nixon, Tom. (2016). Global 500 Greenhouse Gases Performance 2010-2015. *Thomson Reuters* June 2016.
4. CDP (2016). Thirsty business: Why water is vital to climate action. *CDP 2016 Annual Report of Corporate Water Disclosure*.
5. Ibid.
6. Bhattacharya, CB and Polman, Paul. (2017). Sustainability Lessons from the Front Lines. *Sloan Management Review* 58 (2): 71-78.
7. Polman, Paul and Bhattacharya, CB. (2016). Engaging Employees to Create a Sustainable Business. *Stanford Social Innovation Review* 14 (4): 34-39.
8. Kahn, William A. (1990). Psychological Conditions of Personal Engagement and Disengagement at Work. *Academy of Management Journal* 33 (4): 692-724.
9. Farson, Richard and Keyes, Ralph (2002). The Failure-Tolerant Leader. *Harvard Business Review* August 2002.

Sustainability challenges of today can only be addressed **if employees start believing in their power to transform the company.**





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 A hand is shown pointing upwards towards a large, stylized '5G' logo. The logo is surrounded by a complex network of white lines connecting various circular icons, each containing a silhouette of a person or a device. The background is a dark blue gradient with a subtle grid pattern.
 

# 5G

# 5G IS COMING...

## *But What is It?*

BY WILLIAM WEBB

The expectation around 5G surpasses all previous generations. We are told it will herald a digital utopia with services beyond our dreams and gigabit data rates. But that is not how things appear to be working out. Instead, 5G may just be a minor upgrade to 4G networks, performed by increasingly cash-strapped mobile operators. For better services consumers may look to Wi-Fi and to alternative providers. Rather than delivering the crowning achievement of 40 years of mobile success, 5G may be the first indication that its best days are past.

Ten years ago the iPhone was introduced, bringing about the most dramatic change in the use of telecommunications ever seen. Since then there has not been much technological change but data usage, app usage and new business models have grown astoundingly.

Each generation of mobile phone technology tends to occur on a ten-yearly cycle and we are

now contemplating 5G. So a key question is whether this trend will continue for the next ten years. Will we see another hundred-fold increase in data usage, ever more apps and more dramatic changes in the way we live our lives, or was this a one-off change that has now mostly run its course? Or will other factors such as coverage become more important?

5G is predicated on assuming the data usage trend will continue, and will even accelerate, and that latency will also become more critical. It broadly aims to deliver even more capacity and even faster speeds than 4G. To many this feels right – it is hard to remember a time when things were not growing fast. This future would see widespread use of virtual and augmented reality, autonomous cars that need low-latency Gbit connectivity, body-cams, ubiquitous Internet of Things (IoT) and many things we cannot currently imagine. It would be delivered through the current industry structure of fixed operators, mobile network operators (MNOs) and large



5G is predicated on assuming the data usage trend will continue, and will even accelerate, and that latency will also become more critical.

manufacturers. In such a future, the key issues might include privacy, security, ensuring equal access for all and more broadly helping those left behind by rapid societal change.

But nothing can grow forever and cold, hard logic suggests we may be at peak growth now, with the rate of growth falling and demand levelling out perhaps by 2027.<sup>1</sup> This alternative future has us reaching a point where we do not have the time to watch any more video downloads and find VR a minority occupation restricted to the home. IoT usage continues to emerge slowly and needs little bandwidth. MNOs do not invest because there is no likelihood of increased revenues. But ubiquitous connectivity becomes ever-more important and to achieve it we will get much better at using multiple networks. Google's Project Fi pointed the way to a future where Wi-Fi is the first choice for connectivity, with cellular used as back-up when needed. Wi-Fi would increasingly provide coverage in buildings, on trains and in dense areas with voice calls taking place using IP-based solutions such as WhatsApp. Not only would this keep costs down and improve not-spots, it would also herald a shake-up in industry structure with operators becoming more like wholesale providers. Users would be able to take greater control: apps might allow them to discover the best mobile operator and Wi-Fi networks for their daily lives and to tailor connectivity packages to suit, in turn spurring a range of connectivity providers to deliver better solutions. The key implications would be seen first in the industry structure, with more third-party service providers, blurred boundaries between fixed and mobile, new types of competition and an urgent need for reformed regulation.

So which future transpires?

Most would initially assume that the next ten years will be like the last ten years and as a result 5G will focus on more speed and capacity and drive continued growth in data usage. But there are many flaws with this vision, the biggest of which is that it is too expensive. Despite consuming vastly more data than ever before, we are not prepared to pay more for it. Across the world, revenues at mobile operators have been flat or in decline. For example, Timotheus Höttges, Chief Executive of Deutsche Telekom (DT), recently noted that European operators' earnings before interest and tax (EBIT) have fallen by 44 percent in the last 10 years, while an FCC report<sup>2</sup> showed US ARPUs had declined 7% in the last year alone. MNOs still remember launching 4G as a premium service which had little take-up causing them to quickly re-offer it for the same price

as 3G. So simplistically, 5G looks like it will cost the operators more and yet not result in any increase in revenue – that is clearly not a sound business case.

Whether 5G will cost more rather depends on what 5G actually is. Amazingly, given that some claim they are already trialling 5G, there is still little consensus on what constitutes 5G. Looking at various trials, announcements and developments, there appears to be four possible models.

1. The most likely is that 5G is a small improvement on the 4G radio interface, enabling higher speeds and lower latencies. This is embodied in the so-called “new radio” and might be a minor upgrade to base stations. It is often called enhanced mobile broadband. But this 5G would hardly be noticed by consumers and nor would it deliver much to the operators.
2. A second variant is so-called massive machine communications, more normally known as Internet of Things (IoT). But 4G is delivering this capability with technologies such as NB-IoT and the current thinking is that this will continue to be the IoT mechanism for 5G. So nothing new here.
3. A more speculative concept is sometimes called ultra-reliable and low-latency communications and might deliver blisteringly fast speeds using new frequency bands far above anything currently used for cellular. Consumers *would* notice this, primarily because it would require tens of thousands of base stations in each city. But most operators now accept that the costs of such a deployment and the technical risks involved are unmanageable.
4. Finally, some such as AT&T and Verizon in the US, have re-purposed a mobile technology to fixed communications and are proposing to use 5G-like solutions to deliver broadband to the home, in a concept known as fixed-wireless access (FWA). Most would not class this as 5G, but Verizon and AT&T have chosen to do so, confusing the picture. FWA has been tried with every previous mobile generation – but never succeeded at scale.

Whether anyone will pay more for 5G depends on what it is. If it is the first option set out above - enhanced mobile broadband (EMB) – then it is highly unlikely that anyone will notice any difference or pay more for it. Happily, EMB does not cost the operators much either. So expect announcements from about 2018 onwards that networks are now 5G, but do not expect to notice any difference either in performance or in ARPU.

**Simplistically, 5G looks like it will cost the operators more and yet not result in any increase in revenue – that is clearly not a sound business case.**

We can dismiss the second and fourth options above (IoT and FWA) as either happening in 4G, or not being relevant to this 5G discussion. That leaves the ultra-reliable communications. The mobile operators had been hoping that new applications such as autonomous cars, would find this connectivity indispensable and be willing to pay large fees for it, but over the last year or so realisation has started to set in that this is unlikely. Autonomous cars are, well, autonomous, and do not need connectivity beyond that currently available (otherwise, how would all the tests in California and elsewhere be happening?). Remote surgery is often cited as an application, but there are not many remote surgeons in the world, and they tend to operate from buildings with good fibre connectivity anyway. Despite claims to the contrary by equipment vendors desperate to sell 5G base stations, new revenue streams of any significance are unlikely and “build it and they will come” is a huge risk with such an expensive deployment approach.

But perhaps it was always so – perhaps each new generation required a leap of faith? There is a belief in the industry that the odd-numbered generations have been loss-making while the even-numbered ones have been profitable. 2G fixed the security and capacity issues in 1G and was a great success. 3G was a leap into the unknown world of data and did not quite get it right. 4G corrected the problems with 3G and has been successful. 5G appears to be another leap into the unknown. But unlike 3G which happened during a tech bubble, 5G is happening in an era of austerity.

We started with a question – as to whether the next ten years would be the same as the past, or would see an alternative world where the demand for ubiquitous connectivity moves us towards widespread Wi-Fi as a key access mechanism. The discussion above suggests that of all the things 5G could be, it will actually end up as just a minor enhancement to 4G, something we hardly notice and which merely enables the mobile operators to accommodate a few more years of capacity growth. Mobile revenues will continue to decline or flat-line and operators will continue to limit investment. This opens the way for the Wi-Fi alternatives, on trains, in buildings and so on. That in turn leads to a world where we seek connectivity providers who can deliver bundled services – like Google with Project-Fi in the US.



All the things 5G could be, it will actually end up as just a minor enhancement to 4G, something we hardly notice and which merely enables the mobile operators to accommodate a few more years of capacity growth.

So 5G will bring about a change, but not the move to a utopian gigabit-connected digital society that the industry anticipates. The failure of 5G to shift the current model via new services and new revenue streams will expose weaknesses across the cellular value chain and highlight that the action is now happening elsewhere. For those involved in the industry from operators to manufacturers to regulators, this will be a seismic shift. For those using mobile phones it might just be a change of provider and the benefit of connectivity everywhere. **EB**

#### About the Author



**Professor William Webb** provides technical and strategic consultancy across the wireless communications space. His activities include advising CEOs, Government Ministers, and regulatory bodies. William is also the part-time CEO of the Weightless SIG, the standards body developing a new global M2M technology and was President of the IET – Europe’s largest Professional Engineering body during 14/15. He is also a Visiting Professor at multiple universities and a Fellow of the Royal Academy of Engineering, the IEEE and the IET.

#### References

1. William Webb, 2016, “The 5G Myth”, Amazon.
2. See [http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2017/db0907/DOC-346595A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2017/db0907/DOC-346595A1.pdf)





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conditions.”**

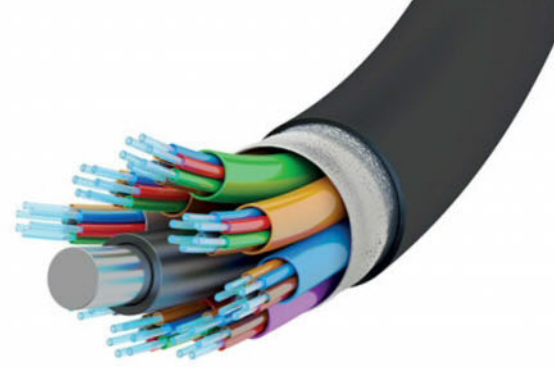
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# HOW WILL 5G INTERNET CHANGE THE WORLD?

BY ANDREW CHAKHOYAN

**When Estonia is contemplating a launch of its own digital currency (Estcoin), Deutsche Telekom is running pilots on a 5G connection, and America ponders the future of Net Neutrality, we witness various manifestations of the same dilemma: how will the increased digital connectivity revolutionise our technologies, reform our societies, and change our lives in the ways we can hardly anticipate?**

**T**he rollout of 5G is expected to enable and widely disseminate technologies, such as: the Internet of Things, self-driving cars, autonomous drones, and Star Wars-inspired hologram phones. What was considered science-fiction just a decade ago is currently being prototyped, tested, and piloted. A \$1 billion investment in a New Mexico “ghost town” speaks for itself. And, as we enter the era of 5G, the formerly futuristic gadgets might just become commonplace.

But what are the broader policy implications of ever-improving connectivity?

What impact does mobile have on society? How can we find a balance between accelerating technological progress and governments’ responsibility to improve the economic conditions and raise the level of wellbeing for their citizens?

Competitiveness offers a useful framework for considering such questions. As the IMF warns about economic slowdown, markets grow more volatile, and pundits become increasingly pessimistic about growth prospects, enlightened policy-makers across the world have made the pursuit of competitiveness, rather than GDP, their principal economic goal. Competitiveness is about the fundamentals and the positioning for a successful future, unlike GDP, which is susceptible to Kondratiev Waves and is often dependent on natural endowments, commodities super-cycles, monetary policies in some of the world’s biggest economies, and other external factors.

What then is the best way to improve competitiveness? As with all the other complex problems, there isn’t a single solution. Different strategies apply to countries



## The World Bank calculates that with “a 10% increase in high speed Internet connections, economic growth increases by 1.3%” and leads to “democratisation of innovation”.

at different stages of development. Nevertheless, one policy area has a nearly universal applicability. This ‘silver bullet’ of economic development is broadband connectivity.

All three pillars of competitiveness as defined by the World Economic Forum, incorporate the connectivity component, be it telecoms infrastructure under the basic sub-index, technological readiness under efficiency enhancers, or the entire pillar of innovation and business sophistication where a high degree of connectivity is a basic precondition.

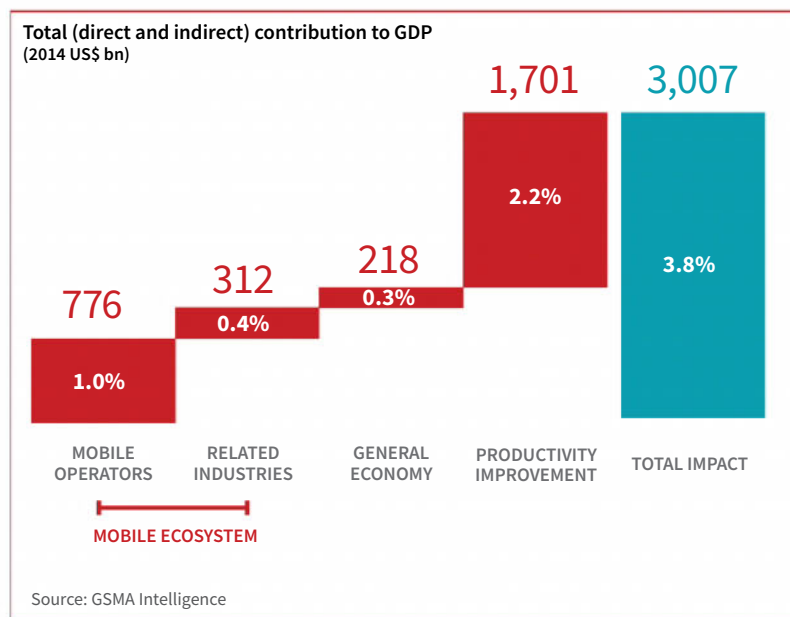
The World Bank calculates that with “a 10% increase in high speed Internet connections, economic growth increases by 1.3%” and leads to “democratisation of innovation.” In a world where only 40% of the population have access to the Internet; we could boost the global GDP by \$1 trillion by connecting another 327 million people. More importantly, this will contribute to sustainable and inclusive growth, supporting economic development in the emerging markets where Internet penetration is lagging. While a consensus is yet to be reached over the scope and scale of the effect we should expect from mobile connectivity on poverty-reduction, some argue that it might be the best hope we have.

GSMA postulates that “Mobile internet access can create a virtuous cycle in developing countries” and has calculated that a better part of a mobile ecosystem’s impact on the global economy comes from productivity gains elsewhere.

When researching the impact of mobile technologies across six countries (U.S., Germany, South Korea, Brazil, China and India), BCG termed this sector a growth engine and looked at the impact it has on SMEs, jobs, as well as benefits to consumers.

Not only does the sector enable efficiency gains across the widest range of economic

activities, and thus enhances competitiveness, BCG found that “the companies focused on mobile’s core technologies invest a larger share of revenue (21%) in R&D than those in any other industry except biotechnology.”



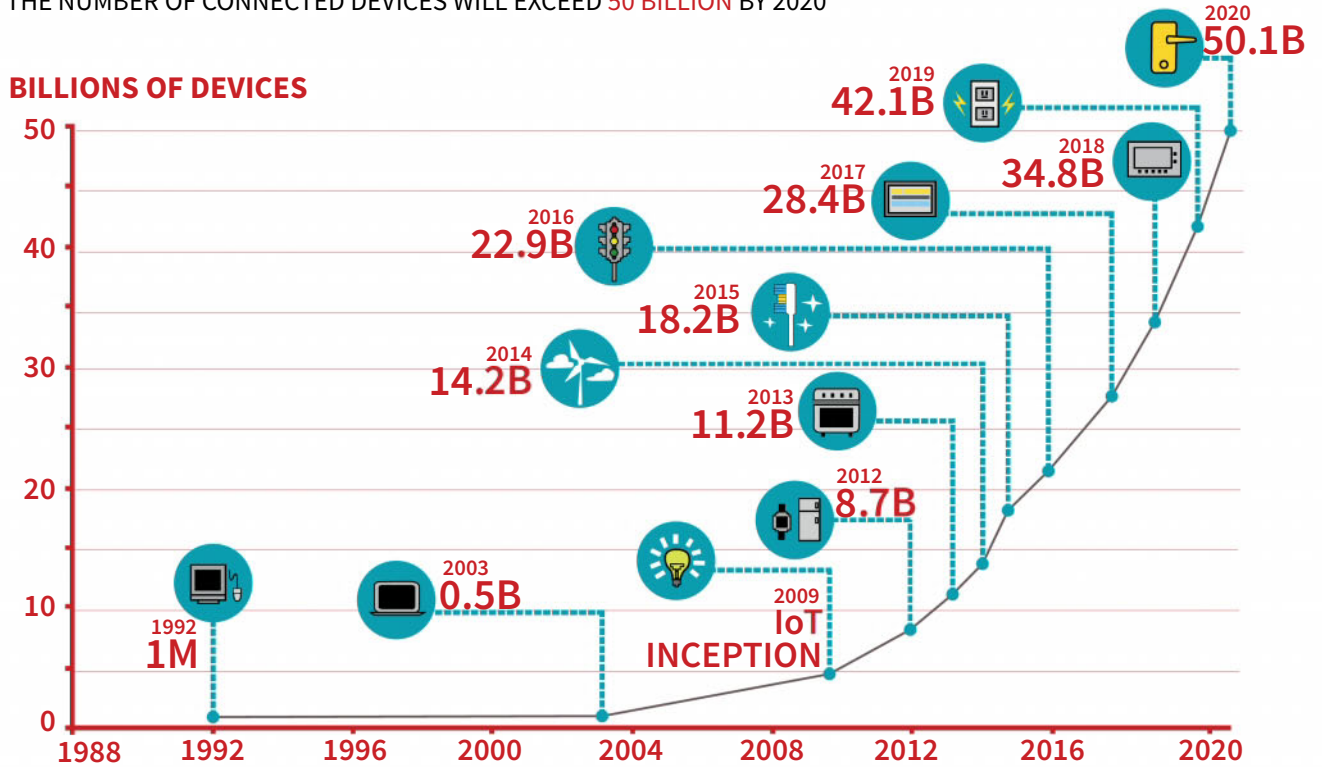
### Exhibit 1. Mobile Technologies Are a Growth Engine

Direct Economic impact		Enabling benefits for SMEs	
~\$3.3 trillion in revenue	Revenues of global value chain in 2014	Up to two to eight times faster growth	Revenues of global value chain in 2014
>\$1.2 trillion in mGDP	Mobile's contribution to GDP in the six countries evaluated	7 million added jobs	Mobile's contribution to GDP in the six countries evaluated
11 million jobs	Jobs in global value chain	<b>Enabling benefits for consumers</b>	
&1.8 trillion in investment	R&D and capex investments from 2009 through 2013	11 to 45 percent of income	Consumer-reported value of mobile technologies as a percentage of income
\$37 billion in funding	Venture/start-up investments in 2014	\$6.4 trillion in surplus	Consumer surplus created in the six countries evaluated

Source: BCG analysis

## Growth In The Internet Of Things

THE NUMBER OF CONNECTED DEVICES WILL EXCEED 50 BILLION BY 2020



Source: CISCO

The small business is a backbone of every advanced economy and even marginal efficiency gains could translate into major impact on a given country's growth prospects. But when it comes to the leading global multinationals, the increased digital connectivity will be a revolutionising force, possibly on par with the invention of the internet. As the world population is pushing towards 8 billion, the number of connected devices today is estimated at around the same number, but Cisco expects it to reach 50 billion by 2020.

As with all exponential technologies, the estimates vary widely. But, according to Strategy and Research Lead for SAP Daniel Wellers, "Experts predict that, by 2022, 1 trillion networked sensors will be embedded in the world around us, with up to 45 trillion in 20 years." It is possible to imagine an existing

"dumb gadget," say a toaster, be turned into "smart" device. A connected toaster will probably check in with some wearable device on one's wrist before turning itself on and popping out that morning bagel just in time for one's breakfast. But we'll be staring at the tip of the iceberg trying to project what we know today into our omni-connected future. Just like the apps, social networks, and robo-invest-advisors have grown up from the Internet, the completely unexpected new technology and applications will emerge from the IoT.

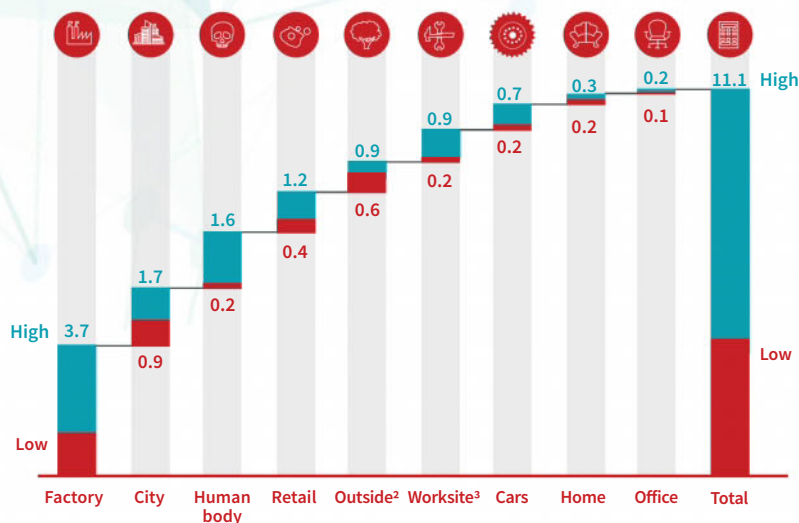
According to McKinsey research the impact of IoT on the world GDP could be as high as adding another powerhouse economy the size of China. (See Exhibit on the next page)

In this day and age, connecting is empowering, and without basic infrastructure financed by telecom operators, today's tech giants from

As the world population is pushing towards **8 billion**, the number of connected devices today is estimated at around the same number, but Cisco expects it to **reach 50 billion by 2020**.

## The Internet of Things has the potential to generate \$4 trillion to \$11 trillion in economic value by 2015

Potential economic impact by segment  
\$ billions (2015 dollars)



<sup>1</sup>For sized applications only. Numbers do not sum to total because of rounding.

<sup>2</sup>Outside settings include outdoor environments, excluding those in urban settings.

<sup>3</sup>Worksites are defined as custom production environments.

McKinsey & Company | Source: McKinsey Global Institute analysis


[www.mckinsey.com/industries/semiconductors/our-insights/new-with-the-internet-of-things](http://www.mckinsey.com/industries/semiconductors/our-insights/new-with-the-internet-of-things)

Apple and Google to Uber and Facebook would not have achieved half the success that they enjoy. As we move into the era of digital inclusion, we should expect innovation to come from the currently unconnected and the new never-thought-of-before services emerging to address the needs at the base of the pyramid in a commercially-viable manner.

The World Economic Forum found “widespread agreement – along with emerging evidence – that access to technology can help improve quality of life and accelerate



development efforts at all levels.” Improvements in mobile broadband will help create conditions where mHealth, m-learning, MFS (mobile financial services), etc. could thrive. The pace of mobile-services adoption will surge further yet, as the notion of digital-identity takes hold. Just a year ago, all eyes were on Estonia as it pioneered e-residency for foreigners, but now the idea of national/universal digital identification is gaining world-wide attention. Given such wide societal implications, the sector, formerly classified as a utility, is now striking on its own – personifying its new identity as an industry of empowerment.

As tech progress continues on its exponential path, the question remains whether the developing countries will be able to leapfrog ahead – or end up left behind. What is certain, however, is that mobile connectivity will be at the forefront of change and will remain a potent force well-placed to drive social inclusion and economic competitiveness. 

*\* This article is an updated version of one that was first published by the World Economic Forum on its website. The author retains all rights to this publication.*

### About the Author



**Andrew Chakhoyan** is a founder and CEO of Strategic Narrative Consulting ([www.snconsulting.nl](http://www.snconsulting.nl)). He advocates for public-private cooperation and is an influencer in the world of international affairs. Andrew is a regular contributor at the World Economic Forum. He may be reached at [@ChakhoyanAndrew](https://twitter.com/ChakhoyanAndrew) or [www.linkedin.com/in/andrewchakhoyan](http://www.linkedin.com/in/andrewchakhoyan)

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# THE CASE FOR 5G: Towards an Internet of Skills and a World of Synchronised Reality

BY MARIA LEMA AND MISCHA DOHLER

**Mobile Systems have become commodity and this article thus examines the timely question of what 5G can deliver in terms of extra value. We argue that, based on fundamental trends, some exciting technology transformations will happen with 5G. These will enable a new Internet, and the Internet of Skills.**

## Trends in Wireless Communications and Digital

Mobile communications has started as a niche technology but quickly evolved into a fully-functioning mobile Internet with global coverage. 4G is now so performant that consumers often forget about being connected wirelessly: the experience is virtually the same as when behind a desktop computer.

With 2G, 3G and 4G generations of mobile now deployed globally, the technology is starting to become commodity

and is naturally experiencing market pressure underpinned by shrinking margins and higher deployment costs. It is hence timely to pose the question on the future of mobile, notably the role and value of 5G.

Technology disruption is tightly coupled to innovation. We thus examine required changes in the technology and innovation landscape to enable such a transformation. This in turn impacts finances, business models and value chains in mobile and digital at large.

These insights are constructed on solid observations of trends in mobile. Indeed, years of developments in wireless communications, deployment and usage allow us to draw the following two fundamental trends:<sup>1</sup>

**First, there is the trend of “KPI Orders of Magnitude between Generations”:** The key performance indicators (KPIs) of cellular have evolved in a rather consistent way from

generation to generation. The most important ones are rate, number of devices and delay/latency; each of these has increased or decreased by 1-2 orders of magnitude. For instance, the rates evolved from 2G to 3G to 4G respectively from kbps to Mbps to Gbps.

5G and the evolutions thereafter are unlikely to follow a different trend. Notably, for 5G this means that rates will be tens of Gbps, the number of devices per base station 300,000 or more, and the latency in the range of 1-10ms. For the first time, these numbers overstep some fundamental thresholds which make 5G very interesting for stakeholders which traditionally were not associated with cellular technologies.

For instance, the extremely high number of devices (and optimised power consumption) allows 5G to enable the emerging Internet of Things (IoT) which requires billions of endpoints to be connected. Given the



global coverage (with mobility and roaming support), 5G is hence consolidating as a serious candidate to enable the IoT.

Another example relates to the very low latencies (along with low outages), which enables critical applications to be serviced. Given the ability to offer service level agreements (SLAs), 5G is hence also consolidating as a serious candidate to enable Industry 4.0 applications.

**Second, there is the trend of “Contributors to Million-fold Capacity Increase”:** Wireless capacity has approximately increased by a factor of one million over the past 35 years.<sup>2</sup> The trend is based on Martin Cooper’s law which says that wireless capacity doubled every 30 months over past 100 years. The breakdown of these gains is 5x for new systems (e.g. 2G -> 3G -> 4G); 5x for various small factors; 25x due to spectrum; and a whopping 1600x due to reduced cell sizes (i.e. going from macro cells to micro cells).

The largest contributor to an increase in capacity is simply due to smaller cell sizes. The impact of all other factors remains surprisingly small: a new system contributed roughly with 0.3% to the capacity when compared to smaller cell sizes; whereas spectrum accounts for 1.5%. It is due to these smaller cell sizes that cellular has become much more heterogeneous with this trend to continue (if not accelerate with 5G and beyond).

### Technical Transformations

**First, we need a transformation from hard KPIs to the perception of KPIs:** Smaller cell sizes and increasing traffic, will make it impossible to offer viable deployments which satisfy data rates, outage, delay, etc. Therefore, we advocate for a fundamental change in design approach where systems are not designed (and regulated) based on the measured KPI but on the perceived KPI.

Let us take the example of the rate.<sup>1</sup> The majority of the capacity in a future 5G system will be provided via high capacity millimetre wave small cells. Providing ubiquitous radio frequency (RF) coverage is technically challenging and economically prohibitive. Instead, one ought to use predictive analytics on user data usage behaviour, user movement behaviour and speed, etc. That would allow one to buffer the to-be-watched Netflix/YouTube video until the next access

The extremely high number of devices (and optimised power consumption) allows 5G to enable the emerging Internet of Things (IoT) which requires billions of end-points to be connected.

point is reached. Several disruptions are needed here, with the most notable being that application layer needs to communicate with lower layers so as to execute the best strategy.

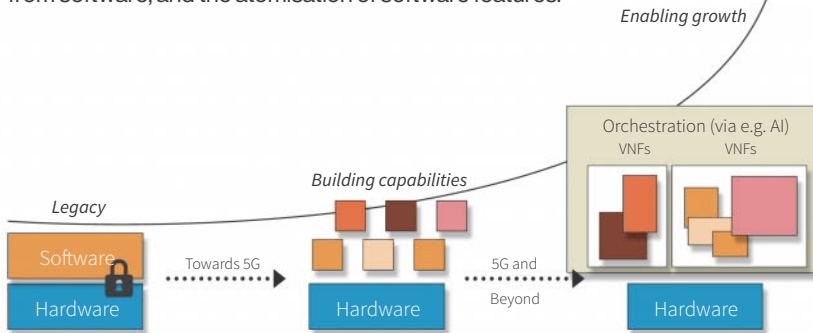
**Second, the community requires a much atomised and decoupled architecture:** The breakdown on the increase of wireless capacity over the past three decades, as discussed above, indicates that smaller cell sizes are the biggest contributor. This in turn translates to more heterogeneous architectures, which have to be managed in a novel way. The standards body 3GPP (which standardises mobile systems) has proposed to decouple control and data planes via phantom-cell approaches but we have found that decoupling the up- and downlinks allows for much higher throughputs and, above all, smaller outages.<sup>3</sup> Continuing this trend, a challenge will be to design a completely decoupled architecture, i.e. decoupled in features and functionalities, and thereby enabling ultra-low latency and ultra-reliable communications.

**A third and important required transformation is on the “thinning” of the Core Network infrastructure:** Scalability in cellular systems is hugely limited by the physical infrastructure of the Core Network (CN). For instance, a typical operator in a country like the UK has only about a handful of gateways for the entire country. The CN is in fact an artefact of pre-Internet times as it was introduced in 2G because none of the operators believed that there will ever be a general Internet which is able to carry the voice traffic. 30 years on, we still use the CN and thereby greatly limit the scalability of the wireless edge, which – because of above discussions – limits the rates to be delivered. To be able to scale, we thus need a much smarter way of cross-utilising available fibre infrastructures so as to maximise the ability to transmit the mobile traffic. That would also help with reducing the end-to-end delays.

**A fourth and interesting transformation is to use 5G-as-a-Control-System:** The inspiration to this is because Wifi link capacity has always been 1-2 orders of magnitude higher than cellular link capacity, at any point in time. At the same time, it is well established that the ratio between control-to-data packet size is about 1-2 orders of magnitude in typical communications systems.

Based on this observation, we suggest exploring if combining the best of both worlds allows one to achieve prior unseen performance gains. Notably, one needs to research the architectural and protocol approach to have 5G act as a control channel/system for all wireless systems available globally. Going well beyond today’s license assisted access (LAA), cellular would be responsible to coordinate various Wifi and other systems to ensure best possible link performance whilst offering mobility/roaming as well as billing.

Figure 1: Illustrating the advanced features of 5G, i.e. decoupling of hardware from software; and the atomisation of software features.



### What is 5G?

5G departs from the design principles of prior generations. It is about time as few would argue that mobile experience is universally satisfactory. Whilst designing a system which works under complex mobility scenarios and is available globally is not an easy, the quality of experience with the (fibred) Internet has always been much better. And the reason may well be because we do not have Cisco, Microsoft and Facebook sit together for a decade to come up with a new Internet. Each is innovating independently as technologies are decoupled and only communicate via well-established interfaces.

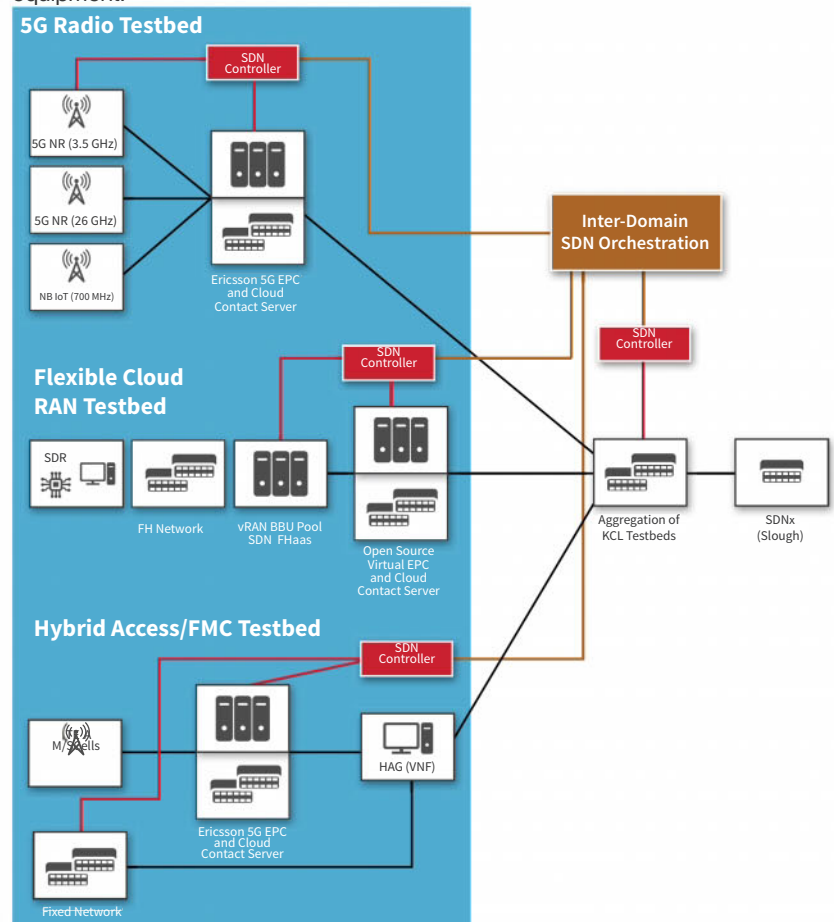
Legacy telecoms systems were highly optimised but closed end-to-end system with limited scale. 5G will be fundamentally different, borrowing concepts from the Internet, i.e. there is a strong decoupling of hardware and software, and atomisation of software. That enables a transformation of the value chain in 5G and beyond, enabling advanced concepts like “telco-as-a-service”. In more details, which is also illustrated in Figure 1, 5G will be underpinned by two major transformations:

**First, a decoupling of hardware from software, i.e. “softwarisation of the infrastructure”:** By decoupling the hardware from software, each can innovate and scale on their own. This will allow one to use state of the art off-the-shelf hardware and provide all innovation in software which is much easier to scale and adapt. It also means that nations with strong software capabilities, such as the UK,

can become global leader in 5G telecommunications systems.

**Second, an atomisation of software and functionalities takes place:** In legacy systems, the software code was often comprised of millions of lines of codes which were hard-coded into the hardware. This is about to change. 5G, as currently standardised by 3GPP, insists on a decoupling of functionalities. This means that they can be developed and implemented independently. It also allows the operators to package features at need, and virtualise them and thus place them where truly needed. For instance, if there is a novel way of doing authentication using distributed ledger technologies, one only needs to bind this in as a new code.

Figure 2: King’s advanced 5G capabilities, which are partially based on Ericsson equipment.





## The powerful capabilities of 5G will enable other exciting applications, such as the **emerging concept of Synchronised Reality, which is perceived to be an important step beyond Virtual/Augmented Reality.**

At King's College London, we are involved in an exciting £16m project to develop the world's first end-to-end 5G system operating over heterogeneous infrastructures. It includes very advanced software defined networking solutions which allow for dynamic interconnection of physical/virtual experimental resources across different sites. Users will be granted access to virtual slices of physical resources, thereby enabling multi-tenancy future 5G and internet experimentation on a massive scale.

King's 5G capabilities are illustrated in Figure 2. They include 5G radio technology in the three pioneering spectrum bands (and based on Ericsson's world-class 5G equipment, market's best so far). It also includes an advanced and flexible functional-split cloud-RAN testbed; and a fixed/mobile convergence testbed. All that is managed using King's in-house controller and orchestration framework, which is based on standardised approaches and is underpinned by advanced artificial intelligence (AI).

### Towards a New Internet and Exciting Applications


Underpinned by above ultra-low latency and ultra-high bandwidth 5G system, current embodiments of the Internet will be dwarfed by the emergence of industrial local area networks ("Industry 4.0") and – believed to be a true paradigm shift – by the Internet of Skills ("Human 4.0")<sup>4</sup>.

By enabling the delivery of physical experiences remotely, the Internet of Skills will revolutionise operations and servicing capabilities for industries and it will revolutionise the way we teach, learn, and interact with our surroundings for consumers. The 5G-enabled Internet of Skills will thus be an enabler for remote skillset delivery and thereby democratise labour the same way as the Internet has democratised knowledge.

The potential global impact of this creation would be phenomenal and instrumental in conquering some of the world's biggest challenges. The Internet of Skills – having reached widespread adoption or being deployed at needs – will enable important disaster operation applications such as remote monitoring/surgery of people in need (e.g. applicable in Ebola hit areas); it will enable remote education (e.g. a child in Gaza is taught painting); it will enable industrial remote decommissioning and servicing capabilities (e.g. the remote reparation of a broken car in Africa); among other important applications.

The powerful capabilities of 5G will enable other exciting applications, such as the emerging concept of Synchronised Reality,<sup>5</sup> which is perceived to be an important step beyond Virtual/Augmented Reality. Here, the ultra-low latency yields the perception of immediacy and thus allows for much more immersive experiences.

First industry applications of 5G are also emerging where King's College London, together with Ericsson, has pioneered some of the most exciting application use cases.<sup>6</sup> These are in 5G-enabled health, performing arts, gaming, transport and many others.

5G will transform the telco business and technology ecosystem. It will be an enabler for Real-Time Immersion, Synchronised Reality and the Internet of Skills. 

### About the Authors



**Dr. Maria A. Lema** is leading the 5G UK Testbeds and Trials project at King's College London, coordinating all technical activities for the deployment of the 5G testbed in London. Most of her research in this area has been focused on designing end to end ultra-reliable low latency 5G networks in the context of the Internet of Skills.



**Mischa Dohler** is full Professor in Wireless Communications at King's College London, driving cross-disciplinary research and innovation in technology, sciences and arts. He is the Director of the Centre for Telecommunications Research, Co-Founder of the pioneering smart city company WorldSensing, Fellow of the IEEE, the Royal Academy of Engineering and the Royal Society of Arts (RSA), and a Distinguished Member of Harvard Square Leaders Excellence.

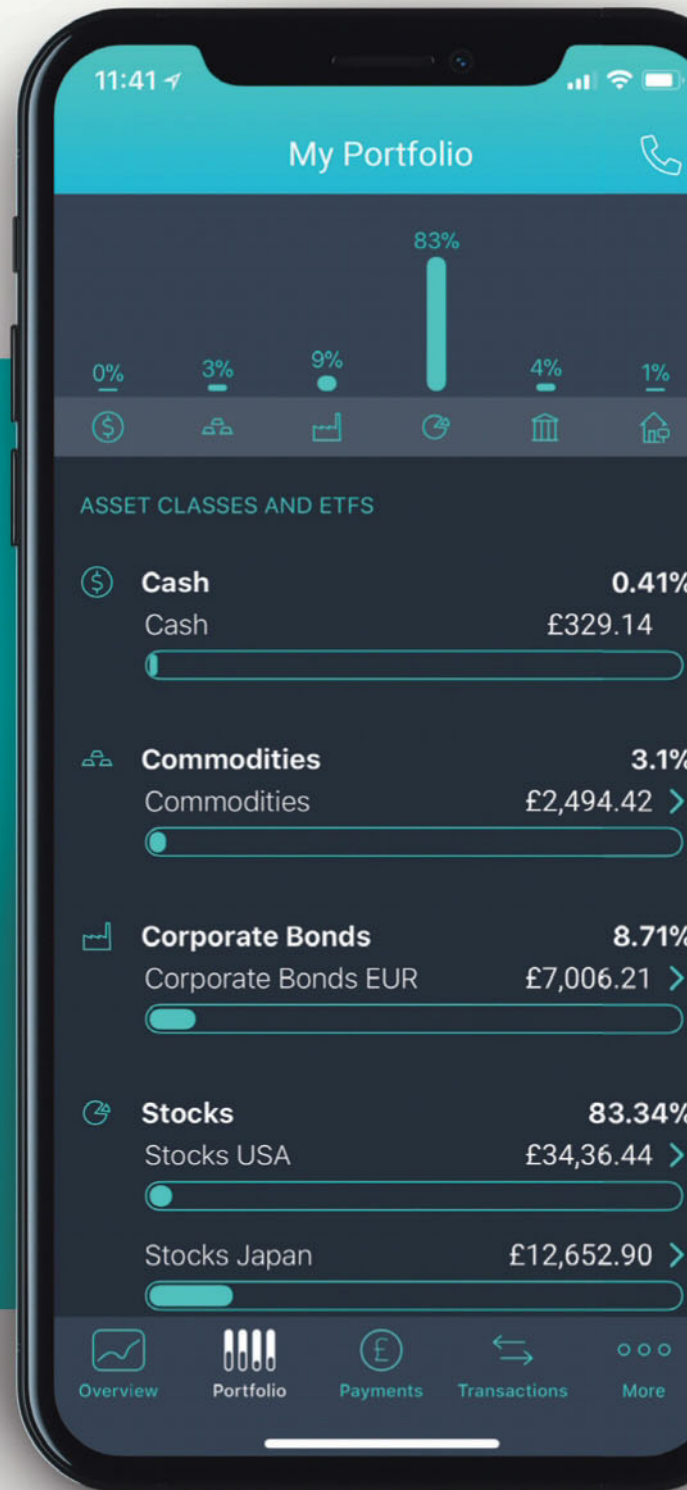
### References

1. M. Dohler, T. Mahmoodi, M.A. Lema, M. Condoluci, F. Sardis, K. Antonakoglou, A.H. Aghvami, "Internet of Skills, where Robotics meets AI, 5G and the Tactile Internet", EuCNC 2017, Oulu, Finland.
2. M Dohler, R.W. Heath Jr., A. Lozano, C. Papadias, R.A. Valenzuela, "Is the PHY Layer Dead?", IEEE Communications Magazine, vol 49, issue 4, April 2011, pp 159-165.
3. M.A. Lema, E. Pardo, O. Galinina, S. Andreev, Mischa Dohler, "Flexible Dual-Connectivity Spectrum Aggregation for Decoupled Uplink and Downlink Access in 5G Heterogeneous Systems", IEEE JSAC, in press.
4. M. Dohler, et al, "Internet of Skills, Where Robotics Meets AI, 5G and the Tactile Internet", EuCNC 2017, Oulu, Finland.
5. The term "Synchronised Reality" was coined in a conversation between Samantha Hemingway (Hemingway Media) and Mischa Dohler whilst discussing the ultra-low latency 5G capabilities.
6. For a full exploration of all these 5G use cases, please, visit <https://www.ericsson.com/en/networked-society/innovation/reliable-communications/kings-college>.

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# Machine intelligence will shake up banking, BUT THE DISRUPTORS WON'T BE FINTECH STARTUPS

BY URS ROHNER AND HOWARD YU

**Artificial intelligence and machine learning are being woven into the fabric of every aspect of our lives. The financial sector, historically faced with inefficiencies, is already undergoing transformative change. But unlike Facebook or Amazon, financial providers can't simply "move fast and break things". A new playbook for fintech is soon to emerge.**

In cash-abundant Silicon Valley, there is a myth that any college dropout with a hoodie and a half-baked idea can raise venture funding. They are young and limitless. They aren't biased by industry norms and so can freely reinvent the world as we know it. They are Steve Jobs. They are Mark Zuckerberg. They are Bill Gates. If we live in a world of accelerated change, they move at an accelerated pace. These seemingly small-scale innovators can sometimes be devastatingly dangerous: Netflix

destroyed Blockbuster, BuzzFeed decimated Time, Uber threatened GM, and Amazon trampled BestBuy.



According to a recent study published by PwC, more than **80% of financial institutions believe their business to be at risk of disruption.**

Understandably, the financial sector has fallen victim to the fear of immediate disruption. According to a recent study

published by PwC, more than 80% of financial institutions believe their business to be at risk of disruption.<sup>1</sup> Existing sources of revenue and profit can no longer be taken for granted. Accordingly, 56% of the respondents said they had put disruption at the heart of their strategy. And yet, a close-up examination of the life of a typical fintech startup paints a very different picture.

In July 2017, BNP Paribas finalised its acquisition of Financière des Paiements Électroniques (FPE), a fast-growing fintech startup that focusses on simple, online retail banking services. Since its launch three years ago, FPE has opened more than 630,000 accounts. All its success notwithstanding, the startup is anything but disrupting big banks – it has been acquired and now is safely ensconced inside BNP.

This is hardly atypical. At Credit Suisse, we sought to understand exit strategies in fintech. We discovered



All this is consistent with a broader trend: **more companies have disappeared because of mergers and acquisitions than any other reason.**

that the most common ones for startups were acquisitions or quick imitations by incumbent banks. PayPal, once a disruptor itself and now an incumbent, is investing substantially in buying up potential rivals, particularly those in the global payments and merchant transfer space. When not being acquired, fintechs are expanding their reach into unrelated sectors that only seem tangentially financial. Square, a payments provider, is now offering meal delivery with Fastbite in an attempt to compete against Uber Eats. Ultimately, we expect most startups to end up turning into conventional financial institutes, like Zopa, the first peer-to-peer lender with the initial ambition to disrupt the established finance sector but that ended up paying for a banking license to provide traditional banking services.

All this is consistent with a broader trend: more companies have disappeared because of mergers and acquisitions than any other reason. Between 1978 and 2012, the number of companies less than a year old as a share of all businesses declined by 44%.<sup>2</sup> And in the financial sector, as we shall see below, individual

startups face additional hurdles beyond what others faced in the e-commerce Internet world.

### Disruption Revisited

The theory of disruptive innovation, introduced by Harvard Professor Clayton Christensen in 1995, has proved itself a powerful way of thinking about innovation-driven growth. The core principles of the theory are that successful disruptive technologies 1) target unserved or underserved segments; 2) initially perform relatively less well against existing customer needs; and 3) underprice the existing offerings. As a precondition for disruption, incumbent players initially don't respond to the newcomers' efforts due to the low margins, whereas from the existing customers' perspective, the lower price of the new offering does not compensate for its inferior performance. In this environment, disruptive innovators can develop their ideas and test their business model without major interference from established players and their demanding clientele.

However, among the largest and most promising fintechs that Credit Suisse has investigated, there is little evidence that newcomers are targeting underserved customer segments. Instead, all startups in our sample have rolled out their initial offering to already-served banking clients, often targeting the incumbents' core customer base.

This should not be too surprising. Technology-driven innovation requires a significant level of IT expertise, which is why most of the world's leading fintech startups are launched in close proximity to talent pools with advanced technological know-how. Fintechs develop and offer services tailored predominantly to their own geographical region, which is usually an economically mature, well-banked space. (The only exception would be China.) So, when it comes to segmentation, fintechs don't have much choice but to enter an already-served space and fight for the customers of incumbent players. And the incumbents react fast. Before long, the startups are either acquired or face direct competition from the incumbent banks.

Is that enough for established banks to stop being worried?





### Three Waves of Machines

Of all the breakthrough technologies applicable to finance, the explosion of machine learning and artificial intelligence seems the most promising. One of the most radical improvements in recent years has been how machines learn. For data scientists and machine-learning experts, March 2016 was a momentous month. AlphaGo, a computer program developed by Google, beat world champion Lee Sedol at the ancient Chinese board game of Go by a score of 4 to 1.<sup>3</sup> Before AlphaGo played the board game Go against humans, Google researchers had been developing it to play video games: *Space Invaders*, *Breakout*, *Pong*, and others.<sup>4</sup> Without the need for any specific programming, the general-purpose algorithm was able to master each game by trial and error, pressing different buttons randomly at first and then adjusting to maximise rewards.

Game after game, the software proved to be cunningly versatile in figuring out an appropriate strategy and then applying it without making any mistakes. That's why AlphaGo represents not just a machine that can think – like IBM Watson – but also one that learns and strategises, all without direct supervision from humans.

This general-purpose programming was made possible thanks to a deep neural network: a network of hardware and software that mimics the web of neurons in the human brain.<sup>5</sup> Reinforcement learning occurs in humans when positive feedback triggers the production of the neurotransmitter dopamine as a reward signal for the brain, resulting in feelings of gratification and pleasure. Computers can be programmed to work similarly, and the positive rewards come in the form of scores when the algorithm achieves a desired outcome. Under this general framework, AlphaGo writes its own instructions randomly through many instances of trial and error, replacing lower-scoring strategies with higher-scoring ones. That's how an algorithm teaches itself to play anything, not just Go.

It is easy to imagine a world where self-taught algorithms play a much bigger role in coordinating economic transactions; AlphaGo simply shows us what may be possible in the near future. With instantaneous adjustment, automatic optimisation, and continuous improvement all quietly managed by unsupervised algorithms, the redundancy of

production facilities and wastage in the supply chain should become headaches of the past. Freed from the pressure to vertically integrate and with far fewer resources needed for organisational coordination, smaller players will be able to specialise in best-in-class services and deliver extremely customised solutions in real time when specific demands arise.

## OF ALL THE BREAKTHROUGH TECHNOLOGIES APPLICABLE TO FINANCE, THE EXPLOSION OF MACHINE LEARNING AND ARTIFICIAL INTELLIGENCE SEEMS THE MOST PROMISING.

At Credit Suisse, we can observe first-hand how intelligent computing has improved operational efficiency. One of the most complex areas where innovative technologies play a key role in improving operational efficiency and reducing risks is compliance. In the second half of 2016, Credit Suisse's compliance department launched an initiative crucial from both business and regulatory perspectives. The project aimed to enable a holistic view of all its client relationships – “Single Client View” – and consisted of designing and implementing a technology-based solution capable of consolidating client-related data from all regions into a single platform. The two key challenges were making data from different systems compatible and accessing it in real-time from any location to effectively detect and mitigate potential risks. The project was launched in December 2016, with the initial scope of client data covering natural persons in our retail and international wealth management businesses booked out of Switzerland. Next, the team focussed on continuously adding additional client data, improving the data quality, enhancing functionality, and rolling out the technology globally to more users. We are now able to review and assess client information significantly faster than before, adopting a multijurisdictional view and simplifying the projection of complex client relationships.



Importantly, the system assigns each client a global risk score to assist in internal decision-making and to allow us to use advanced analytics.

Another example is compliance with regard to politically exposed persons, where we were able to speed up internal assessments by 60% while reducing related costs by as much as 40%. Machine learning accelerates and streamlines investigation reviews by over 80% – while covering 20% of the information. Furthermore, when it comes to employee surveillance, we now have the capability to screen a substantial number of activities and check them against an extensive list of potential risks.


Still, this development of artificial intelligence (AI) is akin to the early phases of electricity, when it first arrived and replaced steam power in manufacturing. At the turn of the century, most textile factories were still powered by flowing water and waterwheels. Factories that installed steam engines had to accommodate pulleys, belts, rotating shafts, and complex gear systems. In fact, the configuration of such a factory was built around a rigidly imposed, centralised steam engine, sacrificing all possible workflow efficiency. Interestingly, when manufacturers began to adopt electricity, engineers couldn't even fathom an alternative layout like the modern-day assembly line. Rather, they grouped the electric motors into a big cluster, forgoing the benefits of decentralised power in optimising the workflow. It took almost another two decades before the manufacturers truly reaped the full benefits of electricity.<sup>6</sup>

Today, most incumbent banks tend to frame AI as a cost-cutting measure, substituting human labor in administrative processes. Though this is important, its biggest potential is likely to be so profound that it will transform financial institutions as we know them. The true disruptors won't be startups; rather, they will be deep-pocketed technology behemoths, spreading their tentacles into the world of finance as cross-boundary disruptors.

### Cross-Boundary Disruption

“Your margin is my opportunity”, Amazon's CEO Jeff Bezos reportedly once said. The biggest threats to big banks are not fintech startups but rather Amazon or Google, who shift the industry value chain. These and other cross-boundary disruptors, including Alibaba in China, have been leveraging the existing data they have harvested through e-commerce and then specialising in new services targeting customers outside of big banks. Unlike a startup, which is forced to enter an existing space to gather customer information, these tech giants have already acquired huge volumes of data based on commercial activities outside of finance.

**The true disruptors won't be startups; rather, they will be deep-pocketed technology behemoths, spreading their tentacles into the world of finance as cross-boundary disruptors.**

Consequently, they naturally turn to new segments outside of traditional financial institutions. This doesn't mean that big banks will disappear. But if they aren't prepared, they could be reduced to utility companies: ubiquitous, reliable, but certainly not key, with margins so low that they are hardly attractive to anyone, including investors. This is why all big banks must push AI to the next level, while time is still on their side. 

### About the Authors



**Urs Rohner** has been the Chairman of the Board of Directors of Credit Suisse Group AG since 2011 and was its Vice Chairman from 2009 until 2011. In 2004, he was appointed a member of the Executive Board of the Group and served as General Counsel and as COO. Mr. Rohner graduated with a law degree from the University of Zurich. He is admitted to the bars of the Canton of Zurich and the State of New York.



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### References

1. PricewaterhouseCoopers. “Redrawing the lines: FinTechs growing influence on Financial Services”. PwC. Accessed November 30, 2017. <https://www.pwc.com/fintechreport>.
2. Buchanan, Leigh. “American Entrepreneurship Is Actually Vanishing, Here's Why.” Inc.com. Accessed November 30, 2017. <https://www.inc.com/magazine/201505/leigh-buchanan/the-vanishing-startups-in-decline.html>.
3. “What AlphaGo Means to the Future of Management”, *MIT Sloan Management Review*, <http://sloanreview.mit.edu/article/tech-savvy-what-alphago-means-to-the-future-of-management/> (accessed May 28, 2017).
4. Christof Koch, “How the Computer Beat the Go Master”, *Scientific American*, March 18, 2016, <http://www.scientificamerican.com/article/how-the-computer-beat-the-go-master/>.
5. Cade Metz, “In Two Moves, AlphaGo and Lee Sedol Redefined the Future”, *Wired*, March 16, 2016, <https://www.wired.com/2016/03/two-moves-alphago-lee-sedol-redefined-future/>.
6. Andrew McAfee and Erik Brynjolfsson, *Machine, platform, crowd: harnessing our digital future* (New York: W.W. Norton & Company, 2017), 18-20.

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# Is your supply chain sustainable?



## PROBABLY NOT

BY CORY SEARCY

**A growing number of companies are working to develop sustainable supply chains. A key challenge is to align their supply chain performance with the economic, environmental, and social thresholds that dictate whether it is sustainable or not. This article discusses what supply chain sustainability really means, why it is difficult to achieve, and what companies can do to advance their progress.**

**N**early every day, more companies publicly share their sustainability commitments and progress. As just one example, nearly 10,000 companies around the world are now signatories to the United Nations Global Compact. These companies have explicitly recognised their responsibilities in the areas of human rights, labour, environment, and anti-corruption.<sup>1</sup>

Many companies now acknowledge that their responsibilities extend into their supply chains. In fact, supply chains often contain a company's

most significant impacts. In 2010, PUMA found that 94% of its total environmental impact was generated within its supply chain.<sup>2</sup> This past year alone, Walmart, Mars, and Hewlett Packard Enterprise (HPE) were just a few of the companies to announce dramatic expansions of their sustainable supply chain initiatives.

The growing investments in sustainable supply chains are encouraging. However, extending sustainability into supply chains comes with many challenges. Companies must set priorities, accommodate differing local conditions, and align the efforts of a multitude of partners. But first, they must figure out what sustainability means for their supply chain. Only then can they determine if they are doing enough of what truly matters.

### What is a sustainable supply chain?

There are many definitions of supply chains, but they typically emphasise the need to coordinate flows of material, services, and information between organisations in order to deliver value

Companies must figure out what sustainability means for their supply chain. Only then can they determine if they are doing enough of what truly matters.

to customers. Definitions of sustainable supply chains usually add the requirement to address the “triple bottom line” of economic, environmental, and social performance.<sup>3</sup> Definitions based on the triple bottom line, however, are insufficient because they do not plainly distinguish sustainable supply chains from unsustainable ones.

To do this, explicit references to the “limits and demands placed on economic, environmental, or social resources, at the sectoral, local, regional, or global level”<sup>4</sup> are required. The limits and demands on resources are the basis for identifying sustainability thresholds. Thresholds can represent upper limits, such as for atmospheric greenhouse gases (GHGs), or lower limits, such as for living wages.<sup>5</sup>

Staying within thresholds is fundamentally what sustainability is about. A sustainable supply chain operates “within the thresholds imposed by nature and society”.<sup>6</sup> To remain viable, a supply chain must also operate within economic thresholds imposed by the company’s stakeholders. This definition is based on the embedded view, which recognises that all supply chain activities take place in the context of broader society, which is itself nested within the natural environment.<sup>7</sup>

Figure 1 depicts the embedded view of sustainable supply chains. In the middle of the figure is a generic supply chain. The key players

Recognising responsibilities, making investments, and improving performance must be encouraged. But supply chain sustainability is not about best efforts; it is about staying within thresholds.

include suppliers, manufacturers, distributors, retailers, and consumers. Product end-of-life considerations, such as reuse, recycling, and disposal, are also considered. To reflect the potential complexity of the relationships in the chain, the focus is on networks, rather than dyadic relationships. Moreover, the double-headed arrows indicate that sustainable supply chains must consider forward and reverse flows between players.

The focal company can be located anywhere along the supply chain. This company is responsible for determining the key sustainability thresholds for its supply chain. Economic thresholds could, for example, focus on profitability or competitive practices. Environmental thresholds could focus on water consumption or GHG emissions. Social thresholds could focus on workplace safety or living wages.<sup>5</sup> Different supply chains could have different relevant thresholds.

To be clear, a supply chain is only sustainable if it operates within all of its defined thresholds. Recognising responsibilities, making investments, and improving performance over time are all commendable and these types of proactive

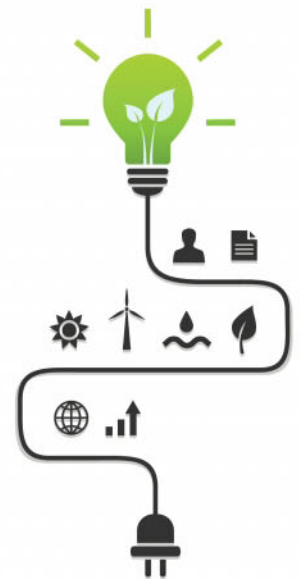


Figure 1: The Embedded View of Sustainable Supply Chains

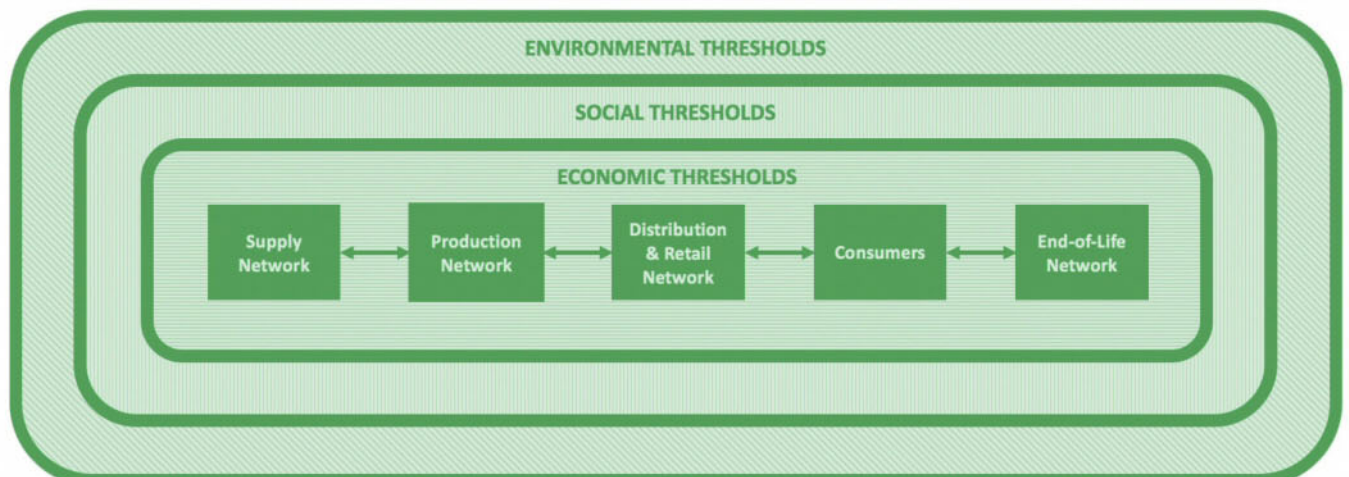


Table 1: Challenges in Measuring Sustainability in Supply Chains

Challenge	Description	Starting Points
Linking to the bigger picture.	Developing linkages to the economic, environmental, and social context in which supply chains operate is the distinguishing characteristic of sustainability.	<ul style="list-style-type: none"> <li>• Identify relevant thresholds.</li> <li>• Set science-based goals and targets.</li> <li>• Use credible reference points, such as the Planetary Boundaries.</li> </ul>
Setting priorities.	Setting priorities is difficult given the many players and stakeholders in a supply chain, but the company must stay focussed.	<ul style="list-style-type: none"> <li>• Consider positive and negative impacts.</li> <li>• Consider existing and potential impacts.</li> <li>• Focus on a few key priorities.</li> </ul>
Accommodating differing conditions.	The difficulty in setting priorities is amplified due to the different economic, environmental, and social conditions across supply chains.	<ul style="list-style-type: none"> <li>• Consider impacts at different scales.</li> <li>• Consider resource stocks and flows, as well as political settings.</li> <li>• Use multi-stakeholder initiatives, such as the SBTi, as references.</li> </ul>
Setting boundaries.	Measurement boundaries must be clear. This is influenced by relevance, product traceability, and local capacity of key players.	<ul style="list-style-type: none"> <li>• Consider how many tiers to include.</li> <li>• Include all major impacts.</li> <li>• Set boundaries using credible mechanisms, such as the GHG Protocol.</li> </ul>
Building local capacity.	Sustainable supply chains cannot be addressed by any one firm alone. Key players must be capable of taking action.	<ul style="list-style-type: none"> <li>• Collaborate with the competition.</li> <li>• Clarify responsibilities.</li> <li>• Use collaborative technologies to align efforts across the supply chain</li> </ul>

efforts must be encouraged. But, supply chain sustainability is not about best efforts; it is about staying within thresholds. This is not easy.

### Challenges in Building Sustainable Supply Chains

There are many challenges in building sustainable supply chains. The emphasis here is on measuring sustainability performance. Of course, there are many actions companies must take beyond measurement, such as re-designing their products or implementing supplier codes of conduct. Performance measurement is the foundation, however, for identifying priorities and determining whether or not the supply chain is operating within economic, environmental, and social thresholds.

Table 1 summarises five representative challenges in measuring supply chain sustainability, as well as how companies can get started in addressing them. These challenges must be overcome to develop credible sustainability metrics.

**Linking to the bigger picture.** The first key challenge is determining how the supply chain influences, and is influenced by, the wider world. This requires identifying the relevant economic, environmental, and social thresholds and then finding a way to translate them to the supply chain level.

Examples of potential thresholds abound. The Planetary Boundaries<sup>8</sup> framework identifies nine key thresholds based on environmental science, including climate change and global freshwater use. The Doughnut<sup>9</sup> framework builds on The Planetary Boundaries and adds 12 thresholds based on

social science and ethics, such as for health and social equity. The 17 goals and 169 targets provided by the United Nations Sustainable Development Goals (SDGs)<sup>10</sup> serve as another potential reference point.

Few thresholds, however, have been specifically developed for the supply chain level. Science- and ethics-based goals, grounded in “scientific knowledge” and “norms of fairness, justice, integrity, and respect”,<sup>11</sup> respectively, can help bridge this gap. Setting these goals can be difficult given evolving scientific understanding and social norms, but the key is that they are non-arbitrary, linked to meaningful thresholds, and are updated as needed.

**Setting priorities.** No supply chain can address all conceivable economic, environmental, and social thresholds. The company must ensure that it considers its key impacts, while staying focussed on what matters most. This must be considered in light of the players and other stakeholders in the supply chain.

The CDP, formerly the Carbon Disclosure Project, runs a supply chain programme focussed on the three key issues of climate change, water, and forest-risk management.<sup>12</sup> Addressing any one of these issues in a complex supply chain is difficult given the need to collect timely, reliable, and valid data. This is further complicated by the need to develop credible science-based targets, as the CDP is doing for climate change,<sup>13</sup> as well as the need to consider existing and potential, positive and negative, and short- and long-term impacts. Given these challenges, companies must stay focussed on essential priorities.

### Accommodating differing conditions.

Supply chains often cross multiple political and regulatory boundaries. The economic, environmental, and social conditions across the chain can also vary widely. For example, impacts from climate change have global implications. Water usage, on the other hand, is mainly a regional issue. A level of water use may be acceptable in one part of the chain, but not another.

There are a number of multi-stakeholder initiatives that provide guidance on how to address thresholds at different scales. For example, the rapidly growing Science Based Targets Initiative (SBTi) provides guidance and support to companies on setting GHG targets in line with climate science.<sup>14</sup> The SBTi requires signatories to consider their value chain emissions. The CEO Water Mandate is developing context-based water targets,<sup>15</sup> taking into account hydro-ecological conditions at the water basin level. Other examples will likely emerge.

**Setting boundaries.** The boundaries for measurement must be clear, but this can be difficult in large supply chains. No key players should be excluded to ensure all key impacts are captured. A fundamental decision is determining how many tiers of suppliers to consider, particularly given that risks often exist deep in the chain.<sup>16</sup> Product traceability will be a factor in determining the number of tiers to consider.

Guidelines on setting boundaries are available for some issues, such as measuring GHG emissions. The GHG Protocol, for example, provides guidelines to quantify GHG emissions. Its main reporting standard contains a supplement on determining emissions throughout a company's value chain.<sup>17</sup> Other support is available, including an online calculator for value chain emissions. In any case, companies must be clear on the boundaries used to determine and develop their impacts and metrics.



To develop metrics, all key players must have a common understanding of terminology, definitions, and responsibilities, as well as possess credible data collection and analysis systems.

**Building local capacity.** Sustainable supply chains depend on the collaboration of many players. To develop metrics, for example, all key players must have a common understanding of terminology, definitions, and responsibilities, as well as possess credible data collection and analysis systems. Reporting systems must also be compatible, which requires strong relationships and collaborative technological platforms.

For many issues, building local capacity may be beyond the power of any one company alone. Companies should consider collaborating with others, including their competition, on issues that are not competitive differentiators. For example, a number of industry-led initiatives have focussed on improving working conditions deep in the supply chain. The Electronic Industry Citizenship Coalition's Code of Conduct<sup>18</sup> is a prime example.

### Best Practice Examples

Many companies have begun the long process of addressing these challenges. While none have perfectly addressed all of their supply chain sustainability challenges, many have taken commendable action. Consider three recent examples, each with a major focus on GHG emissions.

In September 2017, Mars announced a \$1 billion USD investment in its Sustainable in a Generation Plan, which includes a focus on both the company's direct operations and its value chain.<sup>19</sup> One key commitment is to reduce the company's GHG emissions in line with climate science. Mars has worked with the World Resources Institute to develop science-based targets and metrics for GHGs, as well as for land and water.<sup>20</sup> Mars has committed to reducing GHG emissions across its value chain by 27% by 2025 and 67% by 2050.<sup>19</sup>

Earlier in 2017, in May, HPE announced that it would establish science-based goals to reduce GHG emissions in its supply chain.<sup>21</sup> The goal is to reduce HPE's supply chain emissions from manufacturing by 15% by 2025. Notably, HPE also committed to provide its suppliers with support to help build their local capabilities. The company expects that 80% of its manufacturing suppliers will set their own science-based targets by 2025.

## The Carbon Disclosure Project recently found that only **22%** of the companies reporting to its supply chain programme are actively working with their suppliers to reduce carbon emissions.

Walmart has long focused on the sustainability of its supply chain. In April 2017, it announced Project Gigaton, which aims to reduce the company's supply chain GHG emissions by 1 gigaton by 2030.<sup>22</sup> Along with Mars and HPE, Walmart is a member of the SBTi and has committed to setting its GHG emissions targets in line with climate science. Walmart has also established a number of other sustainability goals, such as reducing its waste to zero throughout its supply chain by 2025.

All three of these companies, and many others, have begun taking action based on what scientific evidence indicates is required. Importantly, however, companies do not have to address sustainability in their supply chains alone. Multi-stakeholder initiatives, such as the SBTi and the CEO Water Mandate, show how they can work with other companies, civil society, and other stakeholders to develop credible approaches to challenging scientific and ethical problems.

Despite the many ongoing efforts, however, there is much more to do. The CDP recently found that only 22% of the companies reporting to its supply chain programme are actively working with their suppliers to reduce carbon emissions.<sup>12</sup> A study of 40,000 corporate responsibility reports found that just 5% referred to ecological limits.<sup>23</sup> Another study of over 2,500 metrics used to measure performance in supply chains


found that none adequately addressed the broader sustainability context.<sup>24</sup>

Institutionalising sustainability in supply chains requires engaging many more companies. Whether the focus is on GHG emissions or other economic, environmental, and social issues, companies must link their efforts to what nature and society can support.

### Conclusion

Sustainability requires that supply chains operate within economic, environmental, and social thresholds. However, supply chain sustainability is not directly observable. There is room for reasonable debate on what impacts should receive priority, how performance should be linked to thresholds, and, ultimately, what should be done. But, difficult as these questions are, none are reasons to delay action.

No sustainable supply chain initiative is likely to be perfect, much less on the first try. The focus will also inevitably change over time. Thresholds, for example, will need to be updated as science, societal expectations, and the supply chain itself evolve. Metrics and action plans are also finite.

Companies will need to stay current on the latest research, look to others for inspiration, and collaborate widely to solve difficult problems. Most importantly, though, they need to get started with linking their supply chains to the wider world. 

### About the Author



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### References

1. United Nations Global Compact (2017). Online: <https://www.unglobalcompact.org/>
2. PUMA (2011). PUMA's *environmental profit and loss account for the year ended 31 December 2010*. Online: <http://about.puma.com/damfiles/default/sustainability/environment/e-p-1/EPL080212final-3cdfc1bdca0821c6ec1cf4b89935bb5f.pdf>
3. Ahi, P. & Searcy, C. (2013). A comparative literature analysis of definitions of green and sustainable supply chain management. *Journal of Cleaner Production* 52:329-341
4. Global Reporting Initiative (2016). Online: <https://www.globalreporting.org/standards>
5. Thomas, M. & McElroy, M. (2016). *The MultiCapital Scorecard: Rethinking organizational performance*. White River Junction, VT: Chelsea Green Publishing
6. Searcy, C. (2016). What makes a supply chain sustainable? *MIT Sloan Management Review*, Online: <http://sloanreview.mit.edu/article/what-makes-a-supply-chain-sustainable/>
7. Montabon, F., Pagell, M. & Wu, Z. (2016). Making sustainability sustainable. *Journal of Supply Chain Management* 52(2):11-27
8. Steffen, W. et al. (2015). Planetary boundaries: Guiding human development on a changing planet. *Science* 347(6223):736
9. Raworth, K. (2017). *Doughnut economics: Seven ways to think like a 21st century economist*. White River Junction, VT: Chelsea Green Publishing
10. United Nations (2015). Online: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>
11. McElroy, M. (2015). Science- vs. context-based metrics. *Sustainable Brands*, Online: [http://www.sustainablebrands.com/news\\_and\\_views/new\\_metrics/mark\\_mcelroy/science\\_vs\\_context-based\\_metrics\\_%E2%80%93\\_what%E2%80%99s\\_difference](http://www.sustainablebrands.com/news_and_views/new_metrics/mark_mcelroy/science_vs_context-based_metrics_%E2%80%93_what%E2%80%99s_difference)
12. CDP (2017). *Missing link: Harnessing the power of purchasing for a sustainable future*. Online: <https://b8f65cb373b1b7b15feb-c70d8ead6ced550b4d987d7c03fcd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/001/500/original/CDP-Supply-chain-report-2017.pdf?1490272235>
13. CDP (2016). *Technical note on science-based targets: CDP climate change 2016*. Online: <https://www.cdp.net/Documents/Guidance/2016/CDP-technical-note-science-based-targets.pdf>
14. Science Based Targets Initiative (2017). Online: <http://sciencebasedtargets.org/>
15. CEO Water Mandate (2017). *Exploring the case for corporate context-based water targets*. Online: <https://www.ceowatermandate.org/files/context-based-targets.pdf>
16. Sheffi, Y. (2015). The tears in the deep tiers. *The European Business Review* November-December 2015, 57-62
17. GHG Protocol (2011). *Corporate value chain (Scope 3) accounting and reporting standard*. Online: [http://www.ghgprotocol.org/sites/default/files/ghgp/standards/Corporate-Value-Chain-Accounting-Reporting-Standard\\_041613\\_2.pdf](http://www.ghgprotocol.org/sites/default/files/ghgp/standards/Corporate-Value-Chain-Accounting-Reporting-Standard_041613_2.pdf)
18. Electronic Industry Citizenship Coalition (2014). Online: [http://www.responsiblebusiness.org/media/docs/EICCCodeofConduct5\\_English.pdf](http://www.responsiblebusiness.org/media/docs/EICCCodeofConduct5_English.pdf)
19. Mars (2017). Online: <http://www.mars.com/global/sustainable-in-a-generation>
20. WRI & Mars (2016). *From doing better to doing enough: Anchoring corporate sustainability targets in science*. Online: [https://www.wri.org/sites/default/files/From\\_Doing\\_Better\\_to\\_Doing\\_Enough\\_Anchoring\\_Corporate\\_Sustainability\\_Targets\\_in\\_Science.pdf](https://www.wri.org/sites/default/files/From_Doing_Better_to_Doing_Enough_Anchoring_Corporate_Sustainability_Targets_in_Science.pdf)
21. HPE (2017). Online: <https://news.hpe.com/hpe-launches-worlds-first-supply-chain-program-based-on-climate-science/>
22. Walmart (2017). Online: <https://news.walmart.com/2017/04/19/walmart-launches-project-gigaton-to-reduce-emissions-in-companys-supply-chain>
23. Bjorn, A., Bey, N., Georg, S., Ropke, I., & Hauschild, MZ. (2017). Is Earth recognized as a finite system in corporate sustainability reporting? *Journal of Cleaner Production* 163:106-117
24. Ahi, P. & Searcy, C. (2015). An analysis of metrics used to measure performance in green and sustainable supply chains. *Journal of Cleaner Production* 86:360-377



# Supply Chain Digitalisation Management Challenge

BY RICHARD MARKOFF AND RALF SEIFERT

**As part of the broader Industry 4.0 trend, the digitalisation of supply chains is happening quickly. Much of the attention is centred on innovations like cloud computing, software-as-a-service (SaaS) and advanced analytics. But there is another aspect to this rapidly changing landscape: companies must rethink their IT management approaches, from their purchasing strategy to the interaction between IT and business processes.**

## Exciting New Solutions, Unexpected Obstacles

A few years ago one of the authors, a supply chain director at a large multinational company, found himself championing an innovative digital supply chain IT solution for vendor collaboration. The goal was to better share projected forward material production

requirements using a SaaS cloud platform provided by a niche vendor. It seemed to be a perfect solution to the vexing challenge of coordinating the vast amounts of planning data for thousands of items with a large, diverse vendor base.

There were understandable questions about potential improvements in staff productivity, inventory and reactivity that fed into the business case. But one challenge was not anticipated, and it nearly scuttled the entire initiative – the company's internal IT department.

The IT team was reluctant to move forward and raised some valid questions. The cloud was new to them, and they raised data security concerns; they also feared that the small, privately held vendor might not be financially viable and insisted on access to its financial position. In fact, their posture became less constructive as the project progressed. Despite raising questions

about the viability of the potential vendor, the IT team declined to assist in prospecting other vendors. They also advocated strongly for using a similar but less performant functionality offered by the company's large enterprise system provider that was less tested and more costly.

In the end these differences were overcome, the project was implemented successfully with the original vendor and all were proud to have contributed to an early instance of supply chain digitalisation. But the initiative revealed an important dynamic that warrants more reflection. The IT roadmap for sourcing and procuring solutions to cover business processes has to adapt to the advent of supply chain digitalisation. IT management strategies that seek to limit the number of vendors, or do not foster virtuous iterations between evolving business needs and potential

digitalisation solutions, will become issues for companies actively looking for ways to evolve their capabilities.

### The Expanding Vendor Ecosystem

Just a few years ago, most IT purchasing functions relied on a handful of large vendors to manage their IT supply chain solutions. The most prominent example would be SAP, of course, which offers a complete suite of functionalities, even to large and diverse companies. Depending on the company's priorities and its competitive advantage, SAP would usually be complemented with a management execution system (MES), or warehouse management solution (WMS), supplied by a niche IT vendor with an attractive product.

Anyone who has participated in a major ERP implementation has likely been confronted by the staggering number of legacy applications that a system like SAP is intended to supplant. It is often in the hundreds: small niche tools woven together in surprising complexity. There are many advantages to consolidating vendors and unwinding legacy complexity. First, focussing spend increases penetration into the vendors' customer base and creates leverage for price negotiations. Second, companies can influence vendors' development priorities – rather than modifying the core vendor product to suit its needs, a company can have its needs integrated into the next version of the vendor's core package. There are also significant technical considerations. Fewer vendors and solution packages means fewer servers, interfaces and data incompatibility issues. This leads to lighter IT infrastructure, which lowers the cost of maintaining, deploying and enhancing a suite of supply chain solutions.

Not everyone is fully satisfied with this model, however. Users – the business functions that use the solutions operationally – inevitably must compromise. A minimalist approach to IT, and using SAP for most functions, usually means foregoing specialised, niche applications which are tailor-made for specific functions. For example, production functions typically prefer smaller vendors that offer packages that are uniquely designed for MES. They would argue it better suits their specific needs: improved material flow on the shop floor, or improved tracking of equipment efficiency. Distribution teams may feel the same way. Quality service teams, too, may agree, as they seek superior traceability.

But digitalisation is rapidly changing the dynamic. The functionalities associated with digitalisation are coming online too quickly for the large, one-stop-shops like SAP. The expectations of omni-channel have brought to market order management systems and distribution solutions that are designed to manage the complexity and demands of working

with ecommerce fulfilment specialists, front-end systems (e.g. POS), and the data needed to power CRM. Another example is the end-to-end supply chain visibility, data, and demand integration capabilities that provide optimisation and traceability. Even if the large IT vendors are offering services in these areas, the speed of evolution is such that they are skeleton solutions when compared with those of innovators. Companies are under pressure to expand their vendor base, and this is coming not just from users, but from the fact that companies must adapt their business models to meet new market expectations.

In a way, supply chain digitalisation is pushing companies to return to the past, where the enterprise system was not the all-in-one answer to every functionality requirement. In this context, it is understandable that functions like IT management, purchasing and business process excellence might struggle to identify business practices to adapt, even in the service of the exciting possibilities of supply chain digitalisation.

One vertically integrated energy company is taking an interesting approach. It understands that it must evolve and move away from trying to limit the IT vendor ecosystem. To manage the transition, the leaders of the business functions have agreed on a core of 15-20% of business functions that the company considers as its competitive advantage. These are the functions that warrant the increased complexity and cost to support smaller, specialised digitalisation vendors.

The remaining functions are not necessarily condemned to settle for pre-packaged ERP options. These processes are transitioning to what the company considers the “industry standard” solution: the most common, readily available, reasonable trade-off between niche player and price/complexity. The company works with influencers like Gartner and industry groups to determine the industry standard solution for each business function. This combination of industry standard and targeted, niche leaders is forming the company's roadmap for the future. The IT purchasing function is now rethinking its sourcing approach. Rather than looking at the raw spend it used to have with large ERP players, it may now use the fact that it is a large customer for a smaller vendor (albeit with less raw spend) to try to influence the vendor's development roadmap.

There was understandable resistance at first. No one likes to be thought of as not contributing to a competitive advantage. One of the keys to success in an approach like this is full engagement and support from senior management. A disciplined, consistent message and adherence to the policy is essential.

# Keys to SUCCESS

- Define the IT Landscape
- Evolve the Organisation
- Obtain Senior Management Sponsorship



## Rethinking the Role of IT

One large, multinational consumer goods company realised that adopting new vendor digitalisation solutions required rethinking the way the company's support centre was organised. It wasn't enough to have expectations and requirements set by business process owners and solution delivery, improvement and training provided by an IT function. It found that the IT teams lacked the business expertise to appreciate the potential benefits offered by new vendor solutions, and the business process owners were often too consumed by other responsibilities and not sufficiently exposed to supply chain digitalisation. To address this, the company adopted a multifunctional approach by appointing a Supply Chain Digitalisation Director, to help bring IT and the business process owners together to discover the possibility of new innovations, and explore their impact on both business practices and IT management.


Another major consumer goods company is also embracing the IT management changes brought on by digitalisation. The rapid proliferation of powerful niche tools has led the company to realise it put too much emphasis on process automation, and not enough on the user. In response, the company is not only actively deploying best-in-breed digital solutions but also building central cockpits so that users have the best of both worlds: niche tools that allow them to benefit from exciting new IT solutions, but with a central portal that allows them to move freely between tools. For example, a customer care representative

can use the cockpit to move from the order management B2B portal to the CRM tool to chat with a customer, then to the ERP to see the orders in process, and finally to the TMS to check order delivery status. A demand planner can have the most powerful, collaborative planning platform to work with customers, and easily move to the integrated data management tool to change a planning parameter. Indeed, this company has embraced the digital future to such an extent that it uses crowdsourcing and social media to allow its community to propose solution enhancements and to vote for their favourites.

However, both companies said that tension still exists between user desire for specialised vendor offerings for their function and the IT imperatives for managing the complexity of data, and interfaces and maintenance.

## Keys to Success

These examples of adapting business practices reveal some key takeaways for firms looking to benefit fully from the possibilities of supply chain digitalisation:

- **Define the IT landscape.** Digitalisation is generating a dizzying array of potential for supply chains. But a company cannot be a leader everywhere at once. Select, invest and tolerate complexity in the priorities and live with being a follower elsewhere.
- **Evolve the organisation.** Siloed thinking will not work, since the impact of choices in supply chain digitalisation slices across different functions and challenges the status quo for business process experts, IT and sourcing. Multifunctional teams – including the users – are needed to explore and select the right solutions and manage the complexity.
- **Obtain senior management sponsorship.** Prioritisation means difficult choices, and cross-functional collaboration is always a challenge. The full support of senior management is vital to bring everyone together around a shared roadmap with the necessary resources to succeed. 

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# The Competitive Advantages of the Digital Economy Require a Digital Mentality

BY MICHAEL GRAVIER, CHRISTOPHER ROETHLEIN, AND JOHN VISICH

**In today's rapidly changing business landscape, supply chain leaders are being challenged by the profound effects of digital economy on the relationship between consumers and the supply chain. In this article, the authors elaborate on three crucial things, particularly connectiveness, responsiveness and process, toward value creation as employed by successful businesses such as Norsk Titanium, a digital supply chain pioneer.**

**T**oo many supply chains are stuck in the 1990's when it comes to the technology they use leaving them decades behind the foundations required for the digital economy. The scale and magnitude of the problem are hard to over-state. For example, evidence indicates that half of supply chain managers have yet to embrace Internet technology.<sup>1</sup> Organisation for Economic Co-operation and

Development (OECD) research into economic malaise in developed economies indicates that a few "frontier" firms are dominating in each industry – meaning top five percent in terms of labour productivity – their key distinguishing feature being their investment in IT.<sup>2</sup> The difference between how frontier companies and laggards compensate employees may explain most of the wage gap that has appeared in many developed economies.

This is no longer a "digital economy that's coming" – it has already begun and the leaders are delivering exponentially more value to their customers. Most modern companies have yet to comprehend how the digital economy will profoundly change the relationship between consumers and the supply chain. Technology is powerful, yet the principal challenge is for supply chain managers to change their strategic conviction. Too much current thinking focusses on efficiencies achieved by

direct managerial control that leads to a sub-optimum supply chain. Future supply chain strategies will need to concentrate on shared control of decision making enabled by the application of advanced technologies to create lasting end-to-end supply chain competitive advantage.

## What's Different?

This reveals a fundamental truth about the digital supply chain – our production technologies are increasing flexibility to the point that production and upstream functions will cease to become a reliable means of achieving sustainable competitive advantage. Both companies and consumers find themselves overwhelmed by the possibilities. Market leaders are the companies that define what performance means in their markets, such as Volvo's focus on safety. These companies find success by NOT being responsive to customers' stated preferences, and instead they assertively

shape customer criteria of purchase based upon actual customer behaviour and respond with highly-efficient processes – such as how Zara puts out a few units of various products to see what sells. It's a self-reinforcing cycle between changing market wants, flexible production technology, and the management processes that make everything happen.

Successful business has always done three things to create value: *connected* with the customer to understand their needs both in relation to the company and to fellow customers; *responded* to the need by developing a solution; and *processed* inputs as efficiently as possible to deliver the solution repeatedly and consistently. Connectedness, responsiveness, and process are related through a conceptual Value Equation where:

$$\text{Value} = \text{Connectedness} \times \text{Responsiveness} \times \text{Process}$$

### Digital Precursor: Leagile Supply Chains

Supply chains use two basic strategies, lean and agile. *Leanness* means developing a value stream to eliminate all waste, including time, and to ensure a level schedule. *Agility* means using market knowledge and a virtual corporation to exploit profitable opportunities in a volatile market place.<sup>4</sup> Traditionally, a decoupling point separates the supply chain into an upstream planning part (lean) and a customer facing part (agile). The decoupling point occurs at the point in the supply chain where the customer places their order for a product. Using information enrichment at the decoupling point integrates the lean and agile paradigms into a *leagile* supply chain,<sup>5</sup> the precursor to digital supply chains.

Future digital supply chains that maximise the Value Equation will evolve the *leagile* strategy to the extreme, where the decoupling point will be a production machine with a batch size of one arranged in a dispersed network deployed near customer markets. A set-up time of virtually zero and batch size of one maximises throughput, allowing a single finished part to be shipped directly to the customer rather than waiting for a batch to be completed, reducing lead times.

The reduction in supply chain entities – and concomitant complexity – exponentially shortens information lead time and increases responsiveness. Reduction in process steps and increased computer controls will reduce the probability of defects, increasing quality. Cost savings will accrue in raw materials purchasing, labour, energy, transportation, inventory holding and waste disposal. Most importantly, customer service will predominate because changes in demand will be easier to accommodate, parts can be delivered faster due to the batch size of one, and new product development time will be reduced.

Leagility powers responsiveness and process. Leveraging the leagile supply chain to enable the digital supply chain requires developing connectedness with the customer and the customer's socio-economic context in order to both anticipate and sense-and-respond in real time to market demands.

### Digital Supply Chain Pioneer: The Case of Norsk Titanium

Norway-based Norsk Titanium (NTi) – widely known as an innovator – represents the challenges and opportunities many digital supply chain pioneers are navigating as they discover how to jointly consider connectedness, responsiveness and process. NTi has developed industrial scale 3D printing, a.k.a., additive manufacturing, that makes titanium parts for aerospace applications with a fraction of the lead time and material waste of conventional competitors, all while reducing the cost of titanium parts to the traditional price point for aluminum parts. Dr. David Jarvis, former Head of New Material and Energy at the European Space Agency, said, “Norsk's technology is a good candidate for a manufacturing technology that will change the world.”

Titanium makes up 14-percent of the weight of a Boeing 787, a typical application. Military aircraft use much more titanium, with the F-22 fighter containing 39-percent titanium by weight.<sup>6</sup> Global air fleets are projected to grow 58-percent over the



Leveraging the leagile supply chain to enable the digital supply chain requires developing connectedness with the customer and the customer's socio-economic context

**Future supply chain strategies will need to concentrate on shared control of decision making enabled by the application of advanced technologies to create lasting end-to-end supply chain competitive advantage.**

next two decades, and currently, Boeing and Airbus have a record backlog of over 12,000 aircraft; 61-percent of the backlog consists of high titanium content aircraft platforms, in addition to substantial military needs.<sup>7</sup>

With many steps and players to coordinate, newly designed aerospace titanium parts typically exhibit lead times of 55 to 75 weeks. In order to address the significant future demand for titanium aircraft parts, NTi recognised that the fundamental paradigm shift from “lean” to “ultra-lean” required going beyond the production floor. In order to attain a competitive advantage with the additive method, NTi simultaneously leveraged the value chain factors of connectedness, responsiveness and process.

### Connectedness

A proprietary process called Rapid Plasma Deposition™ (RPD™) delivers significant reductions in material costs, lead time, and manufacturing steps. To support RPD™, NTi also had to develop control systems and processes that were capable of producing products for aerospace applications, all of which are tied together by a network of face-to-face and electronic networks that inform NTi which parts will most benefit the customer in terms of performance, cost reductions, and improvements to lead times. One of the challenges with connectedness is convincing customers to change their mindset about part design and delivery. Additive manufacturing encourages interactivity in design, demanding imagination and engagement by customers in order to net the full benefits of connectedness. Most supply contracts and relationships lack the incentive structure to encourage genuine solutions adapted to real-time needs and value generation, instead relying on *a priori* specifications and cost savings. Smart companies are moving past experimental prototype generation and into design thinking toward

**Table 1. Traditional Titanium Supply Chain**

Step	Company	Description	Purchasing Strategy
1	Titanium Ore Extractor	Average total heavy metal content is 5%, meaning that 100 tons of raw material must be processed to extract 5 tons of titanium ore.	Product Specification
2	Material Manufacturer	Converts titanium ore into sponge.	
3	Rolling Mill/Metal Manufacturer	Converts sponge into bar stock or sheets.	
4	Distributor	Distributes bar stock and sheet materials.	
5	Part Manufacturer	Rough and finish machining of bar stock into aerospace part. Part gets put into a sub-assembly.	Active Management / Quality Assurance
6	(Sub-)Assembly	Value added supplier adds finished part into higher order partial assembly.	
7	End Customer	Part gets assembled into airframe.	



Additive manufacturing encourages interactivity in design, demanding imagination and engagement by customers **in order to net the full benefits of connectedness.**

limitless whole system opportunities. Front-runners have already initiated a paradigm shift in contract and reward structures.<sup>8</sup>

### Responsiveness

Using additive manufacturing processes and heightened connectedness, the work for a single part can be done with unprecedented responsiveness. In the words of industry expert Ervest Arvai who witnessed Norsk's technology at the Farnborough air show<sup>9</sup>: “Using titanium wire the firm can build up any part overnight. Yes, overnight... This takes JIT to a new level.”

High responsiveness requires restructuring the supply chain and information needs in order to serve customers value that they could never otherwise afford. Many aircraft parts have sporadic, unpredictable demand patterns, leading to high holding costs for parts that may not be required for years. A 4-6 week lead time (or less) provides the option of replacing costly safety stocks of slow moving and hard-to-predict parts with supply chain responsiveness; customers receive unprecedented customer service levels at the same time they save tremendously on supply chain costs. This level of responsiveness also facilitates new product innovation, particularly important in the critical design review stage of aircraft development.

# Competitive strategy shifts from defining value before the market knows what it needs to co-create value in response to actual market needs.

## Process


NTi opened the world's first industrial-scale additive manufacturing plant in Plattsburgh, New York in the fall of 2017. Aerospace grade titanium costs up to \$20 per pound compared to aluminum at \$13 per pound and steel at \$70 per ton. In the aerospace industry, the supply chains for the main engines and titanium components have the longest lead times. The traditional titanium supply chain consists of seven stages, each potentially carried out by a different entity (see Table 1).

Additive manufacturing requires a supply chain (Table 2) with fewer stages and less complexity. Using wire as the only feedstock material, raw material inventory is greatly reduced, eliminating the need for various sized bar stock and sheet material, all of which have long lead times and complex inventories. Norsk reduced the 55 to 75 week average titanium lead time to 4 to 6 weeks.

The additive manufacturing process produces a near-net-shape part, greatly reducing machining required to finish the product. The buy-to-fly ratio for additive manufacturing ranges from 1.5 to 3.1 times as much raw material purchased than ends up in the final finished product, compared to a ratio of 6 for the traditional subtractive process. Since less material needs to be removed, downstream machining operation times and machining costs are reduced. A further benefit is a reduction in the use of milling fluids and electricity – positive impacts on sustainability.

## Conclusion

The digital trifecta of connectedness, responsiveness and process results in exponential efficiency improvements that exemplify the pioneers of digital supply chains. Norsk's success results from simultaneously developing several technology, process and relationship innovations. The greatest impact of digital supply chain advances like additive

manufacturing will coincide with a variety of other technologies, such as artificial intelligence, robots and the Internet of Things. Adopting digital technologies like additive manufacturing lowers costs while providing increased levels of customer service and design flexibility. Competitive strategy shifts from defining value before the market knows what it needs to co-create value in response to actual market needs. These technologies further the blurring of the physical and virtual worlds, requiring companies to re-invent the traditional roles of suppliers and customers. 

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**Table 2. New AM Supply Chain**

1. Titanium ore extractor.
2. Wire manufacturer.
3. NTi - RPD™ production of part.
4. Tier 1 Integrator - Finish machining, coating, sub-assembly and delivery to final customer.
5. End Customer - Part gets assembled into mainframe.

## References

1. CapGemini, (2016). "The current and future state of digital supply chain transformation", *GT Nexus*, pp.1-12.
2. Andrews, D., C. Criscuolo, and P. N. Gal, (2017), "The best vs the rest: The global productivity slowdown hides an increasing performance gap across firms", VoxEU, European Union's Center for Economic and Policy Research, available at <http://voxeu.org/article/productivity-slowdown-s-dirty-secret-growing-performance-gap>; Andrews, D., C. Criscuolo, and P. N. Gal, (2016) "The Best versus the Rest: The Global Productivity Slowdown, Divergence across Firms and the Role of Public Policy", OECD Productivity Working Papers No. 5, OECD Publishing, Paris.
3. Dawar, Niraj (2013), "When marketing is strategy", *Harvard Business Review*, Vol. 91 No. 12, pp.100-108.
4. Naylor, J. B., Naim, M.M., and Berry, D. (1999), "Leagility: integrating the lean and agile manufacturing paradigms in the total supply chain", *International Journal of Production Economics*, Vol. 62 No. 1/2, pp. 107-118.
5. Mason-Jones, R., Naylor, B., & Towill, D.R. (2000), "Engineering the leagile supply chain", *International Journal of Agile Management Systems*, Vol. 2 No. 1, pp. 54-61.
6. Kopp, C. (2007), *Assessing the F-22A Raptor*. Technical Report APA-TR-2007-0105, Air Power, Australia.
7. Airbus (2017), Global market forecast: *Growing horizons*. Retrieved November 24, 2017, from [http://www.airbus.com/content/dam/corporate-topics/publications/backgrounders/Airbus\\_Global\\_Market\\_Forecast\\_2017-2036\\_Growing\\_Horizons\\_full\\_book.pdf](http://www.airbus.com/content/dam/corporate-topics/publications/backgrounders/Airbus_Global_Market_Forecast_2017-2036_Growing_Horizons_full_book.pdf); Boeing (2017), Current market outlook, 2015-2034. Retrieved November 24, 2017, from <http://www.boeing.com/resources/boeingdotcom/commercial/market/current-market-outlook-2017/assets/downloads/2017-cmo-6-19.pdf>
8. For example, Vitasek, Kate, and Karl Manrodt (2012), "Vested outsourcing: a flexible framework for collaborative outsourcing", *Strategic Outsourcing: An International Journal*, Vol. 5 No. 1, pp. 4-14.
9. Arvai, Ernest (2016). "Farnborough 2016 Was Far From Boring – If You Knew Where To Look", *Air Insight*, July 19. Retrieved November 30, 2017, from <https://www.airinsight.com/premium-farnborough-2016-far-boring-knew-look/>

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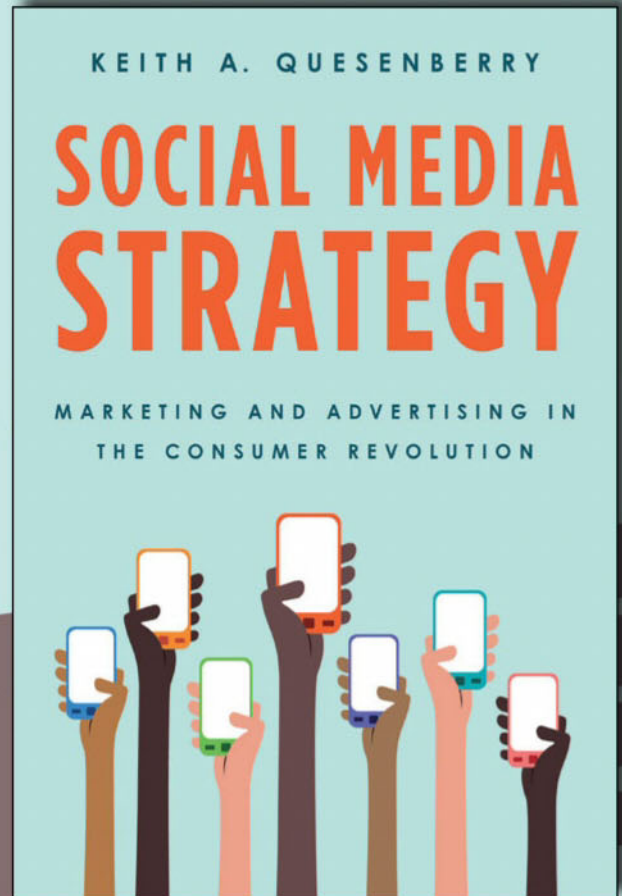
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# Hunter or Hunted? How Digital Media and GDPR Increases Importance of Inbound B2B Sales

BY LAURENCE MINSKY AND KEITH A. QUESENBERRY



**Today, through prior digital and social media research, organisational buyers approach their vendor sales teams much more informed. Hence, it is indispensable for B2B sales to focus on becoming a valued and trusted partner early in their customer's decision journey. Such could be achieved through six strategic steps, which the authors elaborate on in this article.**

Long gone are the days of information asymmetry where the sales person had more information than the customer. In that bygone era, potential customers came to sales seeking information – or the sales person contacted the buyer through cold calling or canvassing.

Today, through prior digital and social media research, organisational buyers approach their vendor sales teams much more informed. In fact, a Consumer Executive Board survey found that B2B buyers make their way through 57% to 70% of the decision-making process before even contacting potential suppliers.<sup>1</sup> And, recent Forrester Research indicates that 74% of buyers now conduct more than half of their research online before making an offline purchase.<sup>2</sup>

Since these B2B buyers already know about features, specs, competitors, pricing, reviews and more before even engaging with their vendors, organisations must reconsider their B2B sales process and take steps to align it with this new reality. To be heard and help guide the buying decision, companies must figure out new ways of engaging the customer during the early stages of the buying cycle.<sup>3</sup>

Gartner Research of global enterprise buyers found that only 32% of the buying time is spent interacting with providers. Of the remaining 68% of the time, 18% was spent on internal company evaluations, 9% on social networks with peers, 12% on other interactions with peers, 13% on third party interactions, and 15% on reviewing independent information. Most of this time is spent interacting with others to understand and interpret the vendor

**A Consumer Executive Board survey found that B2B buyers make their way through 57% to 70% of the decision-making process before even contacting potential suppliers.**

## It is not only important for sales to have more contact with potential customers in the early stages of the buyer's journey, but those interactions must deliver value.

information.<sup>4</sup> Why? Gartner analyst Hank Barnes observes that it's because there's a lack of trust with sales organisations. It is not only important for sales to have more contact with potential customers in the early stages of the buyer's journey, but those interactions must deliver value. Each interaction represents an opportunity to raise trust by emphasising advising over closing.<sup>5</sup>

This Spring outbound sales is set to become even less effective. The General Data Protection Regulation (GDPR) takes full effect in May 2018, giving consumers even greater control over the information marketers can access about them and how they can use it. GDPR can limit marketing's ability to distribute outbound marketing to potential customers, hindering their lead generation capabilities.

GDPR's reach is far and wide will full compliance required by any company offering services to EU citizens regardless of where the citizens reside. There are many important aspects to the regulation, but much of it is focused on trust and transparency and moves company policies and practices to the perspective of full privacy by design and default.

Requirements include "unambiguous" permission versus soft opt-ins, requiring that companies tell consumers how their data will be used and making it easier for them to remove their data. As a result, marketing targeting capabilities will be limited while consumer's powers to remove unhelpful messages will increase.<sup>6</sup>

How should sales organisations adjust to all of these developments? As prospects spend more time searching for solutions on their own and are now empowered to limit access to their data, B2B sales should focus on becoming a valued and trusted partner early in the decision journey, shifting from a strategy of buying audiences and distributing their marketing messages through

outbound channels for lead generation to one of providing valuable information that can be found during initial searches. In other words, you need to end being the hunter and make it easier to become the hunted.

Here are six steps to help you become the hunted:

**1 Ensure your salespeople align with buyer expectations.** According to HubSpot's sales perception survey, buyers want someone who listens to their needs (69%), is not pushy (61%), and provides relevant information (61%).<sup>7</sup> Robert Cialdini in *Pre-suasion* points out that the first goal for salespeople shouldn't be to try and get the prospect to like you; rather, it is to convince the prospect that you like them. Cialdini even cites the old adage "People don't care how much you know until they know how much you care."<sup>8</sup> Similarly, Lisa McLeod in *Selling with Noble Purpose* shows that salespeople who genuinely understand how they can make a difference for the customer outsell more quota-driven peers.<sup>9</sup>

**2 Integrate sales and marketing teams.** When the buyer's journey is disrupted, it also disrupts the conventional roles these teams have played. Traditionally marketing bought lists and media and sent messages to prospects, generating awareness, which fed leads to sales, who'd close the deal. But marketing can no longer win by distributing lead generation messages and sales can no longer win by supplying the follow up information.

Working together, sales can provide valuable insights into customer issues, trends and brand perceptions. Marketing can take those insights and develop valuable pieces of content to help sales intersect prospects guiding the decision journey. Marketing can train sales in using social media and provide content they need for the new buyer's journey value exchange.



The first goal for salespeople shouldn't be to try and get the prospect to like you; rather, it is to convince the prospect that you like them.

Integrating systems and improving communication between marketing and sales increases the value of these efforts. A Marketo study found that when sales and marketing work together, businesses are 67% better at closing deals.<sup>10</sup>

**3 Migrate to a multi-touch marketing attribution model.** Single touch attribution models – first or last – are good for simple buying situations, but not for complex ones typical of B2B situations, because they only give credit for the sale to the content right before they close or the one that initially captured the lead not accounting for the entire customer journey. The first touch could be a banner ad, social message, or a video found through search, but it would ignore the influence of, say, an eBook, LinkedIn post, or blog article had in turning the initial interest into a sales contact despite the fact that the more content you get into the initial stage, the more influence you’ll have in getting into the consideration and contact set. Likewise, if you use a last touch attribution model, you will miss crediting all of the content that moved B2B buyers along their respective journeys. Unfortunately, 55% of B2B marketers are only using single-touch attribution models, even though CRM tools can help automate multi-touch attribution.<sup>11,12</sup>

**4 You need to become GDPR compliant,** which requires that marketers get consent before sending digital communications to prospects. What’s more, the communications must be related to that consent and the purpose for which it was collected.

As a result, marketing’s ability to hunt prospects for leads through outbound efforts is severely limited. Third party lists can’t simply be bought with opt-in assumed. Consent must be explicit and records must be maintained. What’s more, since consumers will most likely be hit with more explicit and frequent consent notifications, opt-outs could increase.

The penalty for noncompliance is up to 4% of annual global turnover or 20 Million Euro whichever is greater. So, while marketing will still play a role, salespeople will now have a greater need to pull in their own leads, which inbound strategies can enable.<sup>13,14,15,16</sup>

**5 You should end cold calling or, at least, de-emphasise it to focus on social selling.** The traditional sales process, which

is based on the salesperson’s perspective, not the customer’s, consists of prospecting, pre-approach, approach, presentation, close, and follow up, much of which has an online corollary that better reflects today’s reality.

In the new model, prospecting and the pre-approach becomes SEO, social engagement, and a media buying strategy that ensures valuable, relevant content is found by appropriate prospects. In addition, presentations can be replaced with infographics, online videos, webinars and other informative content that proves value, establishes expertise, plus demonstrates features and benefits. This moves the sales function out of an “always closing” mentality and into a “trusted advisor” role.<sup>17</sup>

**6 Finally, policies and processes for real-time answers need to be created especially in social media.** Buyers now reach out to sales representative when they’re ready to buy, or need detailed or customised information – and quick and robust answers are expected.

Vodafone is a global company that has succeeded with an inbound B2B sales strategy. The company realised that its B2B customers were changing the way they buy and were seeking service providers who have a strategic understanding of their business, offer practical advice, and deliver value with the sales conversation.



Buyers now reach out to sales representative when they’re ready to buy, or need detailed or customised information – and quick and robust answers are expected.



If you want to persuade someone, you need to be sure that the audience's attention is focused in the right direction when you present your appeal. What better way to focus them than by **having them approach you and ask for the information!**


Sales and marketing worked together to identify content pieces that would help contribute to the conversation.

The result was marketing and sales alignment in a strategy based on sales insight and messaging that resonated with the audience supporting a consultative approach. Content was created in easy to share social media posts and training was provided on the best ways to share with prospects. Marketing learned from sales about customer perspectives, sales teams became a valuable content marketing channel, and business was generated as a result.<sup>18,19</sup>

IBM was seeking new ways to find B2B customers for their cloud computing and data security products. Telemarketing and email weren't producing the results they wanted. IBM launched an inbound effort. By monitoring social media, marketing helped uncover user's discussions about cloud computing trends, issues, and other hot-button topics. Then sales reps checked an RSS feed, found content that fit the discussions, and shared it on their social media and on their IBM website profile pages. Product orders were reportedly four times higher during the first quarter of the inbound strategy than the same quarter the year before.<sup>20</sup>

#### Some question to ask for your future B2B sales efforts:

- Does your sales process need some improvements to reflect this new reality?
- Have you prepared for the marketing implications of GDPR?
- Are you working more closely with marketing to improve inbound efforts?

According to Cialdini in *Pre-suasion*, if you want to persuade someone that something is truly important, you need to be sure that the audience's attention is focused in the right direction when you present your appeal. What better way to focus them than by having them approach you and ask for the information! 

*NOTE: This article is not a substitute for professional legal advice. Brands should consult their own company's general counsel to ensure legal compliance.*

#### About the Authors



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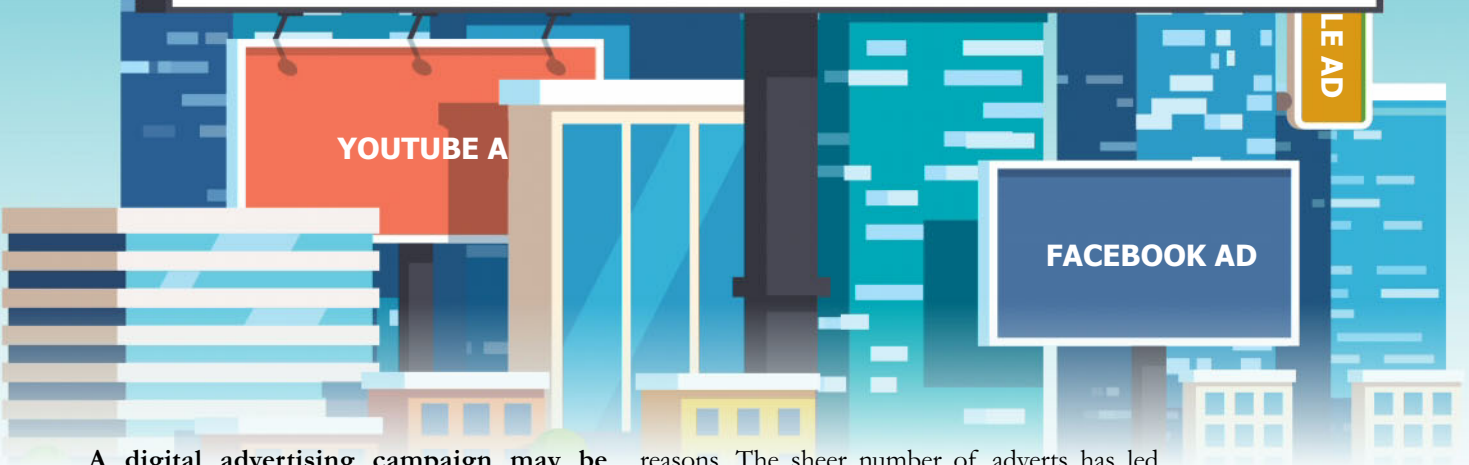
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#### References

1. Paul Nolan. (2015). "Mapping the Buyer's Journey," *Sales & Marketing Management*, March 27, <https://salesandmarketing.com/content/mapping-buyer%E2%80%99s-journey>.
2. Lori Wizzo. (2015). "B2B Buyer Journey Mapping Basics," Forrester (blog), May 25, [https://go.forrester.com/blogs/15-05-25-b2b\\_buyer\\_journey\\_mapping\\_basics/](https://go.forrester.com/blogs/15-05-25-b2b_buyer_journey_mapping_basics/).
3. Lori Wizzo. (2015). "B2B Buyer Journey Mapping Basics," Forrester (blog), May 25, [https://go.forrester.com/blogs/15-05-25-b2b\\_buyer\\_journey\\_mapping\\_basics/](https://go.forrester.com/blogs/15-05-25-b2b_buyer_journey_mapping_basics/).
4. Jon Reed. (2015). "Why enterprise buyers trust influencers – new research," Diginomica (blog), June 19, <https://diginomica.com/2015/06/19/why-enterprise-buyers-trust-influencers-new-research/>.
5. Hank Barnes. (2015). "The Trust Cycle – Are you Developing or Eroding Trust?" Gartner (blog), June 16, <https://blogs.gartner.com/hank-barnes/2015/06/16/the-trust-cycle-are-you-developing-or-eroding-trust/>.
6. Kingpin. (2017). "What will the GDPR mean for B2B marketing professionals?" April, [http://kingpincomms.com/wp-content/uploads/2017/04/Kingpin\\_GDPR-eBook-20172-002.pdf](http://kingpincomms.com/wp-content/uploads/2017/04/Kingpin_GDPR-eBook-20172-002.pdf).
7. Mimi An. (2016). "Buyers Speak Out: How Sales Needs to Evolve," HubSpot (blog), April 17, <https://research.hubspot.com/reports/buyers-speak-out-how-sales-needs-to-evolve>.
8. Cialdini, Robert B. (2016). *Pre-suasion: a revolutionary way to influence and persuade*. New York: Simon & Schuster.
9. Lisa Earle McLeod. (2012) *Selling with Noble Purpose: How to Drive Revenue and Do Work That Makes You Proud*. New York: Wiley.
10. Stacey Thornberry. "Dynamic Duo: Close More Deals with Sales and Marketing Alignment," Marketo (blog), April 2016, <https://blog.marketo.com/2016/04/dynamic-duo-close-more-deals-with-sales-and-marketing-alignment.html>.
11. Pawan Deshpande, "Understand How Content is Influencing Buyers: A Primer on Attribution Models," Content Marketing Institute (blog), February 10, 2017, <http://contentmarketinginstitute.com/2017/02/primer-attribution-models/>.
12. Lauren Frye. (2015). "[Infographic] New Stats Reveal How B2B Marketers Think About Attribution," Bizible (blog), November 4, <https://www.bizible.com/blog/b2b-marketing-attribution-infographic>.
13. Ali Chambers, "What The GDPR Means For B2B Salespeople," Communicator (blog), February 13, 2017, <https://www.communicator.co.uk/blog/gdpr/gdpr-means-b2b-salespeople/>.
14. Byrony Seifert, "What is GDPR and What do B2B Tech Marketers Need to Know about it?" TechTarget (blog), May 31, 2017, <http://www.techtarget.com/what-is-gdpr-and-what-do-b2b-tech-marketers-need-to-know-about-it/>.
15. "Economic impact assessment of the proposed European General Data Protection Regulation," Deloitte, December 16, 2013, <https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/about-deloitte/deloitte-uk-european-data-protection-tmt.pdf>.
16. Scott Meyer, "What Marketers Need to Know About the EU's New Data Protection Rules," eMarketer (blog), March 14, 2017, <https://www.emarketer.com/Article/What-Marketers-Need-Know-About-EU-New-Data-Protection-Rules/1015409>.
17. Laurence Minsky and Keith A. Quesenberry, "How B2B Sales Can Benefit from Social Selling," Harvard Business Review (blog), November 8, 2016, <https://hbr.org/2016/11/84-of-b2b-sales-start-with-a-referral-not-a-salesperson>.
18. "Awards case study: Vodafone aligns sales and marketing teams to engage senior decision-makers," B2B Marketing, November 17, 2016, <https://www.b2bmarketing.net/en/resources/b2b-case-studies/awards-case-study-vodafone-aligns-sales-and-marketing-teams-engage-senior>.
19. Votaphone Group Plc, Votaphone Group Plc Annual Report 2016, 2016, [http://www.vodafone.com/content/annualreport/annual\\_report16/index.html?utm\\_source=vodafone&utm\\_medium=promotion&utm\\_term=investorARpanel&utm\\_campaign=annual\\_report\\_2016.html](http://www.vodafone.com/content/annualreport/annual_report16/index.html?utm_source=vodafone&utm_medium=promotion&utm_term=investorARpanel&utm_campaign=annual_report_2016.html).
20. "IBM's Social Selling: The Computer Giant Find B2B Leads In Social Media," Chief Marketer, January 25, 2012, <http://www.chiefmarketer.com/ibms-social-selling-the-computer-giant-finds-b2b-leads-in-social-media/>.

# DIGITAL ADVERTISING'S WILD WEST: Deciding Which Media Channel is More Effective is the Key

BY TAHIR NISAR



**A digital advertising campaign may be stymied by the difficulty in attributing the value of online investment to various online channels such as display ads, paid search to social media and email. The article considers attribution models that can be applied to assign sales credit to these and other online channels.**

In a recent speech to the US Internet Advertising Bureau, Marc Pritchard of Procter & Gamble, who controls an annual ad budget of \$7.2 billion as its Marketing Director, suggested that there is a crisis of trust facing the digital advertising industry. He contended that the industry still does not have common standards to measure online audiences and viewing times. In contrast, traditional media such as TV and newspapers can be trusted more on these counts (e.g. viewing times and readership).

Advertisers and marketers have become dissatisfied with advertising on the Internet for many

reasons. The sheer number of adverts has led to consumers simply ignoring many, leaving advertisers and marketers with little to show for their efforts. There are a number of differences between Internet advert avoidance and traditional advertising; the Internet can often be used more as a tool than an entertainment device, unlike a television, and, therefore, users avoid adverts as they may have a limited time to carry out the task at hand. Furthermore, there are ill-effects on the reputation of Internet adverts in the context of web page loading times, users want to access the data they are looking for quickly and do not want to be hindered by adverts taking time to load. Manchanda et al (2006) examine the effect of banner ads on Internet purchasing in their research article.<sup>1</sup> One of the first major findings that they make is that all other things being equal exposure to banner advertising does have a significant positive effect on current consumers' propensity to purchase a product. That is to say, consumers' that are currently using a company or

The sheer number of adverts on the Internet has led to consumers simply ignoring many, leaving advertisers and marketers with little to show for their efforts.

## Consumers respond more favourably to fewer more consistent banner designs over multiple different pages rather than a large quantity of differing adverts on a smaller number of pages.

brand are positively influenced by seeing banner adverts for that brand or company. What's more, they argue that focussing on click-through rates may be the wrong gauge for managers to use as their research shows that simple exposure to a banner advert will increase the likelihood of a current consumer engaging in repeat purchasing, and the fact that they haven't clicked the advert does not mean that they haven't been influenced by it. The final outcome they raise from the research conducted is that consumers respond more favourably to fewer more consistent banner designs over multiple different pages rather than a large quantity of differing adverts on a smaller number of pages. It is likely that high-involvement products that the consumers only purchase after long careful consideration, such as a car or van, gain the best results via click-through responses to advertising, conversely low-involvement products have been found to benefit more from a high impression rate, or a high number of consumers simply viewing the advert.

In a purchase funnel, a consumer may interact with an assortment of media platforms ranging from paid search and organic search to social media and email. Exhibit 1 depicts how a consumer may rely on display ad as a sole information outlet when making a purchase decision (Sales Funnel 1). Alternatively, he or she may use several other media channels including search, social media and price comparison (Sales Funnel 2). For many companies, digital advertising has thus become a vital way to maintain the premium pricing of their brands, which means that the problem is not simply about the existence of independently verified online standards or the difficulties surrounding media transparency. These companies invariably use the last-click method to assign credit

to online advertising channels – to the channel where the consumer makes the purchase decision. However, this is a flawed strategy as it fails to take account of the influence of all touch points except the last one in the purchase funnel and so does not capture the full value of digital advertising. Despite efficiency gains in Web-based data recording and management related technologies, measuring the success of a digital advertising campaign is thus stymied by the difficulty in attributing the value of online investment to various online channels. Moreover, the problem with rule-based or heuristic attribution models such as last-click is that not only is it impossible to predict (on an individual basis) the ways customers across multiple backgrounds, preferences, and situations make purchases but also how the shared value can be allocated equitably among the ads channels according to their individual contributions. In making these allocations, one has to contend with different digital channels (e.g. Facebook, Twitter, YouTube, Instagram, search, blogs, email and display advertising): it thus becomes too complicated to develop an attribution model for each and every path to purchase – a customer may use one or more of these channels before making a purchase decision. Consequently, there is a need to consider the more rigorous variety of statistics-based attribution models as a preferable attribution strategy. These models can provide more stable credit assignments to the digital channels in purchase funnel.

In a paper on “Attribution Modeling in Digital Advertising: An Empirical Investigation of the Impact of Digital Sales Channels”,<sup>2</sup> we describe and compare different statistics-based and rule-based attribution models. The paper shows, under what conditions, display ads or search or organic are a good media strategy. Our goal in this paper is to test all these models empirically; in terms of how they assign value to different online channels when moving away from the last-click attribution model. As we compare the models to examine individual reactions to specific advertising formats (e.g. display), we also explain whether multi-channel attribution

Exhibit 1: Examples of Digital Channels Used in a Sales Funnel

	Digital Channels				
Sales Funnel 1				Display Ad	Purchase
Sales Funnel 2	Display Ad	Search	Social Media	Price Competition	Purchase

Source: Nisar & Yeung (2017)


models give different channel valuations than last-click and whether these channel valuations differ significantly between the multi-channel models used. We develop predictions that examine at what stage in a consumer's journey different online channels feature most prominently for an online business; the financial importance of these channels under last-click; and the effects of moving to the rule-based multi-channel attribution models (i.e. time-decay, uniformly distributed and position-based) and statistics-based multi-attribute models. As our study of multi-channel models show, display is the biggest loser as we move from last-click to other multi-channel attribution models. In fact, this is our key result; when multi-channel models are used online marketing tools such as organic and search will receive higher credit.



In our empirical tests, we use the last-click model as a default attribution strategy, which means that we could focus on assigning value to display ads and compare the effects of moving to multi-channel attribution models. We focus on the extent to which display ads generate higher average order values than other online marketing tools; and whether display ads generate more revenue under the last-click model than it would when using the other attribution models such as time decay, linear, position-based or Shapley Value-based model. Our questions are motivated by the observation that display advertising is likely to act as a converter in a purchase funnel; and the last-click model attributes 100 percent credit to a convertor.

Our findings show that the last-click generates the most revenue for the convertor – in this case display ad – and delivers the highest average reward. However, when comparing the last-click model against each one of the other models, the results show a significant difference in the average channel reward value, with the multi-channel attribution models assigning increased value to search, organic and other ad formats; both the revenue

and average channel reward values showed a significant difference between the current model (last-click) and the other models (e.g. rule-based and statistics-based) explored. As we value each medium for its contribution to the end purchase, our study understates the value of some key emergent media in the chain, particularly social media. It appears that the attribution models currently do not fully value social media, which often do not directly lead to purchase but can have a strong behavioural impact, for example, by shaping the consideration set. While the value of social media does improve as the sophistication of the attribution models increases, the consumer behaviour implications need to be fully accounted for in any study of advertising and attribution.

In conclusion, our findings reveal wide differences between the online channels investigated. There is a striking drop in the value of display ads when we move away from the current last-click model to the other multi-channel attribution models. Online marketing tools such as organic and search instead receive higher credit under these multi-channel models. The findings provide insights into the complexities of attribution modelling, and how one can choose an appropriate model based on its underlying assumptions and stability characteristics. Our results also shed light on the convergent validity of the multi-channel models, as well as the predictive ability of the statistical model. 

#### About the Author

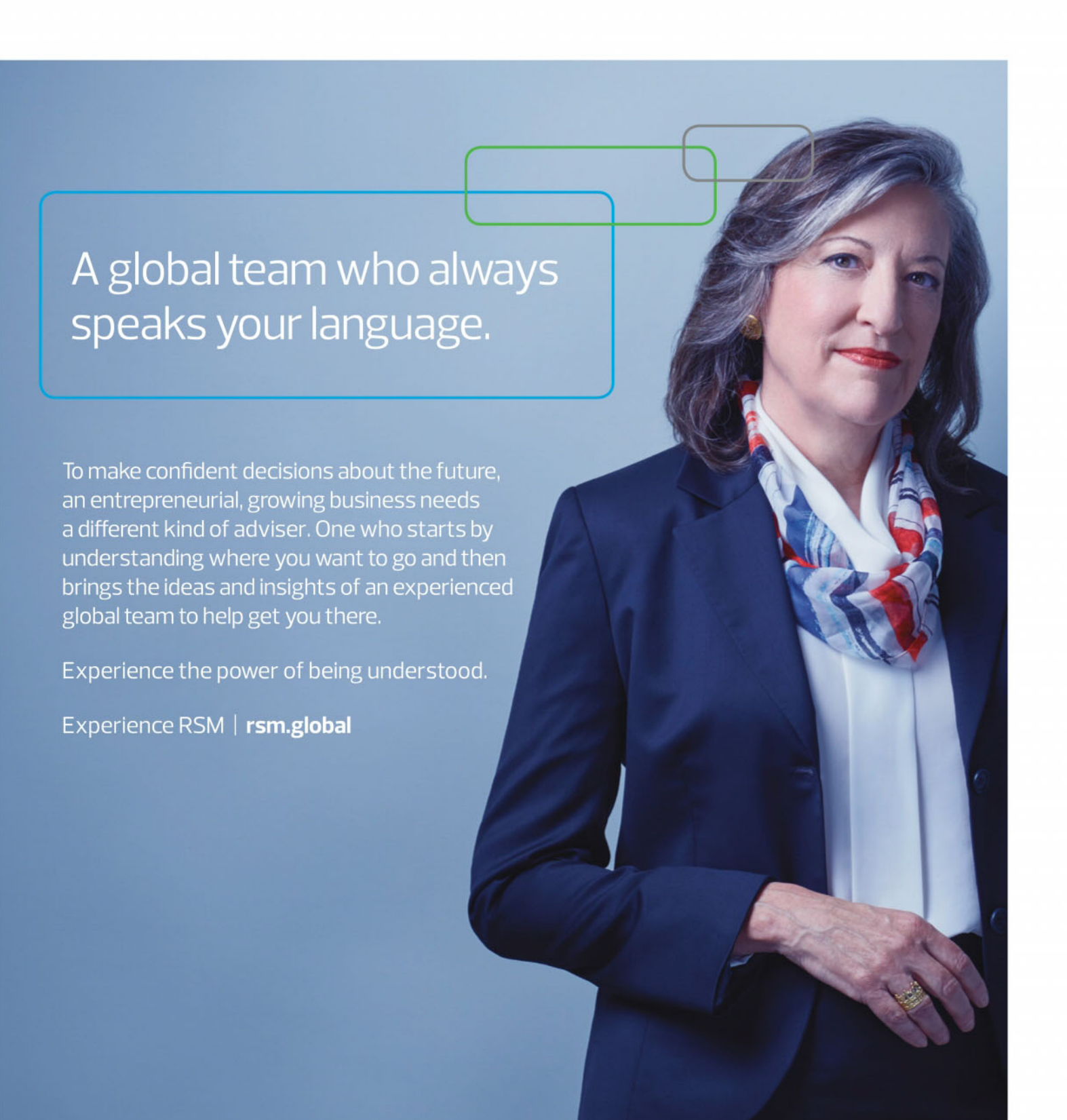


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#### References

1. Manchanda, P, Dube, J.P., & Goh, K.Y. (2006), The effect of banner advertising on Internet purchasing, *Journal of Marketing Research*, 43 (1): 98-108.
2. Nisar, T.M. & Yeung, M. (2017) Attribution modeling in digital advertising: An empirical investigation of the impact of digital sales channels, *Journal of Advertising Research*.

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# How to Negotiate Effectively in Different Cultures

BY GUIDO STEIN AND KANDARP MEHTA

**In a globally connected world characterised by diversity, there exist different approaches towards negotiation, which are dependent on people's respective culture. In this article, the authors discuss the significant impact of culture to negotiation processes as expounded on three culture types – *Dignity Culture, Face Culture and Honour Culture* – with the aim of helping us understand one another better.**

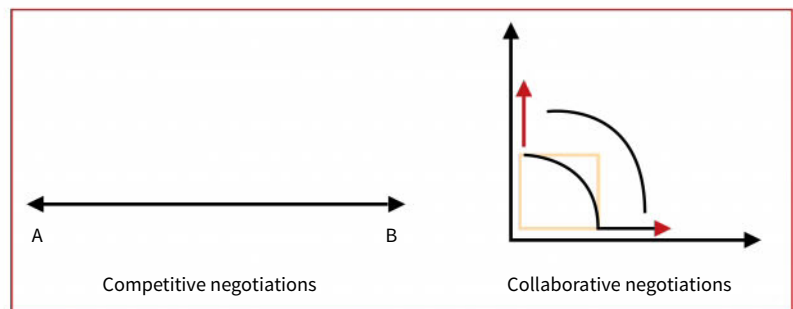
**E**xecutives in our negotiation programmes quite often ask: “How should I negotiate with people from a very different culture?” Most negotiations in today's globally connected world take place in a multinational context. While this has brought us all closer, at the same time it has added to the anxiety of business executives when they are dealing with cultures with which they are not very familiar. Most of the executives with whom we interact highlight culture as a very important factor as far as negotiations are concerned.

Why do cultures have a strong impact on negotiations? Before answering this question, let us try to understand what happens in a negotiation. A negotiation is primarily an interaction that someone has with one or more counterparts to satisfy a particular need and thereby gain an advantage or claim something. Negotiating is basically a relationship between an individual's

style of negotiation and that individual's interpretation of the situation. Culture influences both the individual's style of negotiation and the way negotiators interpret situations and their counterparts' behaviour.

## Negotiation Situations and Style

Negotiation literature identifies two paradigms to define very distinct negotiation situations and styles – namely, (1) distributive or competitive negotiations and (2) integrative or collaborative negotiations.



As the diagrams above suggest, a competitive situation is one where the negotiator has to get the best outcome at the cost of the counterpart's position. For example, in a typical traditional vegetable market in rural India when you buy potatoes or onions, you bargain for

**Culture influences both the individual's style of negotiation and the way negotiators interpret situations and their counterparts' behaviour.**

## CULTURE INFLUENCES THE WAY THE NEGOTIATOR PRIORITISES HIS OR HER INTERESTS, AND CULTURE ALSO DICTATES HOW THE NEGOTIATOR ASKS FOR WHAT HE OR SHE IS SEEKING.

a better price with the vendor. You will get a lower price only if the vendor reduces his or her price expectations. Competitive negotiations are also known as positional bargaining because of the excessive focus on positions during such negotiations. On the other hand, collaborative negotiations are also known as interest-based negotiations or integrative negotiations because the focus is not really on asking the counterpart to reduce his or her expectations but, rather, the focus is on finding the best solution that will actually improve the payoff of both parties.

Cultures influence the way we behave and also the way we assess other people's behaviour. Hence, culture has a strong impact on negotiations. Each culture has a cognitive component and a normative component. A culture's cognitive component deals primarily with the different values that the culture espouses. These values affect our understanding and judgment of what is acceptable and what is not, what is right and what is wrong and so on. On the other hand, the normative component of a culture outlines common rules of behaviour: how to sit, how to greet people, how to eat, what to say, what not to say, etc. Rules and norms are outlined by culture. Let us try to understand in detail why and how culture influences negotiators.

Cultures influence negotiation strategies in two ways. Culture influences the way the negotiator prioritises his or her interests, and culture also dictates how the negotiator asks for what he or she is seeking. When negotiators are involved in the process of exchanging information, a range of behaviours is possible. However, these behaviours are deeply influenced by culture. For example, confrontation is a typical negotiation behaviour but, while in some cultures direct verbal confrontation is considered to be a normal part of negotiation behaviour, in others verbal confrontation is not an option. Similarly, some cultures influence the negotiator's interests

and priorities. For example, individualist cultures might inspire the negotiator to seek self-interest, while more collectivist cultures could inspire the negotiator to seek objectives that would satisfy the interests of not just the individual but also of the community as a whole.

The following table sets out different cultural prototypes and their impact:

Cultural prototype	Impact on negotiation
Collectivist vs. individualist cultures	In a collectivist culture, negotiators are likely to negotiate for common objectives. In such a culture, it is more common to negotiate in teams rather than alone. Also in a collectivist culture, there may be aversion to direct confrontation. In an individualist culture, on the other hand, negotiators are likely to focus more on individual goals and individual gains. In the case of such a culture, there are more possibilities of direct confrontation during negotiation.
Low-context vs. high-context cultures	Low-context cultures prefer the direct exchange of messages and sharing of information. High-context cultures share information indirectly and meaning is embedded in many messages. As a result, in low-context cultures, sharing information is easier as well as more direct. In contrast, sharing information is more complicated in high-context cultures, and both negotiations and decision-making tend to take longer.
Hierarchical vs. egalitarian cultures	In hierarchical cultures, power distances are greater. As a result, negotiation is possible when power distances have been reduced. This is why negotiations are more likely to be held in teams. In egalitarian cultures, it is easier to hold negotiations. Negotiations in egalitarian culture tend to end more quickly as individual decision-making is assumed. In hierarchical cultures, there is a tendency to refer to higher authorities and, as a result, negotiations tend to take longer.



### East vs. West and Beyond

Traditionally the world was seen as East vs. West. The Western hemisphere had a uniform concept of the East and vice versa. However, in the 20<sup>th</sup> century this prototype was replaced by a more East-middle-West cultural prototype. Cultural psychologists divide the world into three prototypes and each one has a strong bearing on negotiations. These culture types are dignity culture (Western culture), face culture (East Asian culture) and honour culture (Middle Eastern, Southeast Asian and Latin American cultures). Jeanne M. Brett in her seminal work *Negotiating Globally* (2001; third edition, 2014) argues that these culture types can be described:

“in terms of six sets of characteristics: self-worth, power and status, sensitivity

and response to insults, confrontation style, trust and mindset. [...] Self-worth refers to a person's sense of his or her own value in society. Power refers to a person's ability to influence an outcome. Status refers to a person's position in a social hierarchy. Sensitivity and response to insults refers to the way a person is affected by and responds to another's offensive behaviour. Confrontation style refers to how a person responds when faced with defiance, opposition, or hostility. Trust is the willingness to make oneself vulnerable to another person. Mindset refers to the way people reason and process information."

What are the dignity, face and honour cultures? Let us look at each one in turn.

### Dignity Culture

Dignity culture is the cultural prototype of the Western hemisphere. Dignity culture societies are more egalitarian and hence the self-worth of an individual is self-determined. Since self-worth is independent of social status and does not depend on social opinion, it is also possible that negotiations will focus more on individual welfare. In such cultures, retaliation is less common because of the lower dependence on others for self-worth. At the same time, greater importance is attached to trust and reciprocity. In addition, due to the influence of Greek philosophy and especially Aristotelian logic, a highly-analytical approach can be seen in negotiations.

### Face Culture

Face culture is the prototype of East Asian societies. The main feature of these societies is collectivism. Self-worth is socially conferred and depends on a person's relative position in a stable social hierarchy. The atomistic unit of society in a face culture is the family. Hierarchies and social relationships are very important in

Exhibit  
Characteristics of Dignity, Face and Honor Cultures

Cultural prototype	Dignity	Face	Honor
Geographical location	Western Europe, North America, Australia and New Zealand	East Asia	Middle East, North Africa, Iberian Peninsula, Latin America, Southeast Asia
Self-worth	Self-determined Variable	Socially conferred Stable	Socially claimed Dynamic
Power and status	Egalitarian Dynamic	Hierarchical Stable	Hierarchical Dynamic
Sensitivity and response to insults	Low sensitivity	Medium sensitivity	High sensitivity
Confrontation style	Direct Rational Unemotional	Indirect Controlled and measured Use of superiors to resolve conflicts	Direct and indirect Expressive
Trust	Interpersonal High level of in group and out-group trust	Institutional High in-group and low out-group trust	Interpersonal and institutional Low out-group trust
Mindset	Analytic	Holistic	Analytic and holistic

Source: Adapted from Exhibit 2.2 in Jeanne M. Brett, *Negotiating Globally*, Jossey-Bass, San Francisco, third edition, 2014.

face culture. As a result, there is less confrontation in negotiations, while interactions are more indirect and impersonal. Interpersonal trust is important in face culture but this trust does not merely emanate from interpersonal interaction – rather, it also depends to a great degree on institutional approval. Some scholars even argue that forms of institutional surveillance (e.g., surveillance by the family, community, Church, etc.) serve as reliable external guarantors of individual behaviour. Another interesting characteristic that has a huge influence on negotiations is the holistic mindset of individuals in face culture. When negotiators analyse a situation, they focus both on the problem and on the context in which it is embedded. Many executives tell us that almost every negotiation in a face culture becomes a multi-issue negotiation.



Cultural psychologists divide the world into three prototypes and each one has a strong bearing on negotiations. These culture types are dignity culture (Western culture), face culture (East Asian culture) and honour culture (Middle Eastern, Southeast Asian and Latin American cultures).

### Honour Culture

Honor culture societies are probably the most diverse, which is why it is more difficult to identify the precise prototype of honour culture. Self-worth has been seen as a combination of an individual's assessment of his or her value in society and socially-conferred value. In other words, it is important to have social approval of individually determined self-worth. In honour cultures, societies tend to be hierarchical but these hierarchies are not always stable and so they need to be established. For negotiation, this is a very important issue. In a negotiation in honour cultures, there is an increased possibility of a confrontational approach. According to Brett:


“in honour cultures, trusting means putting your self-worth in the hands of others. If you trust and your trust is reciprocated, then you gain honour because your self-worth is ratified. But there is the huge risk associated with trusting. If your trust is not reciprocated, there is both a social loss of social face and also a personal loss of self-worth.”

Hence negotiations in honour cultures at times rely more on the argumentative brilliance of negotiators and not only on their trustworthiness.

### Final Advice: Do Not Overlook the Individual

Having gained an understanding of these three cultural paradigms, we must also understand that culture is not a static and stable construct. So many countries in the world today have education systems that are highly influenced by European education systems. Many young men and women relocate to different parts of the world to pursue higher education, develop their careers or simply to benefit from new experiences. As a result, across the world there has been a great degree of cultural exchange. The framework that has been shown in this teaching note aims to help us understand one another better. Scholars of cross-cultural research have been working very hard to separate cultural stereotypes from cultural knowledge. This is why we strongly advise all negotiators not only to make an effort to understand the cultural nuances of their counterparts but never to

## CULTURE INFLUENCES THE WAY THESE NEEDS ARE EXPRESSED AND PRIORITISED BUT THIS DOES NOT MEAN THE BASIC NEEDS OF NEGOTIATORS ARE ABSENT.

undermine the importance of the individual with whom they are dealing. Negotiations are strongly influenced by individual needs and insecurities. Culture influences the way these needs are expressed and prioritised but this does not mean the basic needs of negotiators are absent. After all, across the world, a smile is always sweet and tears are always salty. 

### About the Authors



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# The Right Business Model At The Right Time

BY ADAM BOCK AND GERARD GEORGE

**The combination of globalisation, Moore's law and ubiquitous information have transformed industries into fluid, rapidly-changing landscapes. Today's competitor is tomorrow's partner and next year's customer. In this article, the authors elaborate on the four stages of Business Model Cycle which managers, especially at new and growing ventures, can reflect on as they aim to build and evolve organisations to explore shifting seas and exploit opportunities.**

*"It's the business model, stupid!"* – Esther Dyson

**T**he pace of business innovation and change is accelerating. To adapt, entrepreneurs and executives have adopted (and exhausted) a variety of management tools: blue ocean strategy, business re-engineering, organisational learning, TQM and disruptive innovation, just to name a few. But the combination of globalisation, Moore's law and ubiquitous information have transformed industries into fluid, rapidly-changing landscapes. Today's competitor is tomorrow's partner and next year's customer. How can managers, especially at new and growing ventures, build and evolve organisations to explore these shifting seas and exploit opportunities?

It's all about the business model.

For more than a decade, we have been studying business models at small and large firms. We interviewed hundreds of entrepreneurs and managers. We analysed IBM's Global CEO survey data covering 750 CEOs of large and tech-savvy firms. The business model has emerged from an ignominious birth in the dot-com era to become the

dominant tool for exploring and exploiting opportunities. As the world of business accelerates, your firm's business model will only become more critical.

There is only one problem. The hard truth is that no one really knows why some business models work and others fail. That is precisely why you need to diagnose and test your business model before you implement it. Equally important, you need to know when your business model must be updated and evolved.

In *The Business Model Book*, we demonstrate the general process for designing, evaluating, testing, and adapting business models. The business model cycle (Figure 1) can be used

FIGURE 1: THE BUSINESS MODEL CYCLE  
(FROM *THE BUSINESS MODEL BOOK*, PEARSON 2018)

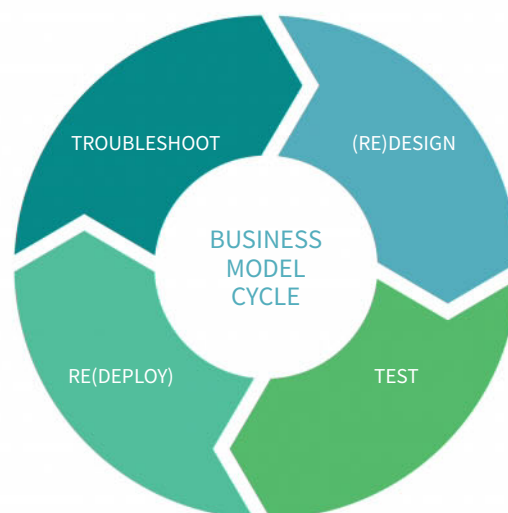


Table 1: You probably need business re(design) when...

Problems	Opportunities
<ul style="list-style-type: none"> <li>Operational failures cannot be attributed to only one or two core causes.</li> <li>Market adoption problems do not seem to be tied to operational issues at all.</li> <li>Industry conditions are changing faster than you can adjust operations.</li> </ul>	<ul style="list-style-type: none"> <li>New products or services require more than incremental changes.</li> <li>You believe that current products or services could be attractive to markets that are significantly different from the markets you currently serve.</li> </ul>

Source: *The Business Model Book*, Pearson 2018

at every organisational stage: from pre-launch ideation to rejuvenating a multinational. **You probably have most of the tools and capabilities ready to hand; you just need to use them effectively to build the right business model at the right time.**

The four stages of the Business Model Cycle are troubleshoot, re(design), test, and re(deploy).

### Troubleshoot

The first step is arguably the simplest. Do you need to (re)design your business model? If your business is struggling with only one or two specific challenges, such as operational inefficiency or brand erosion, then business model (re)design is overkill. Changing your business model carries significant risks. If you are pre-venture, then by definition you are at re(design). Similarly, if your organisation is facing multiple failure modes, then business model (re)design may be your best option. Business model re(design) starts with either problems or opportunities. Table 1 shows the symptoms that point towards business model re(design). In *The Business Model Book* we also discuss the symptoms commonly mistaken for business model failure.

Cellular Dynamics needed business model re(design). Despite being the world leader

in stem cell technology the company was having trouble raising the venture capital it needed. It was also struggling to prioritise across tools and therapeutics opportunities, which had significantly different risk-reward profiles. The executive team implemented a platform-based business model based on induced pluripotent stem cell technology. They simplified the organisational structure and prioritised manufacturing capabilities over therapeutics development. The business model re(design) led directly to \$30 million in new venture capital and being recognised by the *Wall Street Journal* as the most innovative company in the world. Less than five years later, Cellular Dynamics was bought by Fuji for \$307 million.

### (re)Design

Designing a great business model is not rocket science. Using the right tool at the right time, however can dramatically speed up the process and facilitate iterative testing. Creative spark and experience-based intuition will serve you well, but the right tool will convert all that cleverness into something that can be tested and implemented.

Maurya's "Lean Canvas" and Osterwalders "Business Model Canvas" are powerful, effective maps for building business models. But they are best used for early stage and growth ventures, respectively. What if you are still exploring opportunities in the ideation stage, whether as a new venture or existing business seeking rejuvenation?

The RTV-N model, which emerged from our interviews with entrepreneurs, is a great starting point for any business model analysis. And, when complete, it can easily feed into either the Lean or Business Model Canvas as you explore the opportunity in more depth.

RTV-N stands for Resources, Transactions, Value, and Narrative, as shown in Figure 2. You

No one really knows why some business models work and others fail. **That is precisely why you need to diagnose and test your business model before you implement it.** Equally important, you need to know when your business model must be updated and evolved.

can download a worksheet template for this model at [www.bizmodelbook.com](http://www.bizmodelbook.com).

RTV-N is powerful because it focuses directly on the key business model components. What specialised and hard to copy resources separate your venture from competitors? What are the transactions that link your venture to partners, customers and ecosystem participants? How is value created by resources and captured by transactions? At the heart of the business model, the narrative links all the elements together into a coherent story that resonates with stakeholders. In *The Business Model Book*, we provide step-by-step guidance to use this model, as well as the other canvases. The trick is to know which one will serve you best, based on your organisational stage and business model needs.

Professor Shane Farritor at The University of Nebraska developed MRail, a novel laser-based system to test rail deflection in real time to identify sections of railroad track that might fail and cause an expensive derailment. The RTV-N framework reveals that the value in the business model is not the equipment that does the measuring but the cumulative longitudinal data that tells the rail company where, across thousands of miles of track, to send

inspection crews. The coherent narrative describes a service, not a product at all! As the business model evolved, it also revealed that the right service provider would need to be an industry participant to facilitate the system's use on existing equipment. After combining good business model design with further advances in the product design, Farritor sold the technology to Harsco Rail. MRail remains the only vertical track deflection solution on the market.

### Test

If RTV-N shows that your business model is coherent, then it may be viable. But there is only one way to be sure. Test it.

Testing a business model is like prototyping. You need to put the logic behind your business model in front of stakeholders who can provide real-world feedback. The key is not whether your business model creates value in general, but whether the configuration of resources and transactions creates value for those stakeholders. That can include customers, supply chain partners, investors and customers. A sustainable business model does not only extract value from other industry participants; it generates entirely new value. Great business models make the pie bigger for all the stakeholders connected to it.

Depending on your resources and stage of development, you can conduct thought experiments, information tests and pilot tests. Using the RTV-N framework, a thought experiment can explore alternative resources, transactions and value creation mechanisms. Information tests seek to confirm key assumptions about the business model, such as whether key customer segments will adopt new technologies or products. Information tests are effective when the hypotheses can be addressed quickly with limited resources and the

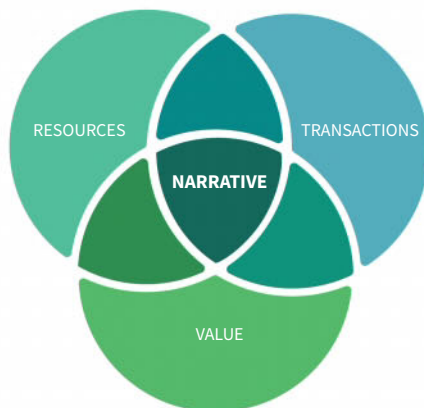
**A sustainable business model does not only extract value from other industry participants; it generates entirely new value.**

results will be meaningful to either (re) design or (re)deploy the business model. Pilot testing, the most powerful option, requires simulating organisational interactions with stakeholders and partners. Just putting the product in front of customers is not enough!

For example, Adam Sutcliffe's Orbel hand sanitizer was a significant innovation compared to wall-mounted or table-top dispensers. The patented design used rollerballs to dispense the gel sanitizer; health care workers could clip the Orbel to a pocket and then run one hand over the rollerball pad. The motion is the same that we use to wipe off our hands – the Orbel transforms a germ-transferring habit into a sanitising habit! When Sutcliffe tested product prototypes in a hospital, the nurses loved it so much they did not want to give the prototypes back. But Sutcliffe and the team he hired were less successful testing the business model. They tried to work through third-party distributors without clearly establishing whether the target segment was health care practitioners, health care facilities or consumers. Without business model testing, they were unable to generate a clear revenue model that accounted for distribution and sales processes. Although the Orbel *invention* won numerous awards and accolades for its potential to address serious health care challenges such as MRSA, the Orbel *business* model has not yet achieved its potential growth and success.

By contrast, FanDuel effectively pilot tested its business model into existence. After a failed social network venture,

FIGURE 2: THE RTV-N BUSINESS MODEL FRAMEWORK



## Maintaining a creative culture, more than any other factor, will determine whether your business model innovation process can adapt to change.

the team and its investors identified online fantasy sports as a high-potential opportunity. One of the founders, Tom Griffiths, described their early commercialisation efforts as an effort to put every possible kind of fantasy sports game on their site to see what users would actually join. FanDuel was simultaneously testing products and the business model by tracking data on customer choices and payments. The team generated dozens, hundreds of hypotheses about sports fan behaviour. For example, how much did team loyalty matter when fans built fantasy teams? Did they specifically want to bet against fans of rival teams? Which team and player statistics capture fan interest? FanDuel had the right team and timing, but it was business model testing that drove FanDuel revenues from less than \$5 million in 2012 to more than \$150 million in 2016.

### (re)Deploy

When your (new) business model is ready to go, all you can do is take the leap.

Business model innovation is emerging as the ultimate tool for disrupting industries and creating quantum leaps in value creation. Business model innovation can be incredibly rewarding. For example, Apple has captured roughly 25 percent market share of music industry revenues, despite being, for all intents and purposes, purely an intermediary. As we've reported previously

in this journal, the IBM Global CEO survey showed that outperforming firms were disproportionately business model innovators, rather than product or process innovators.

But business model change and innovation can be extremely risky. We have documented extensive cases of high performance firms with great teams who discovered that business model innovation simply does not always work.

Launching a business model requires investment and effort; but you are not committing to that business model forever. You cannot predict everything; your best bet is agility. To stay agile when you (re)deploy your business model, remember the wisdom of Henry David Thoreau: "Simplicity, simplicity, simplicity!"

Ensure that the effort is led by one key leader. Keep organisational structures clear and simple. Find ways to offload non-critical functions to other people and organisations. It is difficult enough to (re)Deploy the core business model; your managers and teams should not have their attention taken up with non-essential activities and issues.

Perhaps the greatest challenge when (re)deploying a business model is maintaining or adjusting culture to suit. Maintaining a creative culture, more than any other factor, will determine whether your business model innovation process can adapt to change.

The Development Bank of Singapore (DBS) discovered this early on when it made the





decision to transform itself the world's best digital bank. It was not enough to get immersed in cloud computing, fintech startups, or even understanding the emerging customer needs of fully digital consumers and businesses. DBS recognised that *everything* it did would have to revolve around innovation, team-based process and constant learning. The new business model was predicated on the belief that all banking would need to be re-centred around mobile utilisation, not just a few apps on top of the legacy infrastructure. CEO Sebastian Paredes described this as becoming a 20,000-person start-up. The company added “running an experiment” to every employee’s key performance indicator requirement. The company ran more than 1000 experiments around new products and customer experience in 2015. DBS proves that you do not have to be a startup to act like a startup; when you (re)deploy your business model, it is exactly what you want to do.

### Back to the business model cycle

The most challenging lesson about business model change and innovation, however, is that you never reach the end. The business model cycle, once completed, simply brings you right back to your starting point. No business model works forever.

The bad news: our research showed that prior success with change was not correlated with successful business model innovation. In other words, business model innovation may not improve with practice! We suspect that this is because executives have not found a way to codify and manage the non-intuitive leaps required for business model innovation.

Yet some firms have found a way: Apple disrupted both the music industry and the mobile phone industry in the space of five years. Return Path turned email marketing upside down with a sender whitelist and decertification of third-party content. Khan Academy pioneered free

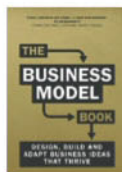
online mathematics lessons and now seeks to make any educational topic available to anyone in the world. In other words, the capabilities for continuous business model innovation are out there, embedded in firms that embraced innovation, creative culture, and an entrepreneurial approach to business models.

Industries will become globalised and competitive. The pace of technology-driven change will increase. Information and communication systems will become both more ubiquitous and more valuable. Opportunities will be identified sooner and exploited more quickly. The ventures that survive and thrive will be the ones that implement the right business model at the right time. **EBR**

### About the Authors



**Adam J. Bock** is currently a Lecturer at the University of Wisconsin-Madison. He is also a serial entrepreneur, financier and venture consultant. He co-founded four life science companies including Nerites Corporation and Stratatech and managed multiple angel investing networks, facilitating \$10 million of early stage investments. He is the co-author, with Gerry George, of *The Business Model Book* (2018), *Models of Opportunity* (2012), and *Inventing Entrepreneurs* (2009).



**Gerard George** is Dean and Lee Kong Chian Chair Professor of Innovation and Entrepreneurship at Lee Kong Chian School of Business at Singapore Management University. He joined SMU from Imperial College London where he was Deputy Dean of the Business School. He also held tenured positions at the London Business School and at the University of Wisconsin-Madison. He was awarded Fellowship of the City & Guilds of London Institute for his contribution to further education and research.



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# Releasing the POTENTIAL OF ALL

BY MARK ANDERSON

**How will you cultivate great leadership to drive superior performance? In this article, the author elaborates on the importance of unleashing the individual strengths of employees – which is a defining feature of a leadership that is truly outstanding.**

It's commonplace in discussions about leadership and management to place a strong emphasis on unlocking the potential of all colleagues, not just those identified as high-fliers. This is becoming seen as increasingly critical as we enter an era of unparalleled technological change which is likely to render many current jobs obsolete and create many new type of jobs not thought of today. Add to that the increasingly ageing population, bringing with it the practical and financial need to work longer, and we have an employment cocktail demanding the very best development of and utilisation of skills.

But it's not clear that many organisations are ready to meet this challenge. Too many rely on outdated approaches to so-called "talent management". Too often this is about categorising colleagues into pre-determined groups, at the apex of which are high-fliers destined for greater roles, increased responsibility and ascension up the hierarchy. I have written elsewhere about the difference between leadership and

management (*The Leadership Book*, FT Publishing, 2e 2013). Talent management which follows this kind of categorisation process – often in the name of identifying the "leaders of tomorrow" – is actually an example of management not leadership, because it focusses on the process more than the outcome.

The very best leadership happens when those in leadership roles (actually anyone with a responsibility for teams) recognise that they are like the conductor of an orchestra coaxing and inspiring the very best performances from all players. At the same time, they demonstrate the essential humility which acknowledges that each individual player has an expertise and skillset the leader themselves can never match. In this sense, the best leaders are jacks of all all trades but masters of none.

Great leadership therefore seeks to recognise the capability for excellence and personal development in all colleagues. It is blind to educational background, prior experience, current role, hierarchy and indeed many of the indicators which typically drive talent management. Above all else it is blind to making assumptions that anyone's current role and performance is a valid indicator of future capability and performance. It recognises that very frequently in organisations colleagues become straitjacketed by what they do. It

Each individual player has an expertise and skillset the leader themselves can never match. In this sense, the best leaders are jacks of all trades but masters of none.

also recognises that personal development isn't and shouldn't be about hierarchical progression.

This view intersects with what is often called the gig economy. Right now this is more often than not associated with zero-hours contracts and a fragility of employment. But let's also think about the gig economy as a liberation, a liberation from the constraints of conventional employment within corporates and a means for individuals to do what they do best, in the way and at the rate they want. It's no exaggeration to say that in the long run the corporate of one must be seen as valid as the corporate of many.

This is a demanding and radical agenda. It depends on some substantial changes in assumptions and approach:

- organisations must above all else recognise that they are *learning institutions* not recipients of colleagues who have learned elsewhere (whether at school, university or other employers)
- organisations must see their talent pool as internal and external, combining their own staff with others
- thus talent management ceases to be primarily an internal staff-only exercise but one which extends to all talent wherever it comes from
- organisation development focusses less on filling roles in a top-to-bottom structure but on assessing skills needs and how to meet them in a three-dimensional inside-and-out analysis
- personal development – and thus personal development plans – should therefore not be exclusively focussed on hierarchical analysis and promotion, rather it should be focussed on a keen understanding of colleagues' skills and how they can best be utilised
- traditional badges of achievement – usually titles associated with hierarchy – should be replaced by titles associated with skills acquisition, excellence and thought leadership
- promotion should be as likely lateral as upwards, and pay grades should be wholly separated from reporting lines

For even some of this to be realised there needs to be a concomitant and radical change to prevailing company cultures. Above all else command and control structures which rely heavily on traditional hierarchies are likely to have to be replaced by more a project-based, transient and fluid pooling of skills. The tolerated level of risk will have to rise to enable entrepreneurship and personal skills maximisation to flourish. For many three year plans will have to be replaced by overarching goals implemented by a relentless series of sprints.

Changes on this scale will in turn demand fresh approaches from those who assume longer-term or

short-term project-based leadership roles. The best leaders in these circumstances will:


- assume the mantle of a conductor of frequently differently formed ensembles
- always recognise that they are supported by colleagues who have stronger skills bases in certain areas than they do (and not just in obvious functional specialisms)
- always see every colleague as an individual with a unique perspective and contribution
- associate leadership with **enablement** not power
- always prioritise the good to be developed rather than the poor to be contained

This is very different: **you lead from the middle not the front.**

There is then an extraordinary rich opportunity for the individual, one which I would hope can lead to an efflorescence of skills development and an increased sense of personal reward. In this – maybe idealistic but nonetheless realisable – scenario, the individual is:

- assessed for who they are not how they shape up against a predetermined role
- placed in a skills development framework not a manager-led hierarchy
- promoted on the basis of skills achievements in a manner which is not linked to hierarchy and traditional pay grades
- encouraged to be a skills leader first and hierarchy leader second
- employed in a learning institution where they simultaneously teach and learn

In this content who precisely employs you is not really an issue. Sensible government policy would equalise benefits and obligations across corporate and self employment.

In the end, making this happen is about immense cultural change because it would demand changes to almost all assumptions and built in working practices we typically find today. But in the knowledge economy where power lies in what you know, and the critical thinking skills you deploy to apply the wisdom of your knowledge, only the flourishing of the individual – and indeed teams of individuals – will drive superior performance. 

#### About the Author






**Mark Anderson** is Chief Executive and Vice Chair of MACAT International, and Chair of London Metropolitan University, Bibliotech and Created Education. From 2014-2016 he was MD of Pearson UK. He is a Cambridge Fellow in Science & Policy and the author of *The Leadership Book* (FT Publishing, 2e, 2013).

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