DESIGN; A BUSINESS CASE

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From design excellence to design as core competency

In all walks of life, bringing ideas into life can be a barrier. Good intentions often stay exactly that; intentions, and many great ideas never leave the minds of their originators, or the organizations or teams in which they were incubated. This lack of executional power or implementation abilities is potentially fatal if it occurs in fast moving environments, where not only thinking about change, but also actually bringing ideas to market is crucial for survival.

Increasingly, organizational analysts identify failure of implementation, innovation failure as the cause of many organizations' inability to achieve the intended benefits of the innovations, they adopt. [1]

The researchers, Klein and Sorra, identified the determining factors for an organization's success rate at implementing innovation and change to be a climate characterized by the right skills, the right incentives and disincentives, and the absence of obstacles for implementation – in combination with a commitment from the guardians of the organizational values. In other words, appropriate management skills need to co-exist with leadership commitment to guarantee successful implementation. Likewise, to truly benefit from design, the *design* itself, the management of design, design thinking and leadership commitment are all needed.

Hence, our reasoning and model entail that

Design excellence = *great design + design management + design thinking + leadership*

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[1] Klein and Sorra (1996): *The Challenge of Innovation Implementation* – The Academy of Management Review, Vol. 21, No. 4, October 1996, pp 1055-1080.

Fig. 1: Valade-Amland and Borja de Mozota (2018): Design Excellence loop

While design, design management and design thinking have all been subject to extensive research and scholarly attention, design excellence primarily serves as a "label" used either award solutions, deemed to be excellent within a range of different categories of products and services and assessed according to some pre-defined criteria.

We find the term of Design Excellence interesting and appropriate to describe situations, where design thinking exists as a premise and design management has been applied professionally and successfully, and adapted to the challenge or process in question.

So, regardless of sector, industry or organisational set-up, an increasing number of real-life experiences and studies point in the direction of an inescapable connectedness between design, design management and design thinking, as well as a clear cause-effect relation or consequence entailing from the extent to which and how design is embraced by an organisation.

Our assumption is that design – having been around since the beginning of human civilization – at one point in time, as design became recognised as a professional, structured and replicable activity, fostered the need for a specific variety of project management, a discipline that already existed for ages, but was framed and refined from the late 50'es and onwards.[2]

This point in time came emerged in the late seventies and found its form in the eighties, where design management gradually captured its own space and identity in the design and design research communities. Design management started as a clearly defined approach to managing design projects, but slowly came to encompass the art of building a "design culture" within an organisation. Where this dimension of design management proved successful, the somewhat more strategic and often c-level engagement in design at on point had become so massive in terms of interest both from academia and the boardrooms around the world that it was considered worthy of being "rebranded" as design thinking. And, where design thinking reigns, the use of design and the development of the mechanisms need to manage and benefit fully from design, are regarded as just as instrumental building blocks of corporate or organisational strategies as are finances, human resources, investor relations and public affairs.

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[2] Seymour (2014): *The History of Project Management* - International Journal of Management & Information Systems – Third Fourth 2014 Volume 18, Number 4

This could – for the sake of discussion – be compared to the levels to which, the three levels often report, or in which they are vested. Design has traditionally and most often embodied products and services, while design management plays a distinct role in enabling design and designers to do so, in the form of brand guardianship and strategic gate keeping. Finally, design thinking provides for the inspiration and leadership need for the organisation to rest assured that they have the mandate to fully exploit design's potential, expressed in the form of empowerment.

Fig. 2: Valade-Amland and Borja de Mozota (2018): Products, brand & organization loop

However, to make sure that we do not add to the confusion, but rather cast some light over the field, we would like to contextualize the four terms in a manner, which underpins our claim; respectively design, design management, design thinking (or design leadership) and design excellence.

Our choice of approach is to latch the four concepts up onto the aforementioned Montréal Design Declaration [3], as it is the closest, we've ever come to consensus around the meaning, role and value of design in the international design community;

- *Design is the application of intent: the process through which we create the material, spatial, visual and experiential environments in a world made ever more malleable by advances in technology and materials, and increasingly vulnerable to the effects of unleashed global development.*
- *Design is a driver of innovation and competition, growth and development, efficiency and prosperity.*
- *Design is an agent for sustainable solutions created for people and supporting the planet on which we rely.*
- *Design expresses culture. Designers have a particularly potent role in making, protecting, nourishing, enhancing and celebrating cultural heritage and diversity in the face of globalization.*
- *Design adds value to technology. Through consideration of human perspective and interface, and by focusing on individual interaction first, design bridges technology with human needs.*
- *Design facilitates change.*
- *Design enables all aspects of society, public and private, governmental and non-governmental, civil society and individual citizen, to transition through change (i.e. austerity, demographic changes, shifts in services) to deliver a better quality of life for all citizens.*

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[3] *Montréal Design Declaration* – issued at the 2017 World Design Summit

- *Design introduces intelligence to cities as a foundation for better communications, improved environments, enhanced quality of life and more prosperous local communities.*
- *Design addresses resiliency and manages risk through comprehensive research, robust methodology, prototyping and consideration of life-cycle consequences.*
- *Design fosters development of SME's in general and the creative industries in particular.*
- *Designers are professionals, who, by education, outlook and experience, are capable of developing new, interdisciplinary solutions to improve quality of life.*

Strategic intent and design governance

Delivering on this over-riding and somehow all-encompassing ambition of most organisations around the world first of all requires the existence of a clear and unambiguous intent, which is indisputably a leadership responsibility; design leadership, if you wish. This, fundamentally spoken, materializes in an informed mandate from the very top of the organisation to pursue development goals by applying and integrating design methodologies, design processes, design principles and design management in all relevant strategies and operations. This is how design thinking inspires and empowers.

Assuming that such an intent exists and is known and adopted throughout the organisation, exploring and assessing the relevance of new technologies and materials, as well as making sure that their application supports - not only the organisation's own intent and delivery on and beyond the expectations of the user, but also the aspirations of the organisation vis-à-vis the concerns in the sustainability development goals [4] as an integrated part of the design process. Succeeding at exploiting rapid technological developments and at turning data into valuable market intelligence to the benefit of one's own competitive advantage, yet still reducing one's footprint and complying with or aiming at transcending best practices with regard to governance and responsibility requires true design leadership throughout the organization – hereunder also design, as well as professionalism and decision making on strategic, tactical and operational levels.

The role of design leadership and design management in a context of innovation was quite effectively spelled out in an article already back in 2005, however without using the term design thinking;

Creating an environment in which challenging the status quo is actively encouraged is at the heart of the innovation process. This process needs clear, firm leadership, and it's the design leader's responsibility to

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[4] United Nations (2015): *Transforming our world: the 2030 Agenda for Sustainable Development* - Resolution 70/1 adopted by the General Assembly on 25 September 2015

do just that – to make innovation part of the business' DNA. It is then the job of the design manager to help realize the innovative thinking. [5]

Design's significance as both a driver and catalyst of innovation, have increasingly been recognized by the world community;

The OECD/NESTI project has identified, through available and experimental measures and analysis, considerable evidence for the integrative role of design and designers between creative development efforts, the practice of innovation in firms, and the implementation of innovations in the marketplace. It is not only an activity carried out by specialized personnel in specific settings but is also a process that can systematically influence most of the activities usually contributing to business innovation projects. [6]

The reason for the role of design as a tool for innovation being more widely accepted might be its historical connotation to linking design to the invention and development of new physical products - thus also the key pillar in the innovation discourse, for centuries. However, studies show that design is exactly as valuable for companies, where the core activity is intangible services – as opposed to tangible products – and for companies, where products and services are of equal importance. [7]

In line with our discussion about design and the overall intent, sustainable solutions require endorsement from the very top of the organisation as much as it requires knowledge about materials and processes and value chains in the parts of the organization dedicated to continuous improvement and innovation.
 No chief executive officer – or a least very few – have the time and background needed to stay on top of new polymers or composites, sintering techniques or 3D printing processes, additive technologies or intelligent materials. Not only because these are all demanding areas of science and expertise, but because the speed of which such new technologies are developed and improved is mind-blowing. And, of course, because managing a medium or large company implies equally demanding expertise within other areas of business development and management.

Having said that, few designers are also dressed to stay on top of these developments at large, but a pivotal part of design practise is to research and test, experiment with and consider potentially relevant and useful new materials and technologies to enhance existing or develop new competitive products or solutions,

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[5] Turner et al. (2005): *Insights on Innovation* – Design Management Review, Volume 16, No. 2, Spring 2005, pp. 16-22

[6] Galindo-Rueda and Millot (2015): *Measuring Design and its Role in Innovation*, OECD Science, Technology and Industry Working Papers, 2015/01, OECD Publishing.

[7] Candi (2005): *Design as an Element of Innovation: Evaluating Design Emphasis and Focus in New Technology Firms* – School of Business, University of Reykjavik

including the considerations need to minimize their footprint throughout the entire life cycle, and including empathy to user needs and preferences. This requires not only an interest among design practitioners and endorsement from the top, but a clear strategy for how design is used from operation to operation or department-to-department, or in other words design management.

In his book, "In the Bubble", the esteemed – however not entirely uncontroversial – design thinker, John Thackara lists what he refers to as "design mindfulness", driven by sensitivity to context, to relationships and to consequences; [8]

- *Think about the consequences of design actions and pay close attention to the natural, industrial and cultural systems that are the context of design actions*
- *Consider material and energy flows in all designed systems*
- *Give priority to human agency and not treat humans as a 'factor' in some bigger picture*
- *Deliver value to people – not deliver people to systems*
- *Treat 'content' as something we do, not something we are sold*
- *Treat place, time and cultural difference as positive values, not as obstacles*
- *Focus on services, not on things, and refrain from flooding the world with pointless devices*

Not only do most designers already demonstrate the sensitivity, Thackara calls for. Some of the world's most successful companies are guided by similar principles.

In what it creates, for whom it creates, in where and how it creates, and in relationships with consumers and communities, an organization's design team can help lead Corporate Social Responsibility. [9]

As the design profession has become more and more recognized as research and knowledge based, a paradigm shift has taken place, from being project-oriented to being predominantly process-oriented. Designers are more than just problem solvers; they are actors of the dynamics of knowledge building in organizations through research:

The activity of design consists in the transformation of an input representation into an output representation. In an activity that functions by way of representations, knowledge plays a central role. Designing is a cognitive activity.[10]

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[8] Thackara (2005): *In the Bubble – Designing in a Complex World* – MIT Press, Cambridge

[9] Koo and Cooper (2011): *Managing Corporate Social Responsibility through Design* - DMI Review, Volume 22, Number 1, 2011

[10] Visser (2006): *The Cognitive Artifacts of Designing* – Routledge, NY

Pralahad and Hamel argue that information-based invisible assets such as technology, customer trust, brand image, corporate culture and management skills are the real resources of competitive advantage, because they are difficult and time consuming to accumulate, and can be used in multiple ways simultaneously. To design managers, it means assessing design value as a resource that is rare, inimitable, and non-substitutable; it also means managing design with the long-term perspective of sustained competitive advantage rather than a short-term view of project management. [11]

This new evidence of design as a resource and core competency comes from another theory of strategy, known as the Resource Based View (RBV). Could this theory explain the value of design thinking as the value of a set of specific key skills embedded in design thinking? The Resource Based View of strategy claims that the development of valuable, rare, difficult to imitate and non-substitutable resources results in sustained superior performance. This view emphasizes the importance of invisible assets to build competitive advantage, as a core competency. It is like giving value to the way you embed design in the organization or what is also called a "design you can't see" strategy.
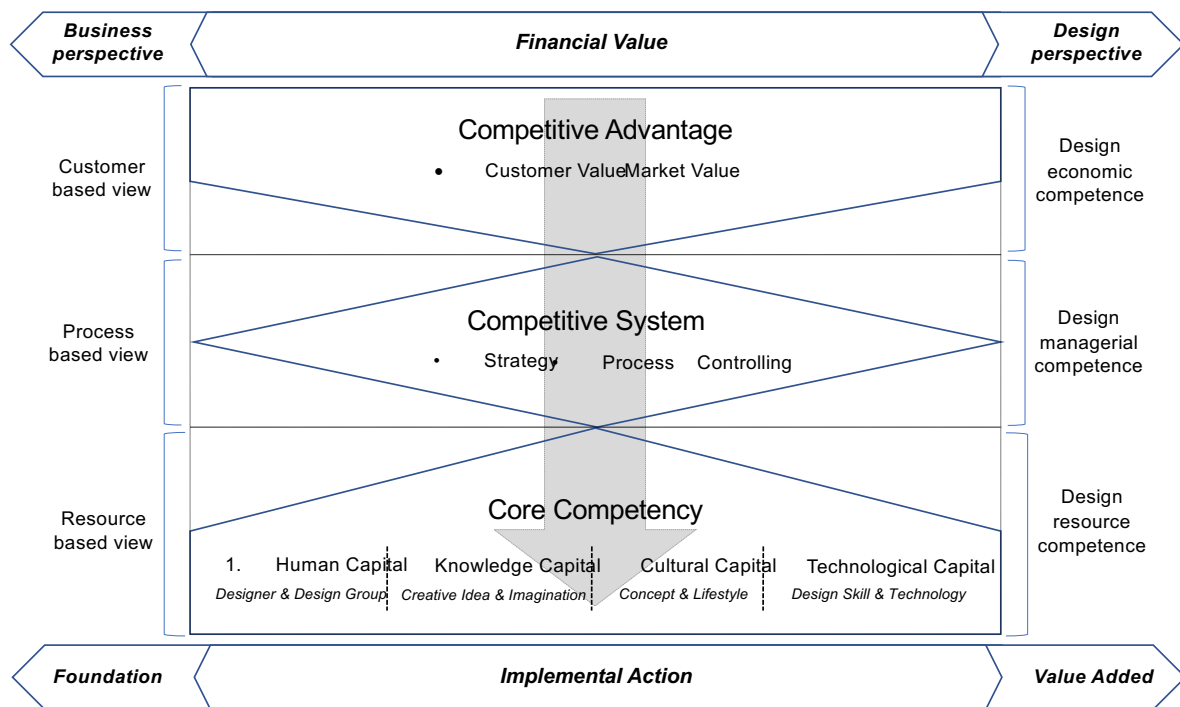
Fig. 3: Borja de Mozota & Kim (2009): Design competitive advantage from strategy as "fit " to design as "core competency "

The design industry is part of the creative industries, whose value is now studied and included in national statistics of economic performance. Recently, studies from various sources focus on the business value of

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[11] Borja de Mozota (2011): *Handbook of Design Management Research, Chapter 18: Design Strategic Value Revisited, pp. 278-293*

design. The Mc Kinsey Quaterly (Oct 2018) report insists on the value of on measuring and driving design performance, stating that:

Design is more than a feeling; it is a CEO-level priority for growth and long-term performance "

Behind this trend towards widespread acknowledgement of design indicators, there is an emerging understanding that the value of design for the portfolio can be measured on different levels beyond seeing design as "competitive advantage" that is immediately visible in the market – what has for many years been labelled design as differentiator.

In summary, when pleading for strategic design, design managers, designers and design educators should explain what their definition of strategy is, whether they refer to strategy as an external competitive advantage or strategy as a resource and internal sustained advantage. Additionally, if they want to adopt a prospective and contemporary view of design strategy they may turn their vision far from designing artefacts to rather designing the organization resources and its knowledge capital. [12]

The buzz of design thinking is the buzz of a adopting empathy in user centred organizations, and the recognition of the empathic skills designers as fundamental to help the entire organization to run their activities closer to the needs of the market and their consumers. And, it is true that innovation success and performance in organizations are based on the ability of building a consumer centric culture.

As a matter of fact, the present digital transformation is a cultural transformation demanding designer skills, whether focusing on managers learning to think more like designers or on giving the design functions more autonomy to drive the cultural change.

The business value of design is well documented. In a European study from 2002, the CEO's of 33 companies, which had all received design awards in their own countries, were asked to classify 21 variables of where design creates value:

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[12] Borja de Mozota & Kim (2009): *From design as fit to design as resource*, DMI review 20/2 pages 66-76

6 = fundamental, 5 = very important, 4 = important	Mean	Dispersion
1. Design creates a competitive advantage	5,39	0,55
2. Design is a core competency	5,12	1,04
3. Design contributes significantly to benefits perceived by consumers	5,00	0,97
4. Design changes the spirit of the firm that becomes more innovative	4,94	0,86
5. Design develops exports	4,88	1,15
6. Design increases market share	4,75	0,94
7. Design allows the company to sell at a higher price	4,69	1,16
8. Design improves co-ordination between marketing and R&D functions	4,68	1,07
9. Design is a know-how that transforms the activity processes	4,64	1,12
10. Design develops customer care in the innovation policy	4,60	1,25
11. Design generates technology transfers	4,22	1,47
12. Design gives access to a wide variety of markets	4,19	1,55
13. Design accelerates the launch of new products	4,07	1,28
14. Design improves co-ordination between production and marketing	4,00	1,16
15. Design develops project management of innovation	3,93	1,20
16. Design creates a new market	3,90	1,72
17. Design improves the circulation of information in innovation	3,80	1,34
18. Design means higher margins or costs reduction	3,80	1,31
19. Design is difficult to imitate by competitors	3,76	1,43
20. Design changes relationships with suppliers	3,70	1,23
21. Design improves co-operation between agents	3,64	1,18

Fig. 4: Borja de Mozota (2002): Design and competitive edge, Academic Review - Design Management Journal 2 reprint 2011 Handbook Design Management, Research Berg

A more recent report shows similar results, confirming that design:

- increases speed to market

- extends market reach

- drives engagement and loyalty

- enhances internal capabilities

- visionary transformation [13]

When discussing the strategic positioning of design in a company, the choice between design as a competitive advantage - which is "design you can see" and "design strategy as fit" – which is design as a sustained competitive advantage, has to be made. While the first kind is prone to being copied, design as a core competency is difficult to imitate by your competitors. During strategic audits and SWOT analyses, organizations use models for assessing their external environment, such as Porter's Five Forces or PESTEL, and for internal audits, a BCG matrix, a value chain model or a Business Model Canvas is often used. The Resource Based View of strategy brings another model (VRIO) to the table, building upon Barney's definition of core competency and sustained competitive advantage; A resource that is valuable, rare,

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[13] FROG (2017): *The Business Value of Design* – FROG Insights

difficult to imitate and non-substitutable. [14] The question is how to recognize and organize the management of design so as to ensure that it is rare and difficult to imitate, hence improving the organization's knowledge capital.
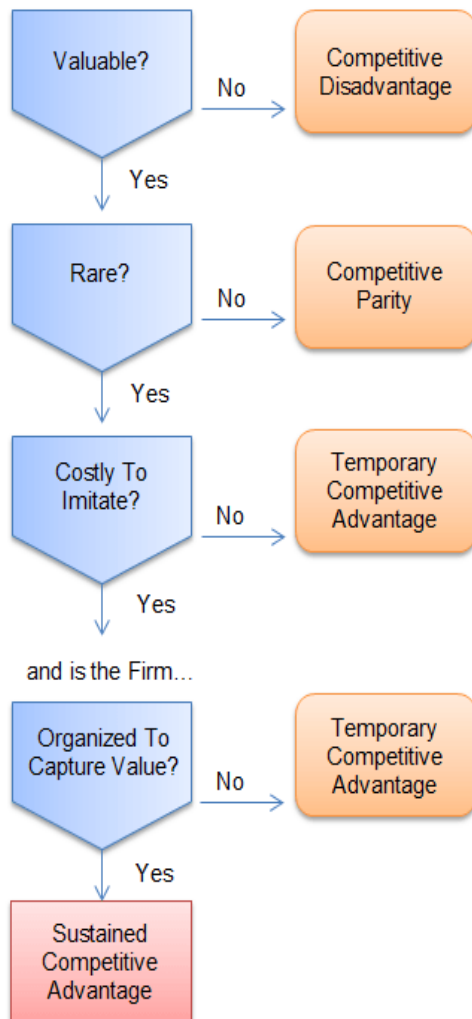
Is the Resource or Capability...

Fig 5: THE VRIO Model - Barney RBV Strategy

One key player in building such evidence of service design impact on the governance of organizations is Christian Bason, who, in one of his latest books set out to explore amongst other how working with design affected public sector managers.

Managers who use design approaches seem inclined toward governance that, in comparison to historical public management approaches are more:

- *Relational, in terms of a distinctly human and often longer-term perspective on the role of the public organization and its impact on the outside world; often this implies a reframing of the kind of value the organization is supposed to bring to citizens and society;*

- *Networked, understood as a model of governance that actively considers and includes a broad variety of societal actors to achieve public outcomes, including civic actors not often considered in past governance models;*

- *Interactive, exhibiting increased awareness and more explicit use of (physical and virtual) artifacts in mediating purposeful interactions between the organization and citizens and other users and stakeholders; and finally, managers who use design approaches are more*

- *Reflective, which is to say driven by a more qualitative, emphatic, subjective, and complex understanding of the organization's ability to enact change.* [15]

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[14] Barney (1991): *Firm resources and sustained competitive advantage*, from Journal of Management17(1) pp.99-120, Thousand Oaks, Calif.: Sage

[15] Bason (2017): *Leading Public Design: How managers engage with design to transform public governance* - Copenhagen Business School

Capacity building in the organization

So, in order to develop a business context that is favourable for design excellence, organizations consider designers' skills as more significant than the value of designers' tangible output.

Knowledge	Attitude Values	Applied skills	Understanding skills
Design process	*Risk-taking* *Managing uncertainty*	Practical design skills *Prototyping* Drawing ability	*Observation*
Material	Originality	Creative techniques Lateral thinking	Researching
Market	Anticipating future trends Forward thinking	Commercial skills	Logical thinking *Integrative thinking*
Technology	Proactive in developing relationships	Communication skills (Presentation and report writing)	Analyzing Prioritizing Structuring problems
User awareness	Open-minded	Computer skills	*Scenario building Narrative*
Culture	Understanding multidisciplinary context	Design for manufacture	Synthesizing *Holistic thinking*
Aesthetic awareness	*Focusing on usability*	Project management	Intuitive thinking & action
Human factors	Attention to detail	Optimization	Consumer and stakeholder needs
Manufacturing process	*Learning from errors*	*Team work*	*Human empathy*

Fig 6: Borja de Mozota: Designers skills in organizations; The Value of Designers' Skills in the 21st Century, Design Research Society, Paris Symposium on Education, May 2011

Capacity building for cultural differentiation

Globalization is a fact, and to some extent, certain elements contributing to the variety and diversity one would expect when crossing borders or landing in some remote destination are slowly being wiped out. And yet, regardless of how 'global' we all tend to see ourselves, we respond inherently in different ways when faced with the reality of a culture, to which we are not native. Hence, acknowledging and acting on these intrinsic, culturally rooted, differences needs to be, and is increasingly, reflected in design practice.

There is an emerging interest in the impact of cultural dimensions on the experience and interaction between people and products. Globalization has led to a situation in which product design teams from one culture or context often have to develop a product, which will be used in a (totally) other cultural environment. Globalization also confronts companies to decide between 'global' or 'local' featured design of products. As a result, it has become essential for the industrial design education and profession to take the context and culture of the end-users more serious and to look for consequences regarding industrial design. [16]

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[16] Diehl and Christiaans (2006): *Globalization and Cross-Cultural Product Design* – Proceedings from International Design Conference - Design 2006, Dubrovnik - Croatia, May 15 - 18, 2006.

Capacity building in strategic design as sensemaking

This brings us back to the concept of strategic design as sensemaking ; not only in the sense that Karl Weick used the term; making sense of our surroundings, of complexity and of the changes taking place around us – or Christian Madsbjerg's large scale making sense of a situation or a culture or a world.[17] Design is also a pivotal component in making sense of products that we rely on every day, of information overload in most human-made environments and of instructions and of day-to-day digital and real-life interaction.

And admittedly not always consistently observed, John Maeda's ten laws of simplicity in many ways represent the key to why design plays such an important role in building bridges between human beings and technology; [18]

1. *Reduce;* *The simplest way to achieve simplicity is through thoughtful reduction.*
2. *Organize;* *Organization makes a system of many appear fewer.*
3. *Time;* *Savings in time feel like simplicity.*
4. *Learn;* *Knowledge makes everything simpler.*
5. *Dióerences;* *Simplicity and complexity need each other.*
6. *Context;* *What lies in the periphery of simplicity is definitely not peripheral.*
7. *Emotion;* *More emotions are better than less.*
8. *Trust;* *In simplicity we trust.*
9. *Failure;* *Some things can never be made simple.*
10. *The one;* *Simplicity is about subtracting the obvious and adding the meaningful.*

By innately striving for simplicity where it is appropriate and possible, designers contribute to bridging technology with human needs, thus adding value to technology and in turn making technology sensible and more accessible to people, who would otherwise be prohibited from enjoying the advantages of same.

Capacity building for behavioural change

Change is, as already discussed, not always perceived as a good. However, change is a given – the alternative is stagnation and regress. Hence, design cannot necessarily be attributed or held responsible for change, but it plays a vital role in making it easier and less frightening. Moreover, we know that change rarely comes by itself; it has to be started by something or someone, as observed by the authors of the bestseller "Switch";

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[17] Madsbjerg (2017): *Sensemaking; What Makes Human Intelligence Essential in the Age of the Algorithm*, Little Brown Book Group

[18] Maeda (2006): *The Laws of Simplicity* – MIT Press, Boston

Ultimately, all change efforts boil down to the same mission: Can you get people to start behaving in a new way? [19]

Designers are rarely the ones, who start behaving differently, but more often than we think of, the works of designers enable people to do so; design enables people to behave in a different way. Such changes can be prompted by user-friendly products, technologies and digital applications, enabling concepts like the sharing economy to flourish and home-based work to be a real alternative to spending time on commuting to an office, where exactly the same amount and quality of work would be delivered. They can also be designed as subtle incentives to do something different or differently, also often referred to as choice architecture or nudging.[20] Finally, people's behaviour is influenced by communication design – from visual effects and ads to way finding and information design, by the design of physical environments and urban design, and by service design, guiding our behaviour vis-á-vis the providers of private or public sector services. This knowledge has been systematically exploited as a competitive tool for decades – even centuries – but has also increasingly been discovered by the public sectors of this world, not necessarily as a competitive tool as such, but as a proven, effective means to provide better or smarter services at a lower cost.

One of the areas where service design in particular has resonated surprisingly fast and well is within the public health and care sectors. For a long time, service design was almost synonymous with public sector design, until the private sector decided to be more overt about their use of and dependence on design. One of the pioneering suppliers of service design, LiveWork, calls it "humanising of services".

In order to innovate the system of public services there is a need to step outside the box, get deep insights into the system from different perspectives, to radically reframe the problem, expand the system, ideate with relevant stakeholders and to develop prototypes that can be tested and refined: there is a proven need for service design. And these new ways of approaching challenges using the processes and methods of service design have to be brought inside the organisation, so training and capacity building are crucial to enable public sector organisations to re-invent themselves and their relationship to their citizens. [21]

While the public sector in some countries have thrown themselves whole-heartedly into service design and user-centred innovation, until now the endeavours have been fairly explorative, as hard evidence of design's appropriateness vis-á-vis the challenges faced by the public sector has been scarce. Moreover, the enthusiasm for design has not always enjoyed the company of design management expertise, sometimes reducing the measurable effects of the sector's endeavours.

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[19] Heath and Heath (2010): *Switch – How to Change Things When Change is Hard* – Thorndike Press, New York

[20] Thaler and Sunstein (2008): *Nudge – Improvng Decisions about Health, Wealth and Happiness* – Penguin

[21] Service Design Network / Netherlands Enterprise Agency (2016): *Service Design Impact Report: Public Sector* – Cologne, Germany

Hence, much speaks to the advantage of design as a more holistic approach to the development of public services than other, more traditional approaches, emphasizing the experienced and long-term qualitative value rather than a shorter-term, single bottom line cost-benefit equation.

Design ability for systemic thinking

Another factor, which adds to the rationale is the degree of complexity and need for systemic thinking.

The more we study the major problems of our time, the more we come to realise that they cannot be understood in isolation. They are systemic problems, which means that they are interconnected and interdependent. [22]

One can design an individual artefact in its own right, without depending on or assessing its connectedness to other products or contexts, even though a fundamental understanding of the context in which, and by whom the object will be used in most cases will enhance the overall assessment of the design object. Services are intrinsically more dependent on the context in which they will be experienced, and organisational design has a clear systemic element per se. Design management also exists in an environment of determining factors, thus to a certain extent influenced by and clearly benefitting from systemic thinking, while design thinking at its very core is systemic by nature.

Whether a situation will benefit from systemic thinking can be tested quite simply by asking 1) if it consists of a whole, which is made up of any number of identifiable elements, 2) if these elements are interconnected in a way, which means that intervening with one element also effects on one or several of the other elements and/or on the whole, and 3) if there are multiple, non-linear connections and feedback systems between the elements. Actually applying systems thinking starts with 1) recognising interconnectedness, 2) identifying and understanding feedback, 3) understanding system structure, 4) differentiating types of stocks, flows and variables, 5) identifying and understanding non-linear relationships, 6) understanding dynamic behaviour, 7) reducing complexity by modelling systems conceptually, and 8) understanding systems at different scales. The effect of applying systems thinking is improvement of the capability to identify and understand systems, predicting their behaviours, and devising modifications to them in order to produce desired effects. [23]

As such, there is an obvious kinship between systemic problems and wicked problems, which we discussed briefly at the very beginning of this series of articles.

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[22] Capra (1996): *The Web of Life: A New Synthesis of Mind and Matter*, Flamingo, London.

[23] Arnold (2015): *A Definition of Systems Thinking: A Systems Approach,* 2015 Conference on Systems Engineering Research

Design is increasingly involved in the discourse around so-called "wicked" problems – either because we are complicit in their creation or drawn to the complexity of design opportunity that surrounds them. These are the Lernaean Hydrae of design challenges – for every tangible facet of the problem we address an increasingly complex web of both tangible and intangible problems grows in its place. The potential contexts of design action within these wicked problems are dynamic, characterized by complex interdependencies, and difficult to identify.

This bridge is supported by four basic assertions about the intrinsic relation of contemporary design practice to systems thinking;

Assertion #1: One cannot design sustainably outside the space of systems.
Assertion #2: One cannot design empathically outside the space of systems.
Assertion #3: One cannot innovate outside the space of systems.
Assertion #4: One cannot teach design for this century outside of the space of systems. [24]

Don Norman, hence, was only partially right in his assumption that we are faced with a fork in the road with two different possible futures for design: 1) A craft and practice; 2) A mode of thinking. While it is true that a substantial part of the design stories that we encounter today seem to deal with either one or the other, we also see design following a third future, embracing both design as a craft and practice, as well as design as a mode of thinking – and what bridges the two is design management. This future is where design creates the uttermost value. The need for design management to truly benefit from design as a representation; designed objects and services, has already been demonstrated [25], while it is still an assumption on our part that design excellence is only achieved where the entire palette of design effectiveness is brought into play to empower, enable and embody.

Designers' skills as driver of management value

It would be odd if others were better at delivering design as we traditionally know it than people, who trained to become professional design practitioners; the embodiment of strategies into products and services with due concern for the needs of people, organisations and the future – for people, profit and planet, vested in their deep understanding of materials and functionality, of user experience and of beauty. Even though amateurs and even professionals of inferior quality will always occupy a certain space in all markets, the acknowledgement of professional designers and their contribution to both our quality of life and to our economies seems to be rather firmly rooted.

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[24] Beirne (2014): *Wicked design 101 - Teaching to the complexity of our times,* Relating Systems Thinking and Design 2014 working paper

[25] Fernández-Mesa, Alegre-Vidal, Chiva-Gómez & Gutiérrez-Gracia (2012): *Design Management Capability: Its mediating Role between Organizational Learning Capability and Innovation Performance in SMEs*

Design as a highly complex and sophisticated skill. It is not a mystical ability given only to those with recondite powers, but a skill, which, for many, must be learnt and practiced rather like the playing of a sport or a musical instrument. [26]

So, how are designers' skills important for business? In his recent work, Kamil Michelswki classified five distinctive aspects of design as a professional culture: [27]

Embracing uncertainty and ambiguity: *Designers know that when it comes to creating something completely new and original, they are no guarantee of success. They realise and accept that a really creative process is often discontinuous and messy. This allows them to change the received wisdom with conviction and fearlessness. It is not difficult to see how this attitude may be a good basis for coming up with breakthrough ideas and conviction.*

Engaging deep empathy: *Using true empathy requires courage, honesty and abandoning one's mental models. Designers treat these consumers as real human beings and not simply as management abstraction.*

Embracing the power of the five senses: *Designers recognize that two senses, namely sight and hearing, are often not enough to create something that captivates people on a deep, visceral level. Their attitude towards using their sense of aesthetics is honest and open. They are happy to use apparent complexity to create surprise and delight.*

Playfully bringing things to life: *In order to create an innovative process and dialogue, designers believe in the power of playfulness, humour and a healthy dose of subversion. They often use the cloak of creativity and apparent silliness, projected into them by other professions, to ask some profound questions and challenge entrenched ways of doing things. Creatively manifesting potential products, services and future scenarios as quickly is effectively their way of being.*

Creating new meaning from complexity: *At the heart of designers' ways of doing things is the willingness to engage and to reconcile multiple, often contradictory, points of view and sources of information in order to come up with an entirely new way of thinking about something. Strategy is one thing but turning all the disparate elements into a coherent and delightful whole is something else entirely.*

Designers' skills therefore impact organisations by spreading their values and ways of doing things. Their connections to the professional group closest to their own, namely marketers, can potentially be detrimental to the way in which designers and design attitude are seen in organizations. The power balance is levelling out, but power still predominantly rests with the marketers, once again citing Michlewski;

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[26] Lawson (2005): *How Designers Think: The Design Process Demystified* – Elsevier Architectural Press, London

[27] Michlewski (2015): *Design Attitude* - Gower 2015, London

Designers are the invaders of the corporate world whilst marketers are the natives at the strategic level.

This design management hybrid character requires the understanding of design processes, but also of project and process management. Furthermore, there are various levels of design management; operational, functional and strategic – for which different skills and professional profiles are needed. [28]

We have seen designers with a flair for management developing into first class representatives of all forms of design management, just as we have seen equivalent design managers coming from management careers and business schools. Thus, while there is no unambiguous road towards a career as design manager, there might be another, subtler prerequisite. As a design manager, one needs to constantly negotiate between the creative aspirations of the designer or design team on one hand and the limitations laid out in the design brief, the expectations form the client organisation, whether internal or external, and the changing priorities and constant competition for a space in the minds of the senior management on the other. And, one has to love every bit of it, which narrows the field of talented design managers significantly.

The agents of the more strategic approach to design management in an organisation hold hands with its conveyors of design thinking, and as previously argued, design thinking resides in a deeply rooted understanding of the value of design in all its forms and shapes. A designer or design team, as well as any design manager might be the overt more champion of design thinking in an organisation, but for design thinking to truly add any value to an organisation, it needs to be firmly rooted in the senior management and filter down throughout the entire organism. Thus, design thinking – as opposed to design and design management – is not a function but a doctrine, and as such no less than a credendum to which the entire organisation and all its parts needs to abide by.

Strategic designers role for the future agents for change

Beyond the common understanding of design contributing to human centred organizations, Heather Fraser considers three gears for business design [29], claiming that;

Business design is an exercise in agility: emotionally tactically and cognitively
- empathy and deep human understanding
- concept visualization for holistic solutions that better meet the needs of your customers and other stakeholders
- a strategy to deliver and scale the idea process to refocus your resources in a more effective way

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[28] Borja de Mozota (2003): *Design Management – Using Design to Build Brand Value and Corporate Innovation* - DMI /Allworth

[29] Fraser (2019): Design Works: *A guide to Creating and Sustaining Value through Business design* - Rotman 2019

Along the same lines of rationale, a recent book discussing the connections between designers' skills and performance, introduces the idea of seven role models for designers in organizations:

The seven roles that designers can adhere to, to drive change in organizations are as;

- *Cultural catalyst*
- *Framework maker*
- *Humaniser*
- *Power broker*
- *Friendly challenger*
- *Technology enabler Community builder* [30]

So, paradoxically, while design, on the one hand, has become somewhat banalized, it has also moved up the value chain and become a boardroom topic, as reflected in these two observations;

Design seems to have moved from being a specialized competence of professions rooted in industrialized economies, to become something we can all practice as part of our consumption activities. [31]

The emphasis on design clearly is moving to the C-suite, and more and more organizations are creating a chief design officer role. [32]

For the concept of design, this ambiguity has existed for more than two decades, while it has been increasingly visible for the concept of design thinking since it was truly re-vitalized through Tim Brown's book in 2009. [33] And, in the meantime, the concept of design management almost disappeared from the radar. [34] This has contributed to a distortion in both ends, as design and design thinking – hence also their organisational role as well as what it takes to excel in any one of the two – have seemed to blend into a merged and consequently quite muddled picture, as well as jeopardizing its future relevance.

Design thinking is situated in a kind of abeyance. Its further development appears to be open in all directions. [35]

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[30] Yee, Jefferies & Michlewski (2017): *Transformations: 7 Roles to Drive Change by Design* – BIS Publishers

[31] Kimbell (2009): *Beyond design thinking: Design-as-practice and designs-in-practice* - Paper presented at the CRESC Conference, Manchester, September 2009

[32] Ignatius (2015): *Design as Strategy* – Harvard Business Review, September 2015 Issue

[33] Brown (2009): *Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation*, Harper Collins

[34] Pollen Trend Consulting (2017): Twitter Conversation Analysis on Design Management Hashtags 10.2.2017-10.3.2017 showed the occurrence of "Design Thinking" 10416 times, while "Design Management" occurred 91 times during the same period

[35] Papadopoulos (2012): *Design Thinking – Factors Influencing the Current and Future Adoption of Design Thinking within Design-Thinking-Experienced Companies* – Master Thesis, Copenhagen Business School

Undertaking change driven by design means that design thinking and design management, as well as design skills and competences, need to be embraced. Moreover, depending on the organisational and decision-making level you choose to integrate design, different design specific skills will be required to foster a specific type of change.

Inspire, humanize, experience

External forces for change are disturbing to all organizations, whether the change stems from increased globalization, digitization, demands for more sustainable solutions, gender and demographic issues, the defiance of institutions, personalization of consumption or any other megatrend; all these external forces demand from companies that they revise their basic objectives.

Where the old world was characterized by a division between purpose driven social organisations and profit driven businesses, in the new world, purpose and profit go hand in hand. This also contributes to reframing the role of designers, reanimating the traditional attitude, ethics and mind-sets of designers and the design approach of applying outside-in rather than inside-out perspectives and of creating visual or tangible representations that build a set of shared references to align perceptions across functions, teams and levels.

Social design has become increasingly attractive among designers, as governments are increasingly acknowledging design's potential to address complex problems, whether aimed at improving the conditions of marginalised groups or improving the performances of public sector bodies. Social design is design that exists to improve society at large, and only when behaviours are facilitated, fostered, changed or diminished does design contribute to social change. Behaviours are instrumental to societal transformation that can be managed and measured.

However, it would be irresponsible to disregard that;

- *very few designers recognize that they are actually fighting the problems their disciplines helped to create and keep creating. This sounds disturbing but the designers' share of responsibility for the social issues we face is indisputable. In designing our man-made world, designers have contributed to design our problems too. Designers have helped creating the cars of people's dreams and now they have to design us right out of those cars to save us from environmental destruction.* [36]

Design has played a role in the softer issues of our times even if mundane designs such as buildings, cars and smartphones may have created and heightened intercultural tension. Organizations and citizens now understand better that our physical and virtual environment affect our social interactions, management culture and society at large.

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[36] Tromp & Hekkert (2018): *Designing for Society – Products and Services for a better world* – Bloomsbury, London

All this reveals a paradox of contemporary design leadership. While, on one hand spreading our design thinking methodologies to those who fight social issues, on the other, designers keep on designing our society in ways that actually sustain these same social issues. It would clearly be more efficient if organizations and design management at large could better anticipate the social implications of their design outputs. This might be the best opportunity ever to broaden the influence of design thinking, design management and design; a coherent and coordinated, design driven effort towards improving society at large.

Which direction design takes next remains to be seen. The discussion seems to continue, and new models, terms and dogmas are introduced at the same speed as before. In the meantime – and irrespective of this discussion – many design students are still trained to design as if nothing had happened, while more and more progressive design schools and professors – as well as more and more business schools – gradually integrate the constantly changing and most recent takes on design thinking into their curricula. That will inevitably change design practise in the years to come, as well as the landscape surrounding design and designers.

Next Week: The Design Management Series, Article # 7/7: Epilogue & a story from real life