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DIGITAL DESIGN IN AN INTERNATIONAL ECOSYSTEM: DIFFERENT APPROACHES TO MANAGING DESIGN IN THE EAST AND THE WEST

Hyunwook Hwangbo, Dr. Emmanuel Tsekleves, Prof. Rachel Cooper

ImaginationLancaster, Lancaster Institute for the Contemporary Arts, Lancaster University

email h.hwangbo@lancaster.ac.uk; e.tsekleves@lancaster.ac.uk; r.cooper@lancaster.ac.uk

ABSTRACT

The role of design in the new product development (NPD) process is becoming increasingly complicated due to the complex digital landscape where multiple participants are globally involved in 'designing'. It requires an understanding of different design approaches to digital product development in international organizational cultures. However, in design studies there has been little discussion concerning the relationship between organizational cultures and new digital product development from an international perspective. This paper proposes two design paradigms in the design management of new digital product development: the 'design of management 'vs. the 'management of design' from cross-cultural perspectives -the East vs. the West.

It provides insights by looking at large Eastern and Western global companies positioned in the digital industry, and by discussing the findings from interviews with experts in NPD projects. This paper provides the reader an understanding of how organizational approaches to digital product design differ between international NPD projects run by global large organizations in the East and the West.

Keywords: Design management, Digital product development, New product development, International organizational cultures,

1. INTRODUCTION

Design and milieu

In today's complex technological and social development, design approaches everyday issues in society, economics, politics and organisations in a holistic manner, moving beyond the limited design practice paradigm that only focuses on material practices   (Cooper & Junginger, 2013; Krippendorff, 2011). The term 'design' has come to hold a nuanced meaning covering all relevant material and immaterial practices based on the assumption that an individual's ongoing daily life is situated in continuously changing problematic situations (Garud, et al., 2008).

In this context, it is significant to understand the notion of milieu in design, which is situated between the product and the organisation. The French scholar, Gilbert Simondon (1958), suggests the notion of milieu can be found in the technical objects which have adapted and evolved between the material and human conditions to their given environment with specialisation. The notion of milieu has been varyingly applied in explanations of human material practices.

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The human-made artefact is an interface between a substance and the organisation of the artefact, reflecting the cultures and value (Schein, 2010; Simon, 1996). A new product as a manifestation of organisational capability is created by interchanges with implicit, tacit and explicit organisational knowledge and information exchanges within a complex architectural product system in the design process (Henderson & Clark, 1990; Schilling, 2000). Thus, the term 'product' is defined as a milieu in the centre of organisational material and immaterial practices, whilst the required planning and the conception of those objects is denoted as 'design' (Margolin, 1995).

However, design approaches in new digital product development are being addressed with prominently different design language—generativity. Multiple participants co-create and refine the fluid, absurd and flexible characteristics of material and immaterial digital objects towards unforeseen values for new users (Yoo, et al., 2010; Krippendorff, 2011). Therefore, we need to have a different concept of the notion of milieu in digital artefacts. Based on the concepts outlined above, this paper focuses on how approaches to digital artefacts in the digital environment and how the use of design languages differs in different environments by examining two global examples: the East and the West.

2. CHANGING NOTIONS OF DESIGN AND ORGANISATIONAL MANAGEMENT IN THE INTERNATIONAL DIGITAL ECOSYSTEM

Apple products are developed by over 200 global suppliers in manufacturing across the world, from Guangdong, China in East Asia to Alabama, U.S. in North America (Apple, 2014). In fact, a digital product is globally co-developed across a layered modular architecture consisting of several layers: physical devices, networks, services and contents. This is shaped by the digital product platform that enables to jointly build a digital ecosystem with multiple participants (Yoo, et al., 2010; Gawer, 2009). Within the competitive landscape, tensions between participants in a partnership often occur in the race to achieve platform leadership (Eaton, et al., 2011; Gawer, 2009). Such tensions also sometimes cause global disputes concerning design patent issues across the layers; for instance, Samsung vs. Apple in 2011 (Hwangbo, 2013; Banks, 2012). In this sense, a digital product and its platform can be defined as the milieu that represents the multisided digital industry landscape and its organisation in a global environment.   However, the relationship between digital product design and organisation has not been discussed in the design literature from an international perspective; although a few scholars have attempted to investigate different strategic approaches to the NPD process in terms of the physical product and marketing from a cross-cultural perspective in the East and West (e.g., Lee et al., 2000; Song and Parry, 1997).

Based on the concepts outlined above, it is important to understand the notion of '*designing*'. This term refers to the ongoing status of incompleteness as outcomes are continuously redesigned and refined in response to ill-defined problematic situations en route to achieving completeness. '*Designing*' implies '*openness* ' (Garud, et al., 2008; Giddens, 1979). In this sense, a digital product is therefore created and developed by the logic of 'designing', which implies generativity in the international digital ecosystem.

However, the nature of digital design causes significant paradoxical tensions between the control and openness of generativity in organisations and international businesses where cultural conflicts occur. Firstly, despite emerging

opportunities that arise from the process of openness, the nature of an organisation inevitably attempts to control external resources in order to gain economic achievement in the digital ecosystem (Eaton, et al., 2011). In terms of the international development of an environment in the digital ecosystem, implicit tensions between different cultures are not divorced from this context. Despite growing globalisation, different work practice styles cause significant conflicts and such differences are significantly prominent between the East and the West because Eastern organisations, e.g., South Korea, Japan and Taiwan, use 'controlling' organisational language, such as "large power distance/low individualism/strong uncertainty avoidance/ restraint", whereas the West, e.g., the U.S. the U.K. and Demark, is 'less-controlling', characterised by "small power distance/high individualism/weak uncertainty avoidance/indulgence" (Hofstede et al., 2010). Davis (1997, p.36), however, postulates that the relationship between power distance and individualism-collectivism is not fully correlated in truly participatory work practices in an organisation.

In this context, this paper discusses the implicit and explicit challenges in the process of 'designing' taking into account an understanding of paradoxical tensions in international digital product development from cross-cultural perspectives from the East and the West.

3. RESEARCH DESIGN

Data were collected in two phases in order to achieve the best abductive reasoning to develop new insight (Kovács and Spens, 2005). The two phases consisted of a pilot study and the main study. This was addressed based on the respondents' perceptions of their international design projects in the East and the West. In the pilot study, a key conceptual framework was developed and tested with the semi-structured email interview, from August 2013 to October 2013. Based on the key insights, in-depth expert interviews were conducted with one-to-one personal meetings; skype calls and emails, ranging from 40 to 120 minutes in length. The in-depth interviews were conducted from March 2014 to September 2014. Samples were selected from a range of NPD project-based groups, since the project-based group can represent a complex organisational structure consisting of multiple interactions (Yoo, et al., 2006; Ulrich and Eppinger, 2012). So it can maximise analogical reasoning as representative bodies (Loewenstein, et al., 1999). All participants were selected from a group of NPD experts who had over seven years' project experience (ranging from 7 years to 30 years: on average, 12 years) above senior level (pilot study: 11; main study: 18). This experience ranged from physical component design-e.g. semi-conductor- and product design projects to intangible content and service design in a global digital ecosystem within a range of large global corporations' projects, such as Samsung, LG (South Korea), Sony and Panasonic (Japan), HTC (Taiwan), Huawei, ZTE (China), Google and Dell (U.S.), Nokia (Finland), Philips (the Netherlands), BT (U.K.), etc. Interviewees were divided into two groups: external employees (global design and management consultants: pilot study 4; main study 11) and internal employees in consumer electronics and information technology companies (pilot study 7; main study 7) who work as consultants, engineers and designers (service, industrial, interaction designer and researcher, etc.) in design, Research and Development (R&D) and management areas.

The collected data was analysed by employing thematic analysis. All collected data was transcribed to search features and to extract the themes that imply specific meaning and issues in the data (Braun, Clarke, 2006). The drawn

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themes were discussed with multiple data sources including reports and magazines for triangulation (Jick, 1979).

4. PILOT STUDY

4.1. ELEMENTS INFLUENCING DIGITAL PRODUCT DEVELOPMENT

In order to better understand the notion of 'designing' in digital product design projects from cross-cultural perspectives, the conceptual research framework was developed based on the literature, consisting of four major areas: (1) factors in decision making in the NPD process; (2) tangible organisational systems and IT technology tools; (3) reflection of the organisation in the product platform, and; (4) supporting organisational cultures.

Figure 1 – The Conceptual Research Model developed

(1) Factors in decision making in the NPD process: Projects in an organisation are completed alongside complex and political concerns about budget, schedules and technical ability, so an actual NPD project is underlined with risk and uncertainty regarding the project's financial situation and timeframe (Hollins & Hollins, 1991). For that reason, decision making in NPD has been studied in terms of the interrelationships between resources, time and product line variation (Urban & Hauser, 1980; Karjalainen & Snelders, 2010).

(2) Tangible organisational systems and representative IT technology tools: In organisations, bureaucratic *'formalisation'* tools are major means for ensuring the transformation of precise information in order to reduce incremental risks (Hofstede, et al., 2010). So, the types of formalisation could differ depending on individual organisations: controlling (one-way communication) vs. enabling (two way communications) in 'designing' systems (Adler & Borys, 1996). In this sense, modern organisations employ corporate IT infrastructures to transfer and leverage members' tacit knowledge across diverse members using a standardised format as an effective communication tool (Nonaka, 1994). That effectiveness for collaborative participants has been discussed in design and NPD practices (Boland, et al., 2007; Akgun, et al., 2006).

(3) Reflection of the organisation in the product platform: Based on the logic of design rules, product platform development represents significant decision making depending on a firm's technological capability in implementing the new product design or its derivatives (Ulrich & Eppinger, 2012). Thus, the

term 'platform' can refer to *'design'* itself and an embodiment of an whole organizational artefact, which describes a concept of complex product systems and the set of assets shared across engineering and industrial design (Baldwin & Woodard, 2009; Ulrich & Eppinger, 2012).

(4) Supporting organisational Cultures: This dimension contends that a relationship between hierarchical structures of organisations and the product system in the NPD process is associated with organisational cultures, as a development process is carried out in an organisational system: for example, bureaucracy, desirability of centralisation, control, formalisation and planning, etc. (Hofstede, et al., 2010). The different conceptions of hierarchical structures in the East and the West could affect decision making in the NPD process (e.g., Lee et al., 2000; Song and Parry, 1997).

4.2.   RAISING CONCERNS IN DIGITAL PRODUCT DEVELOPMENT

In this phase, the key insights noted by this research are: (1) the whole digital product system could be influenced by different structures of organisations rooted in different cultures; (2) there could be different strategic decisions and organisational attitudes about dilemmatic relations between 'open' or 'heterogeneous' and 'closed' or 'homogeneous' systems in the given structures. Organisational cultures in the East tend to prioritise viable execution and adoption of a better hardware system in new digital product development and its alignment with existing homogeneous products due to the tightly coupled management style utilised in controlling existing hardware elements (Hwangbo & Tsekleves, 2014).

The above insight leads to an assumption that the tight control shown in the organisation could cause incremental challenges to organisational decision making when building a new holistic digital product platform where incremental ambiguities and openness reside together.

5. RESULTS

5.1.   THE CHALLENGES OF 'DESIGNING' IN ORGANIZATIONS AND THE ORGANIZATIONAL GROUNDING

In accordance with the key research framework, this research draws insights into how holistic approaches in digital product development used in the process of 'designing' are challenged by Eastern- and Western-based organisations' design projects. This research analyses this by looking at actual digital product development projects, drawing on the interrelated implicit and explicit factors that inhibit holistic 'designing' approaches.

The key insight this research found is that the capability of 'designing' in digital product development could not only be found in the nominal data concerning technology and financial capability representing a nation's economic progress or an organisation's power. It is shown by comparing between two drawn nominal data sets in order to investigate how nominal figures represent design capabilities by nations.

> *"If you look at the GDP per capita, but…then penetration of…trigger things…in the West, when people have more choices yours higher up of Maslow pyramid. Emotional factors and self- expression factors become*

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*a more dominant part of your purchase decision…**one of the reasons why companies like Sony and Acer, for example…are struggling…is that actually they got too many…too much cost in R&D in the middle… Most important is…from your heart…Yet, they have quite lack of meaning …**" – Interviewee 1*

One is the global creativity index about 82 nations between 2000 and 2009[1]. (Martin Prosperity Insitute, 2011); And the other one is the latest total expenditure on R&D total after 2010 by nations (Grant Thomton, 2014). Despite massive investment of R&D in the leading Asian market, e.g., China, Japan, South Korea and Taiwan, the combination of all relevant creativity capabilities that can represent 'designing' grounding for generativity are not fully correlated with a country's economic power and its R&D expenditure (see Table 1). Yet, this finding could also be affected by an organisation's implicit elements that emerge from fundamental national grounding, reflected in the market and industry legacy embedded as grounded cultural issues.

COUNTRY	GLOBAL CREATIVITYTOTAL RANK(CREATIVITY INDEX)	TOTAL EXPENDITURE ON R&D TOTAL, $ BN, 2010 OR LATEST (% OF GDP, 2010 OR LATEST)
Sweden	**1(0.923)**	**15.7(3.4)**
United States	**2(0.902)**	**401.6(2.88)**
Finland	**3(0.894)**	**9.2(3.88)**
Denmark	4(0.878)	9.5(3.06)
Australia	5(0.87)	24(2.28)
Canada	7(0.862)	28.4(1.8)
Norway	7(0.862)	7.1(1.69)
Singapore	9(0.858)	(2.09)
Netherlands	**10(0.854)**	**14.3(1.82)**
Belgium	11(0.813)	(1.99)
The UK	**13(0.789)**	**39.9(1.76)**
Switzerland	14(0.785)	15.1(2.99)

[1] The figure was drawn by combining three major variables: **the technology index** – R&D investment (R&D spending as a share of GDP), Researchers (professional R&D researchers per million capita), innovation (patents granted per capita); **the talent index** – human capital (the standard measure of educational attainment: the rate of enrolment in tertiary or post high school education); creative class (the share of a country's labour force engaged in a higher degree of problem solving profession such as computer science and mathematics, knowledge work occupation, social science including art and design and so on); and **the tolerance index** (tolerances about diversity towards minorities such as ethnic and racial group and gay and lesbian) (Martin Prosperity Insitute, 2011)

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France	15(0.764)	57.8(2.26)
Germany	15(0.764)	92.5(2.82)
Spain	17(0.744)	19.3
Taiwan	**18(0.737)**	**12.5(2.9)**
....		
South Korea	**27(0.598)**	**37.9(3.74)**
Japan	**30(0.541)**	**169(3.36)**
China	**58(0.327)**	**104.3(1.77)**

Table 1 – Global Creativity Rank and Technology capability (adapted from Martin Prosperity Institute, 2011; Grant Thornton, 2014)

5.2. MANAGEMENT OF INCREASING UNCERTAINTY IN 'DESIGNING' WITHIN A DIGITAL PLATFORM

In this context, the development process of building a holistic digital product platform manifests implicit and explicit concerns in 'designing' with regards to whether an organization's grounding can achieve integrated digital artefacts consisting of heterogeneous elements responding to all unmeasurable uncertainties.

> *"Traditionally Sony...Nintendo... Panasonic…Nikon...they are having...used to have...**still have now closed platform which is (able to be) bringing more profit now …"***

> *-Interviewee 2*

> *"…well…in many cases of Samsung and LG…still many of their projects are operated, sporadically…it is still focused on very minor things…for instance, called 'bezel'…the rim part…or if customers tend to like glossy looks, then they only concern about how to look better for glossy…there could exist so many relevant elements for this…**yet, that is not the case with a big picture…***"

> *-Interviewee 3*

In fact, actual digital product development reveals incremental trade-off compliance issues between heterogeneous elements across the layers. Yet the process continuously calls for intrinsic and tacit human interaction within organisations in order to deal with different depths and extents of knowledge and information of each element, which cannot be covered by advanced information technology systems such as online conference calls and Enterprise Resource Planning (ERP) systems. Rather the process requires dedicated humans' trust and tacit knowledge for processes involving delicate professional knowledge and confidential information transfers. In this sense, agile and rational organisational decision making is needed in each development phase.

*"…As a display resolution become clearer in a mobile phone, this can be said the better product…If battery function is improved at twice for this, it also seems to be better…however, those projects could be accomplished separately. But if all those elements put together into one product for deployment, there are so many such failed projects…**that is 'trade-off'…So it is important for them to work together and have a tea and a chat to know about the differences each other in same building…the communication should be placed in real time… otherwise it is waste time…**In fact, engineers refer to very singular professionals who are only specialised in their own expertise …Well…from engineering perspective…it is difficult…because the knowledge is…deep-dive knowledge…the level is very different "*

- Interviewee 3

Thus, traditional formalisation activities based on human interaction are still vital to achieve quality design and so invisible organisational manners and attitudes could still affect the systematic product development process. In order to explain this, the research's key findings are addressed in terms of (1) the explicit factors and (2) the implicit factors, by looking at major different types of grounding in the East and the West.

5.2.1. Explicit factors that affect organizational cultures

Explicit factors are associated with (1) tangible national grounding featured in policy, market and industry legacy in economic progress and (2) the organisational system itself. The factors could be interlinked to form organisational cultures as fundamental grounding.

Firstly, with regards to tangible national grounding, East Asian organisations are grounded in a more closed ground. The leading East Asian market, including China, Korea and Japan, is seen as a more closed market. For instance, characteristics include: a solid national policy that inhibits 'openness', a lack of information transparency in China, a supportive financial system that forms an ecosystem in Korea and a strong domestic market unique to Japan.

"…Japanese market is so unique so that they will be ok not to care about other market…you should keep going on within that process …"

-Interviewee 2

"…well…Asian persons relatively tend to show risk averse. Well…even if result is not that big…OK…for example, in case of start-up business, in Korea, there is not any genuine start-up at all. But in the Western, such as the U.S., called 'Angel investment' is existed, which can take investment with only your possibility ..."

-Interviewee 3

"…particularly in China information and knowledge are very harder to combine. That's the very high priority they cannot easily get the knowledge because the communication is more closely controlled by government with limited access to different website ..."

-Interviewee 4

Accordingly, a strong alliance between a large, powerful manufacturing industry and national economic policy geared towards incremental economic growth helps to shape a strong hardware-centric industry legacy that tends to value the marginal benefits in managing measurable risks (see The Economist, 2010).

> *"…'technical credit culture'…Japan, Korea…and China to certain extend as well. Well you have incredibly intelligent rational thinking engineers"*

-Interviewee 1

> *"If you go back for 50s or 60s Japan was the cheapest manufacturers. Then, that moves into Taiwan and China. Japan is not that cheapest, because of controlling in effect"*

-Interviewee 6

Secondly, the nature of a large organisational system also inhibits the formation of a 'designing' language. The nature of a large organisation attempts to manage measurable risk emerging from financial concerns and this is managed by a few members of those who hold high-level authority, who are themselves under pressure from the upper levels of management.

> *"[Challenges working with large company is] getting access to decision makers and create awareness on executive level … but in general the companies are not mature enough for that change. Reasons for that are […] no overall responsibility and budget and different interests in different department"*

-Interviewee 7

5.2.2.   The implicit factors of organizational cultures

This research identifies that implicit prominences are closely interlinked with organisational cultures rooted in national cultures, resulting in different design priorities in large Eastern- and Western-based organisations' projects. This reflects complex hierarchical behaviour inherited from solid and multiple power structures amongst members at the top of the organisations. Such behaviour can cause the dynamic of 'preferring tangibility' vs. 'intangibility' (Table 2).

As Hofstede notes (2010), large power distance and collectivism are illustrated as complex hierarchical behaviour amongst the members of Eastern-based organisations. A superior's decision making is expected and each decision requires collective consensus of members. For this reason, the concept of collaborative design activities tends to be twisted as *'ridicule', 'hesitate', 'inefficient' or 'reluctant'* as members try to avoid judgement from other organisation members and their superiors.

> *"Hierarchy is very important in my current company. I find that Korean colleagues in Seoul do not speak up nor voice their opinions if theirs are different from their superiors'. Following orders is the routine…"*

-Interviewee 8

> …*"…Eastern clients will never openly 'brainstorm' in presence of their superiors…Eastern clients will also agree to many things even if they do not mean to do so …"*

-Interviewee 9

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Rather, East Asian-based projects prioritise more tangible design outcomes with deductive, rational and explanatory reasoning, which focuses an additional complexity in overall product features. This is in contrast to Western projects that emphasise the problem-solving process is necessary for quality design.

However, despite the demanding and explanatory reasoning requested in communication, large Eastern-based organisations are seen as having a more obscure decision-making process. Especially, Japanese and Korean conglomerates' business model had developed based on complicated web of vertically integrated hierarchical structures that cover wide ranges of diversified businesses: from components to final goods (see The Economist, 2010; Chang, 2009).

> *"[A Korean company] it is too large […] there are too many oarsmen in one boat, so that it is not easy to guide towards right direction …"*
>
> *-Interviewee 10*

> *"More like serial pyramid...So, Sony Ericson was pyramid and....Sony computer entertainment was different pyramid…it's difficult to...take all the strength of all the different division …"*
>
> *-Interviewee 11*

In such circumstances, leaders are described as tyrannical and as autocrats. Organisational systems and norms are relatively characterized as feminine, and ownership is rarely expected from middle level members, as the organisations tend to prioritise an individual's ability to manoeuvre internal politics rather than their professional expertise (see Hofstede, et al., 2010,p170; Hofstede, 1994,p4).

> *"[At one Japanese company] whenever we had a different project or even non-my own area, we always say "I would like to request to 'Ra-san'. Because he trusted me because he makes sure his boss …"*
>
> *-Interviewee 12*

> *"…in case of Korean organisations, comparing to the Western firms, rigidity of organization structure is likely to be weaker. That is because a personal relationship between member's minds is much more influential than an organization's rules…"*
>
> *-Interviewee 13*

	THE EAST	THE WEST
Organization structure	• Decisions to be made linked with huge conglomerate's complex web of shareholding • Top leader's role is heavy, but middle level has little authority for significant decision making	• Project based group centric work • Decision to be made by project manager or personnel in charge
Communication	• Conversation in meeting is 'sharing information' only	• Meeting for decision making individuals' question and speak-

	Demanding; challenging Superiors dominate	out is acceptable & respected willing to exploration, but ill-structured messy or ill-defined decision made
Design project is prioritised in …	• Time is valued/ tight Time scheduling • Process for visible risk management • Adoption concerned first • Complexity preferred: Adding-on in physical features/ advanced features - Less valued simplicity	• Sufficient Timeframe valued • Process for exploring uncertain needs :e.g. design research • Balanced between looks and function • More novelty pursued
	Tangibility preferred	**Intangibility accepted**

Table 2 – Summary of Design priorities and Characteristics of Design Projects in the East and the West

6. REFLECTION: 'MANAGEMENT OF DESIGN' VS. 'DESIGN OF MANAGEMENT'

Based on the key findings of this research, this study suggests two key models in digital design management discovered in large organisational cultures and national groundings in the East and the West, namely: ***management of design vs. design of management.***

Management of design is regarded as the ideal design-centric model(Figure 2). But this model could only be found in very few Western grounding design-centric organisations or successful start-up companies, e.g., Google. Based on established national economic grounding, visionary design-centric organisations could be attached to an individual founder's own holistic vision. This could be stimulated by less-hierarchical cultures: individualism and small power distance with a flatter organisational structure that enables members to reasonably share the leader's vision. This type of organisation behaves like one individual with in-depth empathy towards humans' needs in the process of 'designing'.

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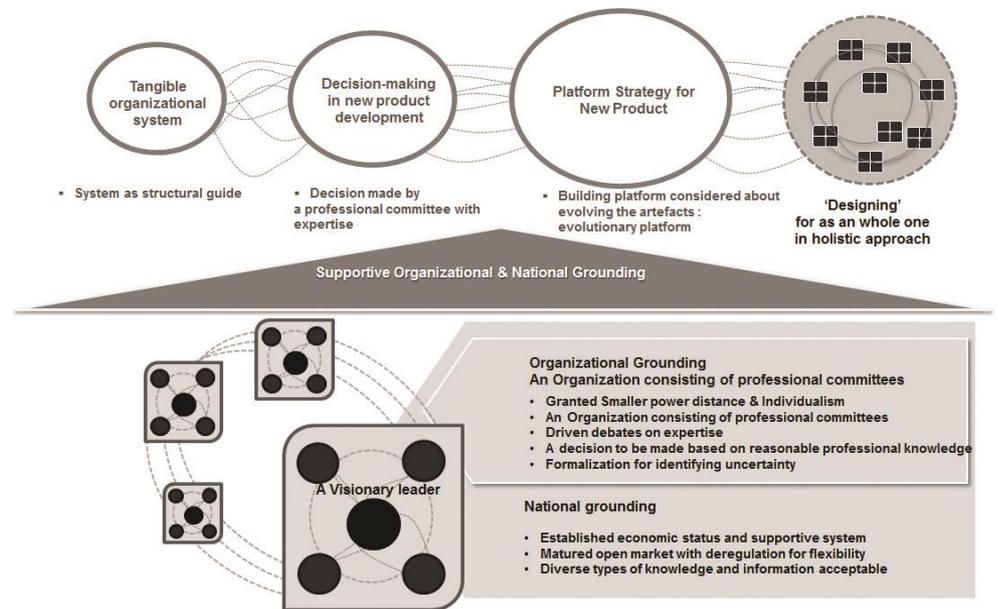PARIS SORBONNE UNIVERSITY
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Figure 2 – Management of Design in Design Centric Organization

Design of management refers to design as an 'object' management model, which is managed by conventional organisational logic in order to achieve certain economic volume for maximised marginal profits (Figure 3). In this model, digital product development is challenged by a lack of 'know-what' capability of the management of unmeasurable uncertainty and of the heterogeneous elements needed for digital product development.

To explain this model, explicit factors are not separable from issues arising from the process of 'designing' in organisations. Achievement of rapid national economic growth inevitably requires tightly coupled collective management and a strong leader's character with a large, powerful manufacturing industry for efficient deployment of the hardware product. Different cultural values in large Eastern organisations—large power distance and collectivism—could stimulate rapid economic growth. Rational engineering programmes are necessary for precise outcomes and explanatory reasoning helps in dealing with the unexpected but measurable risks included in the formalisation of a collective agreement. Large organisational systems' high-ranking members' limited tenure can foster the tightness of management style.

However, organisational cultures tend to become strongly interlinked with complex internal political issues. Due to strong collectivism and large power distance, organisational systems that should act as substantive guides in decision making are seen as feminine or supplements ones (see Hofstede, et al., 2010). Thus, organisations are, instead, operated in inter-political manners. This process causes a lack of agility in the decision-making processes concerned with the integration of complicated heterogeneous digital elements into a whole in a holistic digital platform. Decisions made tend to be concerned with tangible performance in order to show off a leader's political power. So, advanced features, quickly adapted product lines and specifications with prominent appearances tend to be prioritised in order for a leader to maintain his/her authority.

In this process, East Asian design capabilities could be developed within 'know-how'-based design skills, rather than 'know-what' skills that require more imaginary and exploratory level approaches (see Sanchez, 1996, p.135). This process could be reflected in the challenges of building own holistic digital platforms that embrace the digital ecosystem. Although Hofstede (2010, p.287) argues that East Asian organisations value long-term perspectives, collectivism and higher power do not easily encourage true participation in holistic approaches for clouding multiple heterogeneous needs from external and internal participants (see Davis et al., 1997).
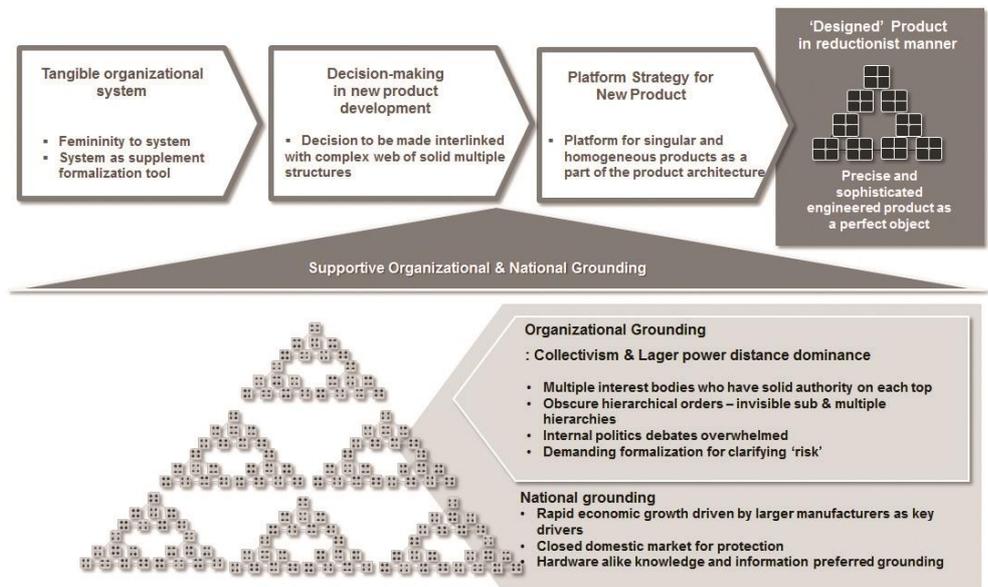
Figure 3 – Design of Management found from the East

7. RECOMMENDATION: DIGITAL PRODUCTS AS MILIEU OF ORGANISATIONAL MANAGEMENT

This study can contribute to clarifying the nuanced meaning of design in digital product development. It is important to understand digital artefacts as international milieu representing organisations, industry complexities and national grounding across borders in the ecosystem. The issues raised in this paper can help us move further an understanding of 'design' that has been focused on human's needs in users sides, to organisational and national level with the conception of 'designing'.

This study will be crystallised regarding organisational political manner in digital product development in different national cultures reflected in large organisations. This issue can be discussed in regards to complex territory issues between the hardware and the software in integrated digital product development, interlinked with any given organisational and national grounding in a digital ecosystem. To take this idea further, this research also considers how an organisation's absorptive capability (Cohen & Levinthal., 1990) can affect the process of 'designing' when examining different organisational grounding in the East and the West in terms of industry legacy.

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