“It will be found, in fact, that the ingenious are always fanciful, and the truly imaginative never otherwise than analytic.”

Edgar Allan Poe

On the behalf of the entire IDBM group, I want to dedicate this book to Markku Salimäki and his effort to successfully nurture the IDBM baby through infancy and teens to the gates of adulthood.

Toni-Matti Karjalainen, “Editor in Chief”

IDBM
International Design Business Management
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Foreword:
15 years of IDBM

Markku Salimäki
Dear reader! You are holding a special book in your hand. IDBM papers vol 1. is produced to celebrate the 15th anniversary of the IDBM Program and to promote our ever increasing research activities. The book includes a short history of IDBM in this editorial, interview of Professor Yrjö Sotamaa, a key person behind IDBM, as well as a number of articles exploring various topics central to IDBM and design management research. The articles are written by our own staff and a few colleagues sharing our interest in multidisciplinary learning and business development.

The International Design Business Management Program was ceremoniously started on the 9th of June, 1995 and the first cohort of some 30 students began their minor studies in September 1995. The Minister of Education at the time, Mr. Olli-Pekka Heinonen stated in his greeting that IDBM meets with two focal goals of the Ministry's strategy for research and teaching: industrial design and design in general is one of the focal areas and cooperation of leading universities is supporting the new policy of the Ministry. Minister Heinonen was also concerned about the employment opportunities of the university graduates and hoped that multidisciplinary experience would increase graduates' competitiveness on the job market. As concrete support, the Ministry had confirmed financing for the IDBM program for five years.

The chair of the event, and the godfather of IDBM, Rector Yrjö Sotamaa from University of Art and Design Helsinki stated in his speech that interaction with the society and industry and the international perspective were the two cornerstones on which IDBM was developed. IDBM was established by a letter-of-intent type of agreement signed by the rectors of Helsinki School of Economics, Helsinki University of Technology and University of Art and Design Helsinki, the same schools that later merged to form the Aalto University. The chair of the IDBM Board, Professor Reijo Luostarinen from Helsinki School of Economics defined the IDBM mission as follows: “ability to optimize international business strategy by combining multidisciplinary knowledge”. In his greeting from the industry, Jussi Karinen, Managing Director of Finn Karelia Virke Oy, was looking for people who would understand whole industrial processes on top of single functions and hoped that wider background of studies would produce such experts.

Ten years later, in my column in the Arttu magazine devoted for the 10 years of IDBM, I expressed my future vision according to which IDBM would be an internationally recognized fully-fledged Master Program that also conducts high-level research with a wide international network, and would be financially independent. Today, while we are not financially independent, we still have quite good resources, but have quite good resources, thanks for being one of the first functioning joint programs of the Aalto University. And within Aalto, IDBM has transformed into a fully-fledged Master’s program, and the Minor Program is also still offered.

Our unique approach has also gained wide international recognition during the last 15 years. For example, we were selected as one of the nine global design “Programs to Watch” by BusinessWeek in October 2009. Our mission is to continue and develop further world-class learning and research in multidisciplinary, systemic and global business development through design and technology. We have adopted the international dimension as a core of all our activities. Over 600 hundred students from some 30 countries have participated in the Program, and over 150 projects with some 100 partners have been conducted. This year our students are travelling to countries such as China, Japan, Vietnam, India, USA, and Brazil in their industry projects. Our key research partners represent leading universities in a number of European and Scandinavian countries, Japan, Korea, China, and USA. And representatives of our alumni are getting more and more visible positions in the industry and society.

Going back to the very start of the Program, I am glad to see that the initial idea really has endured and strengthened throughout these years. The idea to start IDBM was invented and discussed as result of one workshop of my own doctoral research. We had invited experts from different countries, both academics and company executives, to discuss and analyze data that I had collected in 16 Finnish companies. Rector Sotamaa, Professor Arto Lahti and me found the seminar so exiting and useful that we decided to start talks that soon led to the establishment of the IDBM Program. For me, after 20 years industry experience, the process of starting and running IDBM has been a wonderful adventure. I could realize my dream of the doctorate which I received in 2003, I have had the possibility to visit several countries, give speeches and presentations, meet with many interesting professionals and make friends with many. But the most rewarding thing, after all, has been the possibility to follow and support young and creative talents on their path from the school to the “real world”.

I would personally like to thank everybody, not to mention any names, within and outside our schools who have helped us to make IDBM to what it is now. Your help has made my second professional life possible.

Markku Salimäki
Program Director
IDBM
“Innovation activities are essentially like a football game; you have to play in close collaboration with your team mates in order to score. Individuals need to learn collaboration on an early phase when they still have open minds and can absorb new things.”

Interview:
On a football field with Yrjö Sotamaa

Toni-Matti Karjalainen
Professor Yrjö Sotamaa was the key person in the establishment of the IDBM Program and has served as its visible messenger ever since. Sotamaa, the former Rector of University of Art and Design Helsinki, also acted as the main catalyst in the process that eventually led to the foundation of Aalto University. On one sunny January afternoon, we sat down at the IDBM Corner in Otaniemi and took a brief look into the essence of IDBM.

TMK: Let’s go back to the very beginning of IDBM. As one of the original architects of the Program, what do you see was the starting point? How did you come up with the idea?

YS: I could use the analogy of two sports, ski jumping and football. People often thought that creating innovations is like ski jumping; who makes the longest jump wins the competition. Innovation activities, however, are essentially like a football game; you have to play in close collaboration with your team mates in order to score. And our experiences suggested that the collaboration between business and design didn’t generally function with this logic of a football team. Skilful players didn’t play together. On this very practical ground, we then started to search and build the connection. Individuals need to learn collaboration on an early phase when they still have open minds and can absorb new things. So that they won’t find out only later in their lives that this didn’t work at all. I don’t think there was any more specific reason than this.

Of course we also thought that design is a really important factor but a misunderstood one. We have built a new knowledge foundation through means that are different from the old model of practical design work, in which designers do their design work and then tell other designers how to do it. In this regard, the development of research activities, which started in the early years of the new millennium with exceptionally large investments, starts to show little by little. IDBM has been an excellent actor in this development.

YS: There has been quite a big change. Many issues have affected that. IDBM Program has been one of those, as it has systematically educated people to utilize each others’ capabilities and expertise in innovation activities and business development. A large crowd has been formed that has this knowledge and experience, consists of team players instead of silo people. And this has an impact on design and business context. And various research programs, like the ones by Tekes and Academy of Finland, have tried to create new understanding of design. They have built a new knowledge foundation through means that are different from the old model of practical design work, in which designers do their design work and then tell other designers how to do it. In this regard, the development of research activities, which started in the early years of the new millennium with exceptionally large investments, starts to show little by little. IDBM has been an excellent actor in this development.

YS: Yes, in a way that we were thinking, quite similarly as now, how do we recreate our export, where could new companies spring from, how to increase employment. The Ministry of Education had reserved special funding for universities to develop these kinds of things. And I thought this would be a good way to spend some money. Through this, we received the start-up funding for IDBM. There also existed a national agenda that encouraged universities to collaborate. There was a problem that required new solutions.

TMK: Besides IDBM, were there any thoughts about wider collaboration between the three universities? When was the idea of Aalto University put on the agenda?

YS: Surprisingly as such, there is a long history preceding the Aalto-type cooperation. It started in the 1960s when Sitra (the Finnish Innovation Fund) was established and funded one national project in which I also took part. The project concerned developing innovation activities, product development, design, and environmental issues in Finland. And business development was the essential part of this. So, in a way we’ve had the idea of this type of collaboration for quite a long time.

And then again, when IDBM was built, the situation was a bit similar. We should do something to better utilize the resources that we have in our country. To get people out of their individual foxholes. And the time window was just right for this. Like it was in the case of the Aalto University. It was one moment in history when it was possible. At that moment, we had a good soil for IDBM to grow, and things started rolling on very well.

TMK: On such a time scale, 15 years starts to look a rather short period. But, in fact, how much have design business, utilization of design resources, and innovation activities changed since 1995?

YS: The importance of multidisciplinary collaboration has been recognized in many countries. But it is not an easy thing to implement. The success of IDBM has been largely grounded on its functional operation and education concept. There have been right elements and they have been implemented in a right way: company collaboration, opening up the relevant parts of other universities’ education offerings, and the team work aspect on which the education is firmly based on. It is very rarely when you hear students so abundantly praising education, the same one that is also touted by companies and professors. It’s exceptional. Similar things have been attempted also elsewhere but without major success. It has been more talking than acting. Many attempts have started with fast pace but then crashed.

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TMK: How do you see IDBM in the international education context? We have been visibly acknowledged for example by BusinessWeek and the Cox Review of the British Design Council. While you have been travelling in many countries and seen different educational approaches, how unique would you think IDBM has been?

YS: The importance of multidisciplinary collaboration has been recognized in many countries. But it is not an easy thing to implement. The success of IDBM has been largely grounded on its functional operation and education concept. There have been right elements and they have been implemented in a right way: company collaboration, opening up the relevant parts of other universities’ education offerings, and the team work aspect on which the education is firmly based on. It is very rarely when you hear students so abundantly praising education, the same one that is also touted by companies and professors. It’s exceptional. Similar things have been attempted also elsewhere but without major success. It has been more talking than acting. Many attempts have started with fast pace but then crashed.
**TMK:** IDBM research activities have also expanded and gotten more structure along the way. How do you see the status of multidisciplinary research? The academic world has traditionally been, and still is, quite diverged into silos. Publication structures encourage specific thinking. Is there any need for wider perspectives in research?

**YS:** People have contemplated this challenge of multidisciplinary research in various international forums. If we think about research funding structures that have been built on the basis of the silo thinking; there are no committees for multidisciplinary research. Such activities are easily slipped into some marginal areas that then think that they are not relevant for them. It’s one aspect. Another one is that all merit systems are also built on the silo model; publication structures and career development promote focus. That a person becomes good in some limited area, not a multidisciplinary expert. It is really challenging to develop multidisciplinary research. But many people understand that it is important. Future challenges are more complex and multifaceted, and require that different expertise and knowledge is used to solve problems. Holistic thinking, to which multidisciplinary research relates, is at an early development phase.

**TMK:** What should be done? Are there any other ways than just keep trying, bang your head to the wall at times, and wait that the world starts opening up?

**YS:** I don’t have any other advice than that every community needs to fight for its space in the society, show its usefulness and significance through good results. Then the world opens up. The principles of scientific communities are so established and deeply rooted by history that they cannot be easily swayed. And in the academic competition everyone is fighting for positions and not necessarily interested in how well others succeed. The silo structure is solid, strong and defensive. By small steps forward, as in the IDBM, is a good way. You have witnessed yourself how difficult it has been to initiate IDBM research and how prejudiced some established instances have been towards it. You just have to believe in it and have the strength to carry on.

**TMK:** It took 15 years to have the IDBM Master Program. Perhaps it will take another 15 years to come up with a Doctoral Program?

**YS:** Perhaps. These things are not self-evident. They need defense and long-term support. Of course one often expects faster changes, but everything is based on the learning processes of the community. It is a slow process to make the community learn new ways of acting and requires involvement of new people, change of generations. Changing one’s behavior is slow. But the fact that IDBM is alive and kicking is a result of its own growth strength. It has such a strong life thread and vigor to push forward. And it has required lots of support and understanding.

**TMK:** What would you consider the most important research themes for IDBM in the future?

**YS:** Many things should be thought about from an entirely new angle. If only small steps are taken to address the global problems which really must be solved, we will run out of time. We need to reconsider innovation activities in ways much more radical than currently. If you get a new rear view mirror and new tyres to your car, it won’t take you very far. A challenge is to build up such education and research that enabled major leaps to the future. This concerns, similarly, the development of new business models, globalization of business, education and research, and solving the environmental problems. All these entail similar challenges. Some involve big threats, some face increasing competition. It would be good to be agile. 15 years is already a long time on this scale.

**TMK:** Do you think that the multidisciplinary approach generates such agile people who can think more widely and are able to come up with radical solutions?

**YS:** Yes. Basic research generates solutions which can open up new development avenues. But multidisciplinary collaboration is needed to apply this knowledge. This approach produces very practice-driven people who have the ability to work with other people better than before.

**TMK:** Of course we also need to remember the central challenge of balancing between multidisciplinary and specific knowledge. There is a limited need for IDBM people. Do you think that the need for such generalists is increasing?

**YS:** We are still talking about relatively small numbers. Big volumes are related to specialist education, and this will surely continue in the future. But relatively, we need more people that master well the type of team work that actualizes in football at its best. That has a clear goal, everyone plays well together, can exploit opportunities, notice opportunities. There is more need for educating such teams than before. Of course we also need people who master specific knowledge. In business, technology and design there exists narrow and deep special knowledge that is essential for implementing new things. Like the football team has different types of players: attackers, defenders, a goalkeeper. There are lots of specialists who are masters in their own role but also have a mastery of playing effectively together. Some are good in passing the ball, while others are intelligent in finding good spots to score a goal.
TMK: And possibly, some of these team players will then become coaches who are able to discern if a wrong strategy and tactics are being used. Or if an entirely wrong game is being played, or on a wrong field. If the whole nature of the game should be altered.

YS: True.

TMK: Finally, do you see particular challenges for IDBM? If we wind forward the next 15 years, what should we have in our hands?

YS: IDBM has now three pillars: design, business, and technology. Should the equation include also other components like humanities and social sciences? The major developments of the world concern understanding and changing the behavior of people and communities. Humanities and social sciences will have a stronger significance in this context. How would it work, what could it generate? There will be development in which some people can orientate themselves towards innovation activities in societal services, which is a grand challenge. The innovation paradigm is transforming; from a technology-driven activity to socially-led and human-led thinking. Bringing such elements to IDBM might be a worthy experiment.

TMK: This seems like a fair challenge. Thank you very much for your valuable insights!

YS: My pleasure. 15 years is almost the age of a grown-up. Lastly, I should acknowledge Markku Salimäki who has of course been the pivotal person in all this. He has brought the IDBM Program forward in a proficient and nice fashion.
“Times of the lone, heroic efforts of one individual have mostly passed, being replaced by the concerted efforts of highly qualified individuals working together to create innovation and new wealth in society.”

Keynote:
Designing multidisciplinary learning for the real world

Mikko Koria
Markku Salimäki
Toni-Matti Karjalainen

In today’s intensively global and competitive business environment, businesses are constantly on the lookout for novel ways to achieve superior performance and added value for their customers and stakeholders. Over the last few decades, the general drift has been to include intangible elements into the previously straightforward palette of offerings in goods and services, through close interaction with customers. The complexity of creating inimitable constellations of solutions and offerings has led companies to also examine the benefits that can be gained through design. Parallel to this, design has also been adopted into novel contexts somewhat outside of traditional business organizations; social enterprise, services, and complex systems are prime examples of new areas of engagement.

Re-design of design

In a concurrent development over the last two decades, substantial scientific evidence has been built up piece by piece on the multiple benefits that design may bring to business and organizational performance. This often involves better functionality, enhanced usability, delightful aesthetics, while concurrently also lowering operational and manufacturing costs and developing improved delivery (as in the case of services). In the same context, communications that support the brand and corporate identity have been found to widely benefit from design. In some cases, companies use designers on the strategic level, with tools in business foresight and market contexts, while engaging in the analysis of operating environments. Some case studies even demonstrate that the strategic renewal of the whole firm can be initiated by a design function. On another level, systems thinking, together with integrated or design thinking have come into play within the fields of design.

That being said, there is an ongoing (and often heated) debate among managers and management scholars about the roles and benefits of design. While a common understanding that design is a good thing has been widely adopted as such, there exists also the observation that designers, managers and engineers seem to all speak quite different languages. At times major existential questions like “what do we mean by design?” are voiced, together with queries like “are the benefits found externally on the market or internally as cost savings?”, “is design a strategic or more operative function?”, “should design be organized internally as an in-house resource and how, or bought from consultancies?”, and “what is the right cost of design?”. So far, there appear to be no clear rationales or commonly adopted answers to these queries.

The other main observation is that these questions are wicked in nature; they do not really have a single clear, unequivocal answer, and answers given depend on the background and design experience of the person responding. The very word ‘design’ is ambiguous: it can mean all kinds of planning, irrespective who the planner is. There is a distinction between engineering design and the activities undertaken by industrial designers that emerge from art-based education. Professional skills in engineering design are largely based on mathematics and natural sciences, and often target optimization of process and output as an overriding aim. In the context of Finland, industrial designers’ education is strongly based on art, starting from the selection of students and including the content of early teaching delivery. This fact is reflected in designers’ way of thinking and approaching problems, which tend more towards affect-oriented solutions.

Coalescence of disciplines

If diving into the subject of design-intensive success stories a bit deeper, the prime observation that emerges is that multidisciplinary teams create success. Times of the lone, heroic efforts of one individual have mostly passed, being replaced by the concerted efforts of highly qualified individuals working together to create innovation and new wealth in society. Creating tangible, replicable and sustainable benefits from design requires multi-, inter- and cross-disciplinary approaches and ways of working that bring together experts from different professional backgrounds. Teamwork based on designers working with engineers, marketing executives, lawyers, psychologists, sociologists, and other contributing professionals can make significant and well recognized contributions to business success.

But this can also lead to failure. While research clearly points to the understanding that high value is clearly created through multidisciplinary approaches, there is also the downside. The lowest value is also produced by heterogeneous teams, and these outcomes clearly outnumber the high value ones. In other words, multidisciplinary teams more often fail than succeed in achieving excellence. This indicates that just bringing different professionals together is not enough; one has to know how to train and manage the teams.

At the same time, the global economy also has implications: the teams working in transnational circumstances are most often multicultural in nature. This is clearly observable in globally oriented business enterprises and international organizations. On the surface, the effect of multiculturality appears to be similar to that of multiple professional backgrounds: significant gains can be obtained, provided individuals are able to work together and cross-fertilize ideas without falling into dysfunctional and non-creative abrasion.

Thus, we recognize that design is able to add exceptional value to business, while noting that this is mainly achievable through multidisciplinary approaches, often with individuals that have diverse cultural backgrounds. But we also know that various professional groups speak different languages. The crucial question then becomes: how would one manage multidisciplinarity so that one would not fall into the low outcome, low productivity traps? And especially in the context of higher education, how would one teach multidisciplinary skills and competence? Especially when they contain multicultural dimensions?
**The IDBM exploration**

In order to come to grips with the development of the needed abilities required to create exceptional value within design intensive global businesses, we examine the learning that we have gained over the last 15 years from running the International Design Business Management (IDBM) program, first as a joint initiative of Helsinki School of Economics, University of Art and Design Helsinki and Helsinki University of Technology, and now within the context of the new Aalto University.

IDBM aims to develop world-class multidisciplinary and systemic research and learning in global business development through design and technology. The program builds on the premise that students originating from different schools have distinct worldviews, capabilities and skills that are linked to their institutional backgrounds; this variance underpins the creative abrasion that enables innovation. Since 1995, IDBM has educated over six hundred M.Sc. level students from over twenty countries, with over hundred and fifty completed industry projects with some 100 enterprise partners, of both Finnish and foreign origin.

The IDBM program is a two year masters degree, which includes, among others, an eight-month long learning-by-doing (embedding both practice and project based learning) industry project with a real-life business enterprise setting, with multidisciplinary student teams that are equally balanced in terms of business, design and engineering students, coached by multidisciplinary faculty and expert industry tutors; student team-work based NPD projects with rapid prototyping of actual products; multiple business and design case studies; and finally relevant elective course work in business studies, art and design, and engineering. Within the program, attention has been directed towards the creation of an IDBM community of practice (through the IDBM Club structure), which has helped to link the alumni to the program, in a loose and informal fashion.

The essential element in the program is the notion of multidisciplinarity. The program also seeks complementarities between industry projects, research and learning. Projects have involved the development of new business concepts, services or products, as well as translating corporate strategy to visible and tangible solutions, commercializing novel technologies, and changing existing business to suit oncoming novelty, to name a few. The original international context has naturally evolved into a global one, embedding in it the idea of cross-cultural activity (as an example, industry projects are done with partners from Vietnam, China, India and Brazil, in addition to Nordic organizations). The systemic nature of the initiatives is embedded in the very nature of the program and the idea of business development implies a future orientation and learning in strategic foresight.

**In pursuit for unified tempo**

Furthermore, in order to achieve coherence across the development of systemic and multidisciplinary competence development, IDBM uses an approach consisting of five major dimensions: tools, environment, management, process, organization (TEMPO). The Tools dimension involves developing a series of instruments that support multidisciplinary and systemic learning and research. First and foremost, project management emerges as a core competence that is seen to be both a means and an end. Project management is not only a tool but also an object of research within IDBM.

On another level, it is argued that coherence in programs such as the IDBM demands understanding of how creative Environments are built up and sustained. Again, this is both a means and an end: creating positive environments is essential for both students and knowledge intensive enterprises. The Management dimension of TEMPO covers wide issues from the perspective of business management, ranging from functions such as HR, marketing, finance, also covering entrepreneurial and intrapreneurial aspects of business, and covering, among other things, leadership and strategic planning and management.

A clear future orientation is observable in the Process dimension. New ideas in business, services and products are the currency of business development; this is where the multidisciplinary and systemic skills emerge as they key competence that drives development. Finally, enabling innovation in Organizations is a key dimension of the program. The TEMPO elements enable students to cover a wide area of elements that contribute to innovation in social, virtual and physical dimensions.

In order to achieve systemic and integrative abilities, IDBM is also concerned with the development of the abilities to undertake practical processes for creatively resolving complex problems, joining empathy and affect with rational choices to meet user needs and drive business success. The value of this “design thinking” is well recognized in recent research and literature; the key challenge is linked to diffusing best multidisciplinary practices while adopting design thinking within business enterprises. In practice this means adopting a common language in multidisciplinary teams, while maintaining distinct professional profiles. The language barriers created by distinct professional backgrounds need to be overcome before any diffusion is effective. The academic year long industry project exposes students to the complexities of the business environment, forcing them to live with high degrees of real ambiguity and to develop understanding and sense-making strategies in complex, non-linear situations that may be also filled with non-technical agendas and alternative logical frames of thinking. But this exposure is also safe and secure, as it is mediated through a learning environment, with neutral faculty and industry coaches, allowing (and demanding) experimentation and occasional failure.

**Management by design**

In essence, developing a deeper understanding of the elements of management is highly beneficial in the task of creating a common language. Each profession has somewhat distinct practices in terms of planning their activities; engineering tends towards the linear model, while designers tend to an iterative planning process, where many levels of observation exist concurrently. In terms of implementation, professionals have varying strategies, ranging from hands-off to hands-on approaches, with great differences in terms of the roles assumed.

Well executed planning and implementation processes are the key elements of successful management. As the third, control is essential to finding a common language. This is based on
the observation that in today’s hectic business environment, the three elements of management do not occur one after the other but concurrently. This means that we control all the time the planning and implementation as an iterative circle, and the ways and means through which this control is done (with its underlying assumptions) shapes the planning and implementation processes and thus also the contact between professions. Adopting design thinking implies furthermore also adopting agility as a driving principle in business enterprise. Professionals adopt control mindsets in the initial stages their studies, and if we wish to influence this development in order to develop integrative, systemic, and multidisciplinary mindsets, we must learn the control worldviews of other professions early on, before full sedimentation of professional values has happened.

In other words, future effective multidisciplinary professionals must be introduced as early as possible to the mindsets of other future professionals. This should occur in deep interaction, through practice-based learning in real life settings, filled with “secure” ambiguity and significant challenges, so that they can acquire understanding of how others think and exercise control over their doings. This, we argue, creates insights that are valuable throughout life and enable excellence in business through multidisciplinary thinking. And this is what the IDBM program is all about.
Greetings for IDBM:

can you estimate an industry?
“Since its establishment the IDBM has been a successful model of collaboration platform between universities and industries with the unique multidisciplinary approach.”

Mikio Yamashita, CEO, Villa Tosca DMC Japan Inc.
Professor, Takarazuka University, Graduate School

“I look upon IDBM as a sibling. Four years ago, when we went around the world to see where we could find inspiration and experiences for our new master program in Business & Design at Gothenburg University, we visited about a dozen schools. But nowhere did we find anything like what we wanted to have. I think that is rather normal in academia, because every university already has its own world that something new needs be integrated into. However, we found a sibling that we liked and respected and with whom we have had a good collaboration ever since – and that is IDBM. What I especially like is close collaboration with industry. Similar to IDBM believe that design education and research do benefit from intense cooperation and experimentation. Design research – and design management research as well – is not only about studying how things are but very much also about creating a scenario about how things could be, as Herbert Simon put it in 1966. And it is also reflecting about what is happening. To me that reflection is the core of design and design management research. But you need something interesting to reflect about. And that is what I regard IDBM to have. However, there is one thing with multidisciplinary research that is important to be aware of – that you cannot avoid being marginalized. You can never become a really good mainstream researcher if you blend with other disciplines. Therefore, I do have one piece of advice to those who – like IDBM – are situated within a multidisciplinary research area: Be aware that we are a minority and that this needs a paradoxical combination of humbleness and toughness.”

Professor Ulla Johansson
University of Gothenburg, Business & Design Lab

“I became acquainted with the IDBM Program in 1997 when I was working as Design Manager at Nissan Motor Company, which led to deeper collaboration and also helped me to receive the Doctor’s Degree at TKK in 2000. Along with this process and my later involvement with this distinctive interdisciplinary Program, I am convinced by the approach by which IDBM guides students, researchers and companies to create innovative businesses.”

Professor Mikio Fujito
Kyoto Institute of Technology

“Teaching IDBM students has been the most enjoyable and stimulating experience.”

Dr. Brigitte Borja de Mozota
Director of Academic Research, Parsons Paris School of Art + Design

“For a few years now IDBM has become my second academic home. At some point, I was teaching design management more in Helsinki than in Milano, where my primary affiliation is. And even now the content of my sessions is constantly evolving as, in Helsinki, I refine my classes, cases, and discussions first experimented in Milano, and vice versa. Indeed, throughout these years, my understanding of design and design management has truly benefited from exposure to the varied perspectives of IDBM students, and the wise pragmatism of the IDBM staff. You often hear about the importance of building joint programs that encourage the collaboration between future designers, managers, and engineers. Well, IDBM has done it for a long time. And it has done it very well. This very book, together with the wide network of proud former students and the strong international reputation of the program, attest to the capacity of the IDBM people to build, over the years, a program that balances conceptual rigor, empirical grounding, and – what’s more important – practical relevance. What makes IDBM special for me, though, is also the warmth that surrounds me every time I come to Helsinki. More than a program, IDBM feels like a family to me. IDBM is an impossible dream built magnificently. I am looking forward to the next fifteen years!”

Professor Davide Ravasi
Bocconi University, Milan

“IDBM has contributed well to a vision that brought growth and innovation in Finland in a way that was admired by many. It definitely means training and materialization of new concepts and products in a cross-disciplinary context. The fact that the Aalto University also rests on the same pillars of design, technology, and business is really a “cadeau” to the team. Yet, there may be more to come. We may be facing a new era, where the old regime of mass production, consumption, and communication may be replaced by a knowledge society. It does not look like an easy challenge, but the IDBM structure may be what is needed with its focus on material production, innovation and cross-disciplinary collaboration. As we have seen many times before, visionary thinkers of the enlightenment and their predecessors and followers have seen this coming. Thinkers like Diderot and D’Alembert understood well that the knowledge of both the brain and the hand had to go together to bring enlightenment. Inspired by Spinoza’s reach to the old Greek system of coherent, integrated and incisive system did they create a document of knowledge combined with visions for what was required of a society to build on this. Later thinkers like Kropotkin and Arendt stressed that it was through the mutual adjustments in work related contexts that the civil society had to emerge, not through a “contract” where the population votes, but otherwise passively watches the political spin from a distance. By showing the way, IDBM can bring people, work and growth to the core of society.”

Professor Tore Kristensen
Copenhagen Business School
"I think the overall experience of working with different kind of persons helped me to learn about myself and to elaborate my team working. It has also been very useful to show that you have experience in working with people from different areas. It gives you a possibility to show that you are able to do so also in the real working life."

"My background is in business. IDBM has opened doors for working in more creative industries like advertising, design, technology."

"I ended up as a conceptual designer for internet services, and my job requires daily interaction both with visual and technical people. Studying just marketing would not have opened these doors."

"Working as entrepreneur you need variety of skills and the career is what you make of it. Through studying in IDBM I’ve learned a lot of useful things way beyond my own department."

"I understand much better how much I need experts of other fields (and how much I should respect their professional skills) in addition to engineering to successfully carry out projects and new product development. Cross-scientific groups really have forced me to better achievements."

"It is easy to recommend IDBM to anyone interested in internationalization and design."

"Through IDBM my view on the concept of design itself was redefined. It was no longer about products as object, but the whole network of relationships and connections between the people and of course products too."

"The fact that the IDBM program is becoming more and more well known has opened doors and initiated interesting discussions."

"The people I have learned to know in the IDBM Alumni have put me into contact with opportunities in both business and foreign academic institutions I wouldn’t have dreamed of before the IDBM program."

"Design management positions were open for me thanks to the program that wouldn’t be possible for junior designers."

**IDBM Alumni (from survey 2010)**

"IDBM opened my eyes to new things and opportunities and to look at them from different perspectives. There are a lot of things to learn from each other and that’s what we’re doing. It is challenging, but extremely interesting."

"IDBM has made think differently and in a more holistic way on business; also the company strategy approach created a good platform for jumping off from educational life."

"IDBM is taking what is essential for future and bringing it together today to guide students from different backgrounds of culture and discipline down the path towards success. You break the boundaries. Not only do you learn, grow and develop, but you get inspired... You succeed!"

"IDBM reaches beyond the modern schooling system by enabling students to flourish within broader fields of science and culture. In a way it looks back at the interdisciplinary principles of Bauhaus and the traditions of ancient Athens by opening the academic playfield for creative minds."

"While industry demands ability to work in multifunctional teams and preaches things that do not happen inside the box, educational institutions are still stuck in administrative and bureaucratic constraints failing to inspire academics to fully explore their potential. IDBM strives for tearing down these constraints, and offers students the opportunity to build on their capabilities; by creating an environment that enables mutual inspiration."

"IDBM is a good start to explore the benefit and effectiveness of interdisciplinary creative collaboration. The way we work should always be adjusted so that the best result can be achieved. We are still learning."

"I am not punished for being a kid again."

"IDBM brings a sense of intimacy from being inspired by other people. Maybe not necessary to knowledge or education, just something that needs to happen now."

"IDBM is a studying environment that supports us in becoming what we were meant to be."

"IDBM is a boot camp of design thinking. If you want to live in crossroads of design and business choose IDBM."

"IDBM is something I never expected from school; a chance to work with different kinds of people from various background, but who all have one thing in common: Enthusiasm to learn new things and challenge the old ways."

"A creative bunch of talented people with different backgrounds can open your mind like no other institution could. It is like the ride of a life time, seat belt unfastened."

"For me, one of the most important things about IDBM has been to get to know different backgrounds and approaches better. That has helped me understand where we stand and find common ground, communicate and work better together."

"Most schools destroy creativity – IDBM does not!"

"$1 + 1 + 1 > 100$"

"The course is what I expected and more, but the real value is to be found in the community. The inspiration of motivation from people that challenge and push each other; I feel like we are all shaping this, I can see myself in this, I see everyone in this."

**IDBM 2010-2011 students**
can you visualize a process?

Introduction to IDBM research

Toni-Matti Karjalainen
In addition to mastering the graduate-level program and practice-based industry projects, IDBM has carried out its own research and participated in the development of the international community in design management research. Since the beginning of the Program, different research activities have emerged, including numerous master theses and special reports conducted within the IDBM sphere, let alone the research components of the industry projects. The doctoral theses by the editors of this book, Markku Salimäki (2003, HSE), myself (2004, TaIK), and Mikko Koria (2009, HSE) have formed the foundation of IDBM research on the doctoral level. Preceding them, Eija Leiviskä collected data for his PhD (2001, HSE) by studying creative interdisciplinarity within IDBM student projects.

The more extensive and systematic development of IDBM research activities started in 2007 as part of the wider evolution towards the new version of IDBM within the incipient Aalto University. Since that, we have been able to substantially increase our research activities, as a number of new projects have been initiated and conducted. The collection of recent IDBM publications consists of around 60 articles in journals, conferences, books, and other media (see the list at the end of the book).

In line with the generic goals of the Program, IDBM research has the aim to generate systemic and multidisciplinary knowledge applicable to global business development that is design- and technology-intensive. IDBM functions on the cross-point of disciplines, integrating relevant parts of existing disciplinary views and epistemologies, and developing new theoretical and empirical perspectives on the multidisciplinary interaction. IDBM research is strongly based on empirical data and industry interaction. It nurtures an explorative, creative, and open-minded approach in order to be agile and reactive towards emerging phenomena within design and creative industries.

Research themes and projects

**IDBM Research** is constructed around (but not limited to) three main research themes:

1. **Design management, strategic knowledge (Why?)**
   - Subtopics: strategic knowledge applied to the management of design and product development, design’s role as competitive element, the benefits of design (effectiveness and efficiency), design thinking, the philosophy of science of multidisciplinary research, design and marketing, multicultural design management, design and innovations.

2. **Integrated multi- and interdisciplinary processes in design, business and technology, process knowledge (How?)**
   - Subtopics: team effectiveness, creative processes, multidisciplinary learning and team work, cultural knowledge and sensitivity, multidisciplinary pedagogy (teaching and learning), multidisciplinary and cultural innovation processes.

3. **Design for brand and product identity, product knowledge (What?)**
   - Subtopics: strategic brand and product identity, visual design management, design semantics, concept development, design and brand platforms.

At the time of this publication, three externally funded IDBM research projects are in progress. All of them comprise a mixture of post-doc, doctoral, and master level research and active industry collaboration.

The “VIP - Messenger Package” project (2008-2011), funded by Tekes - the Finnish Funding Agency for Technology and Innovation and the participating companies, is conducted in collaboration with VTT Technical Research Centre of Finland (project coordinator) and the Association of Packaging Technology and Research (PTR). VIP project aims to provide solutions and guidelines for more efficient and intensive package communication. Focus is on integrating technology, marketing and design expertise and knowhow, and particularly on the communicative and strategic aspects of package design. Strategic branding and visual communication have been the specific themes in the IDBM part of the project. Visual communication in the case of selected package designs has been analyzed and new innovative package solutions created during the project.

“BogFires - Best practices of globalization in Finnish music export” (2008-2012) is a project funded by the Academy of Finland (http://bogfires.blogspot.com). It investigates the export and globalization structures and practices of Finnish rock bands, with a particular focus on the phenomenon of Finnish metal in international markets. The conceptual framework builds on research literatures in international business and entrepreneurship, visual brand management, and design theory, as well as sociology and cultural export. BogFires project has brought valuable insights to the core areas of IDBM, design and design management, from another creative field.

“EDEST - Employment of Design Strategies” (2010-2012) is the latest IDBM research endeavor, funded by Tekes and the participating companies. EDEST analyzes the practices and structures of design management in selected companies on both organizational and process level, and by doing so aims to open new insights into strategic use of design in business.

A number of doctoral and master theses are also in progress in different Aalto schools, supervised and/or mentored by the IDBM staff. We are also engaged in research activities with our international research partners, particularly in Europe and Asia. IDBM has adopted an active role in developing the international research community within design management and other multidisciplinary research fields. Collaboration with partner universities occurs on various levels, including information exchange, joint research projects, joint events, researcher exchange, lecturer exchange, visiting professorships, to name a few. In addition to generating research, our idea is to provide an open arena for discussion and development. An example of such a community service is the EDES MAN (European Design Management) network that was initiated.
in close collaboration with our partners and has been concretized in three international meetings (2008 Helsinki, 2009 Gothenburg, 2010 London) and increased research collaboration between the partners.

**Papers in this book**

To reflect the various themes of IDBM-related research, we have compiled a collection of eight specific research papers in this book. These articles have been written both by the IDBM staff and a few research colleagues of ours. This paper collection doesn’t necessarily give a comprehensive overview of all the areas and specific topics that we and our colleagues have been scavenging in various projects. The idea was neither to include finished “high-profile” papers in this very book, but merely to select texts that incorporate themes that, we think, are highly topical in the IDBM context and can stir up some interesting debate and new ideas.

The first three papers explore the topics of design management, strategy, innovation, and design thinking, all of which are central to the first research theme of IDBM. Dr. Brigitte Borja de Mozota from Parsons Paris School of Art and Design discusses the transition that is taking place regarding the role and utilization of design in companies and the society. According to her, this shift calls for new types of skills in design profession and new openings in design management research. The strategic view of design in business is also accentuated by the exploded discourse around the notion of design thinking. Design thinking, as such, has various interpretations and streams of thoughts, which has been identified by Lotta Hassi and Miko Laakso in their article. Their work is partly based on a project conducted in IDBM as an attempt to examine and concretize this important yet disorderly concept. The topic has also been a key point of interest for Professors Ulla Johansson and Jill Woodilla from the Business & Design Lab in the University of Gothenburg. They explore and integrate ideas from three disciplines that influence design management: strategy as the managerial framework, innovation as the marketplace imperative, and design thinking as a way of problem solving.

As an example of the second main theme of IDBM research, multidisciplinary teamwork, two articles by our own IDBM staff are included. The paper by Daniel Graff, Mikko Koria and me tackles the challenge of cross-functional teamwork by building a tentative theoretical model of team effectiveness on the basis of management literature. In the following paper, Sanna Heinö and I discuss how teamwork and project management were experimented through the approach of problem-based learning in a package design development as part of our VIP project. The thematic focus of the package project was on visual communication; how to create and nurture strong brand identities through visual product design. Regardless of the quite obvious differences between the fields of package design and music, such topic of visual identity building is also central to our BogFires project. Our explorations in visual narration practices in Finnish heavy metal bands are briefly discussed in the sixth article that I wrote together with Professor Antti Ainamo from the University of Turku. VIP and BogFires projects, and these two articles in the book, are examples of our intriguing expeditions within the third research theme of IDBM.

Next, Professor Tore Kristensen from Copenhagen Business School provides us with an example of the topical themes of co-creation and co-design that are approached within one of his research areas. The paper scrutinizes how consumers modify their environments in a variety of means to improve their experience of living. Our colleagues Professor Davide Ravasi from Bocconi University in Milano and Ileana Stigliani from Imperial College in London have the last word, but surely not the least one, by reporting on their extensive study of Italian design consultancies. The paper reveals the practices by which different types of design consultancies operate in terms of their collaboration with clients.

We hope that IDBM papers vol 1, for its part, advances our journey towards a more comprehensive understanding of multidisciplinary knowledge and more polymorphous research openings in design management. This book marks a shift to a new phase within the IDBM Program and is a milestone on the path of IDBM research, but, most of all, it was put together to celebrate the 15th Anniversary of the Program. Please feel free to be inspired!
“Design is now embedded in organizations and institutions, and in innovation teams. Consequently, design has become an activity that is more process-oriented and less project-driven. Design creates substantial and financial value for organizations, cities, regions and countries, and this value can be measured.”

Strategic view of design in business
Exploring the value of designer skills in our 21st century economy

Brigitte Borja de Mozota

Part of the paper was previously used for a speech in the International Design Management Research Seminar at Tokyo University on July 30, 2010.
Introduction

Designers have consistently adapted their practices to the changes of environmental contexts with the aim to always invent a better future through artifacts. Historically, whenever the environment has changed, the design activity has reacted by inventing new design disciplines. The recent invention of “service design” or “design thinking” are examples of the design profession’s adaptive strategy. But the design activity is now mature enough to define itself also through its specific skills in our society and economy rather than just through its creative production.

Because of this major shift towards a skills driven design definition, the design research and design management communities should focus on two major changes. First, the end of the “design planet” has its implications on the aspects of design as an industry, design as a profession, design as a function of organization, and design as value in the intangible economy. Second, the emergence of “design as core competency” suggests that the problems managers have to face are beyond traditional design territory and require specific design skills.

The end of the “design planet”

Traditionally, designers have worked as freelancers or in design consultancies. Many designers are now working in organizations for a design department that is also working with outside design experts. Recognition of design value in macro economy results to a major change in designers’ employment situations. New hybrid situations emerge.

Design is now embedded in organizations and institutions, and in innovation teams. Therefore, it is not anymore limited to the elitist “design planet” with design schools and design awards. Consequently, design has become an activity that is more process-oriented and less project-driven; and designers are organizing their profession as an industry among the creative fields. These changes in the design activity also highlight the dual nature of design management as a “single loop” and “double loop” activity (see table 1).

<table>
<thead>
<tr>
<th>Changes</th>
<th>Single loop design management</th>
<th>Double loop design management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design management context</td>
<td>Design profession</td>
<td>Managerial DM</td>
</tr>
<tr>
<td></td>
<td>Creative industry</td>
<td>Business development</td>
</tr>
<tr>
<td></td>
<td>Design Index</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Design in macro economy</td>
<td>Design in organizational design</td>
</tr>
<tr>
<td></td>
<td>Design in organizational design</td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Single and double loop design management.

Through my own research on European SME’s, the “Designence™” design management value model, evidence has emerged to show that design creates value on products, employees and organization through differentiation, coordination and transformation. Design creates substantial and financial value for organizations, cities, regions and countries, and this value can be measured. The design activity is an active part of the intangible assets of a country, a city and a corporation. Design assessment tools measure design value through customer capital, brand capital, human capital, organizational capital, and technological capital [3]. Such shift for design management research also affects education, as new approaches are required to educate designers to become “designpreneurs” or “intrapreneurs”.

The change requires more macroeconomic research openings and precise actions such as:

- Creating a design Index or national observatory of design value in macro economy that aggregates statistics about the profession.
- Develop benchmark studies between creative industries on common issues such as comparing managing creativity in the film, multimedia, publicity, or design industries.
- Network with researchers and auditors working on the implementation of the new accounting standards with design included in intangible assets.

When the socio-technical system in society is stable, industry trajectories, infrastructures, institutions, culture, customers’ preferences, scientific knowledge, and technology are all on the same line. But we are living in a period of transition where these trajectories are missing coherence. Through multiple niche innovations that are all experimentations and prototypes of the new world, the trajectories start to diverge. It will take a certain time for all these experimentations to generate a system that regulates itself on new patterns and directing diagrams.

Hence, we live in an economy of paradox and of coexistence of a new system and the old one. A new form of hybrid democracy is building up. The services economy is helping in the mutation towards an “economy of the individual” that is designed for individual persons, not the industries. In this new world, it is “you” who has the power. Accordingly, the old systems have to be reconsidered from “your viewpoint”, and new interfaces have to be invented. Needs and desires are analyzed starting from the perspective of an individual and the actors are networking in order to satisfy that individual. The frontiers between industries are blurring because we are thinking more by “activity” rather than by “industry”.

Designer skills for transition economy

Through holistic or systemic thinking, the designer is able to analyze the aspirations of each individual actor deeply and with empathy. Such thinking can help inventing “myths” or an ideal system for one activity or one actor. And this system will confront itself with the present institutions and the reality of existing networks. An example, our research Project FIDJI (2010) with a consortium of French banks & insurance companies resulted in substantially increased user-oriented and co-design processes in these companies, which changed the whole vision of these industries in terms of their customer relationships.

In summary, this transition economy needs both global vision and an ability to manage the paradox (see table 2). It is not only the services industries but all the companies that have to
think product and services in integration. Organizations are bound to augment their flexibility in order to personalize customer relationships and to empower the staff that is in direct contact with the clients. Similarly, public services and governments institutions must inverse the pyramid and provide service to the client. All public sectors are affected by this change towards user oriented interface, including postal service, telecommunications, transport, employment search, public health, and even prisons.

Consequently, in management, this transition economy is forcing us to reinvent a new way to manage the transition, and to change the governance of innovation. It is necessary to experiment an interactive “process-oriented approach” to management and innovation and this is coherent with the design profession and its thinking mode [10].

<table>
<thead>
<tr>
<th>Traditional industries (e.g. automotive and consumer goods industries)</th>
<th>Services industries (e.g. hotels)</th>
<th>Public service &amp; Government institutions (e.g. health sector)</th>
<th>New service industries (e.g. person to person services)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Create empathy with the client</td>
<td>• Make the quality of service tangible</td>
<td>• Inverse the pyramid</td>
<td>• Innovate by system thinking</td>
</tr>
<tr>
<td>• Think product &amp; service</td>
<td>• Differentiate through services</td>
<td>• Be user-oriented</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Transition towards service integration in all industries.

**Multidisciplinary innovation management**

Innovation follows user-oriented design that improves simultaneously product and process (figure 1). This user focus changes traditional “stop/go”-innovation models, because it necessitates the collaboration of multiple experts. Service design is rather a new way to think, merged with increasingly discussed “design thinking” or holistic thinking. And this thinking is an actor for change in organizations in terms of their innovation management. This is also acknowledged in some multidisciplinary education programs such as IDBM in the Aalto University.

Therefore, I am – as a person, an individual human being – devoted to reconstruct many different industries, and promote alliances between traditionally competing actors. Consequently, in this individual “down-up” economy, the brand power of organizations is fundamental in shaping our mental images that this brand, rather than another brand, is best for me regardless of whatever product or services it offers. The power is in “me” as a human being, with the power of individual choice for “my” brands.

Our “complexity economy” means adopting this “down-up” person-centric attitude. This is the reason for the emergence of design thinking and user-driven design success; their empathetic attitude gives designers new roles. Designers’ research skills and attitudes mean that the design profession can embrace larger issues such as social innovation and, as such, invent new business models. Designers and strategists share a similar entrepreneurial spirit.

**Designer skills define the design profession**

This design management system is based on design viewed as a human activity with specific skills for cultural innovation and user oriented innovation. Table 3 presents a synthesis of designer skills, and the skills (in italics) that are the most relevant ones to our present context. So the most important skills that designers should have include risk taking, experimentation, team work ability, narrative building, holistic thinking, and open-mindedness to transcend the existing barriers of industrial “silos”. Because of the contextual macroeconomic changes and the raise of the individual macro economy, the importance of understanding user insights is becoming even more strategic for the organization. User-oriented design and “design for all” services are essential for this type of innovation.

In this transitional economy, where any individual on the Internet is challenging the role of institutions to regulate the economy, new skills are needed to innovate in the organization’s relationship to the world. Design activity becomes an agent of change for prototyping the new
socio-technical system that has to be invented, as well as for helping companies manage the transition between the old, and the emerging socio-technical systems.

The recognition of design as a function in the organization now justifies a design focus in management and the question of design’s role in organizational design and strategy development. Going back to table 1, this is called double loop design management. Strategic development of unique competitive advantage for a company portfolio in a specific industry is shifting from external “strategy as fit” (according to Michael Porter’s value chain) to “strategy as discourse” or “sense building”, a “rhetoric view of strategy”. And further to a “resource-based view” of strategy focused on building a unique competitive advantage through selected internal core competencies.

Table 3: Designer skills needed in the transitional economy (the most relevant ones are marked with italics).

<table>
<thead>
<tr>
<th>KNOWLEDGE</th>
<th>ATTITUDE VALUES</th>
<th>APPLIED SKILLS</th>
<th>UNDERSTANDING SKILLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design process</td>
<td>Risk-taking</td>
<td>Practical design skills</td>
<td>Observation</td>
</tr>
<tr>
<td></td>
<td>Managing uncertainty</td>
<td>Prototyping</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Drawing ability</td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>Originality</td>
<td>Creative techniques</td>
<td>Researching</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lateral thinking</td>
<td></td>
</tr>
<tr>
<td>Market</td>
<td>Anticipating future trends</td>
<td>Commercial skills</td>
<td>Logical thinking</td>
</tr>
<tr>
<td></td>
<td>Forward thinking</td>
<td></td>
<td>Integrative thinking</td>
</tr>
<tr>
<td>Technology</td>
<td>Proactive in developing relationships</td>
<td>Communication skills</td>
<td>Analyzing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Presentation and report writing)</td>
<td>Prioritizing</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Structuring problems</td>
</tr>
<tr>
<td>User awareness</td>
<td>Open-minded</td>
<td>Computer skills</td>
<td>Scenario building</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Narrative</td>
</tr>
<tr>
<td>Culture</td>
<td>Understanding multidisciplinary context</td>
<td>Design for manufacture</td>
<td>Synthesizing</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Holistic thinking</td>
</tr>
<tr>
<td>Aesthetic awareness</td>
<td>Focusing on usability</td>
<td>Project management</td>
<td>Intuitive thinking &amp;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>action</td>
</tr>
<tr>
<td>Human factors</td>
<td>Attention to detail</td>
<td>Optimization</td>
<td>Consumer and stakeholder needs</td>
</tr>
<tr>
<td>Manufacturing process</td>
<td>Learning from errors</td>
<td>Team work</td>
<td>Human empathy</td>
</tr>
</tbody>
</table>

Design management is shifting also from merely designing the product portfolio or product strategy to both a holistic “design you can see” multidisciplinary process attitude and to a “design you can’t see” attitude. In this view, design is a core competency for a country, city, institution, and company, and embedded in knowledge and intangible assets.

One of the major blank spots on the innovation management map of most companies is inventing the conceptual aspect of company strategy: “The term conceptual is concerned less with merely developing abstract ideas for the future... than with trying out abstract strategies by actually putting them into practice and translating them into tangible product and service concepts” [6]. Decision makers have to face specific challenges now such as managing complexity, globalization and innovation, process oriented companies, socially responsible enterprises where designers skills can help [7].

**Design management research**

**The shift also** creates challenges for research. Design management research should take part and leadership in the debate on “organization as design” launched by organization science journal [9] and on organization studies as a science for design” by organization studies journal [8]. In my opinion, there are three major routes on which design management research can create new value: (1) Managerial route, (2) Meta route, (3) New business model route.

**The managerial route.** The concepts and values of designer skills need to be better understood in order to apply a design approach outside the traditional boundaries. “Words make worlds”, a new vocabulary for management can emerge with design skills: “Agnize, artifact, balance, borrow, boundary object, circulation, client, collaboration, constraint, crystallize, default, dialogue, drawing, emotion, experiment, fit, form, functional, gesture, goal, groundlessness, handrail, improvise, iteration, liquid, love, model, opportunistic, path creating, path dependent, place holder, play, project, prototype, recycle, repertoire, space, study, tension, vocabulary”[1].

**The Meta route.** Fundamentally, the conventional thinker welcomes the world as it is. The integrative thinker welcomes the challenge of shaping the world as it might be. A “meta design” experience is needed: “design strategy as discourse”. The “experience economy” is where new “Meta design” disciplines are needed, to help navigate between existing design-discipline silos. This “Meta design” direction is an adaptation of multidisciplinary design approach.

Strategy as language provokes the formation of mental images of the reality. Interpretive managers question the boundaries. In an uncertain environment, conversation becomes more important than closure. Conversation with the market and the consumer is needed, and a company needs to be both an effective listener and an active participant in the conversation [2 p. 150 ].

The cognitive approach to strategy develops this idea that a company has access to its environment through a selection of representations or mental images of this environment. Postmodern organizations are collages that value creativity. Managers in postmodern organizations are reinventing a management that enhances autonomy and individual creativity. Design managers in postmodern organizations should enhance autonomy and individual creativity:
co-design, user-centered design, inclusive design, etc. The postmodern design manager is seen as an artist or a theorist who focuses on creativity, freedom and individual responsibility. For example, the design manager focuses on self-entrepreneurship, on deconstructing hierarchical power, through the galaxy of projects. Design is now valued as giving voice to silence, voice to previously overlooked or unheard minorities: gender, disabled persons, and employees.

The new business model route. Emanating from a resource-based perspective, as well as a collective-learning objective, another view of strategy focuses on the internal development, but also on pushing the traditional boundaries of organizations through network management (see figure 2). A resource refers an asset or input to production that an organization owns, controls, or has access to on a semi-permanent basis. Resource-based management highlights how the possession of internal, valuable, rare, inimitable and non-substitutable resources may result in sustained superior performance.

The resource-based view emphasizes the importance of the invisible internal assets such as the skills and values, and consequently regards design process as “design you can’t see”. Design skills are resources and core competency for reinventing new business models. Rather than seeing the present system as more complex, it is the system that has to be reinvented. New business models and new industries will emerge that will change the balance of our socio-technical system within the shift in strategy definition [5].

What has changed in management is the emergence of a mental image of design as a horizontal function in organizations and institutions. Design management is based on skills, process, awareness, research, and knowledge for improving organizations’ capital – whether human, knowledge, cultural, or technological (S.P.A.R.K model of Design Management, [4]).

Conclusion

Managing design as a core competency is a high-risk venture and requires a long-term vision. Therefore, many companies have been reluctant to invest in building design capabilities. There exist, however, a number of companies that have understood that building a sustainable, competitive advantage requires adopting a long-term resource view of design management in order to improve the probability of success in the present chaotic business environment.

Managers have to integrate design theories in their organizational theories, and see the “design science”, design methods and conceptual models, as skills for designing their organizational platforms, structures and organizational systems. This is a challenge for design education. Designers have to reinvent the guilds, and to become more effective entrepreneurs in order to help society at large to face the changes in this transitional period between two socio-technical systems. They also have to re-design their profession as part of the creative industries.

References


Figure 2: The resource-based view of design strategy [5].
“It appears that there are two different streams in design thinking, one in design and another in management. Moreover, academics consider the roots of design thinking to go back to the 1960s, whereas practitioners regard the concept as a rather recent phenomenon having formed during the 2000s.”
Design thinking - a popular but vague concept

**The concept of design thinking** has received increasing attention during the recent years – especially in the management discourse. However, despite of the current hype, there is no agreed view on what is meant by design thinking. Looking into the vast literature related to design thinking reveals two differing discourses on design thinking: one in design, and another in management. The former discourse has its roots in the 1960’s, while the latter is considerably younger. Focusing on the management discourse, this study discusses the concept of design thinking as a set of certain practices, cognitive approaches, and mindset. These three groups consist of characteristics used to describe design thinking in the management discourse. We call these characteristics the elements of design thinking, and present a framework for design thinking that draws on existing literature in the management discourse.

Management magazines have covered stories about the power of design thinking, and during the last years, there have been several books published on the concept [e.g. 3, 24, 28]. It seems fair to say that there is a considerable amount of hype surrounding the concept – which has not gone unnoticed in the academia. Johansson and Woodilla [18] specifically discuss the problematic hype, and describe how it simplifies the situation and eventually leads to backlash. The management literature offers design thinking as a cure to nearly every challenge in business, and today, as Kimbell [22] points out, “in management practice, it seems, everyone should be a design thinker.”

On one hand, design thinking is seen as a remarkable phenomenon in its own right, described for example as a “powerful, effective, and broadly accessible” approach to innovation, “that can be integrated into all aspects of business and society, and that individuals and teams can use to generate breakthrough ideas that are implemented and therefore have an impact” [3, p.3], or as “the next competitive advantage” [28]. On the other hand, there exists significant doubt about the validity and novelty of the concept. Some disregard it entirely as nonexistent, while others view it as nothing new, such as Donald Norman, who writes “Design thinking is a public relations term for good, old-fashioned creative thinking” [30].

However, despite the hype and ample attention, there is no consensus on what is meant by design thinking. The notion of design thinking is broad [8], and the term is considered confusing; there are debates over what exactly is meant by it, and how it differs from creativity, innovation or systems thinking [22]. What seems rather obvious though, is the expansion of design into new arenas and target areas, such as strategy, services or organization design, that go beyond the realm of traditional design that is linked tightly with physical objects [8, 22].

Aiming for clarity and common understanding

**The confusion and disagreement** that surrounds the concept call for investigations that provide clarity and common understanding and pave ground for a more fruitful discussion on the issue. This study seeks to provide such common ground by presenting a three dimensional framework that has emerged from the current management discourse concerning design thinking. Our aim is to summarize how design thinking is depicted in the current management discourse. Emphasis is given to identifying common terminology and characteristics used to describe the concept of design thinking.

This study is based on a review of selected literature and on a set of interviews with experts on design thinking. The study does not aim to present an all-inclusive literature review, but rather focuses on some of the key texts, relevant to the aim of the research; reviewing the current management discourse on design thinking.

There were three groups of literature chosen for the review. First, there is the literature in the management discourse cited e.g. by Johansson & Woodilla [18], and Kimbell [22]. Second, Design Management Institute’s Review and Journal were considered relevant due to their focus on design management and the recent issue on design thinking. Third, The Journal of Business Strategy has published two special issues: *Design and Business* in 2007, and *Practice of Innovation: Design in Process* in 2009. These two special issues were considered relevant due to their specific combination of business and design. From the Design Management Institute’s Review and Journal, as well as from the Journal of Business Strategy, the papers included in this review addressed design thinking directly, i.e. the phrase appeared in the title or the abstract.

Altogether over 50 articles or books were reviewed, of which 31 were useful in addressing the characteristic elements of design thinking, and were used for building the framework. The reviewed literature contained articles describing the point of view of representatives from various prominent organizations, such as HP [35], 3M [31], IBM [7], IDEO [3, 4, 21], SAP AG [17], and UK’s Design Council [38]. The literature also included several articles, where the concept of design thinking was explored by interviewing practitioners and experts [e.g. 11, 6]. The articles found relevant were screened for characteristics or qualities describing the concept of design thinking. These characteristics were collected as concise explications and grouped according to similarity. The resulting elements were then arranged under three unifying dimensions according to thematic similarities.

In addition to the review of literature, interviews with ten experts were conducted as part of the research. The aim of these interviews was to find out where the interviewees consider the origins and roots of design thinking to be and to discuss the three dimensional framework for design thinking developed during this research. The comments of the experts were used to verify the framework in terms of wordings and the grouping of elements. The specialists interviewed for this research included four academics from the field of design methodology and six experienced practitioners with a design education (industrial design or architecture). All interviewees were familiar with the concept of design thinking prior to the interview and had their own understanding of what the concept entails. The interviews were semi-structured, explorative in nature and included discussions between the interviewer and interviewee. All interviews were conducted during 2010 and involved experts from the Netherlands, Finland, and the United States.

We now continue on to the current two discourses in design thinking. After that, based on the study of relevant literature, we present the framework summarizing the management view on design thinking. We conclude with a discussion including suggestions for future research directions.
Two discourses on design thinking

Searching existing literature for a definition for design thinking merely adds to the initial confusion; it appears that there are two differing streams in design thinking. Johansson and Woodilla [18] clearly point out these two separate discourses and name them as the ‘design discourse’ and the ‘management discourse’. The former discusses “the way designers think as they work”, and is an academic discourse with a history of roughly 50 years. The latter discourse regards design thinking as a “method for innovation and creating value”. This management discourse is a more recent one, appearing around the change of the millennium, and focuses on the need to improve managers’ design thinking skills for better business success.

The interviewed experts were asked where they considered the roots of design thinking to be, where it has originated, and around what time. Academics considered the roots of design thinking to go back to the 1960s, whereas the practitioners regarded the concept as a rather recent phenomenon having formed during the 2000’s. Interestingly, the practitioners were mostly unaware of the 50 years of ongoing design discourse on design thinking. Figure 1 summarizes a few responses from the interviews, including views from interviewees representing the design discourse and the management discourse, and presents the key literature the respondents referred to.

As depicted in figure 1, the management discourse places the roots of design thinking at the work of the design company IDEO and Stanford’s d.School, with statements such as “Design thinking ultimately came from IDEO”. Also the interviewees representing the design discourse acknowledge the role IDEO plays in the management discourse. However, they considered that the design thinking paradigm started when “research embarked on finding out what designing is and how can designing as a process and as an activity be improved”. The representatives of the design discourse regularly mention Simon [37] and Schön [38] and go back to 1960’s in their descriptions of the roots of design thinking: “The concept of design thinking begun to formulate after Schön published Reflective Practitioner in 1983.” The interviews highlight the impact the management discourse has among practitioners, underlining the importance of understanding what precisely is understood by the concept. As one of the interviewed academics said, “if we talk about bringing the working styles and methods of designers to other areas of management, then it would also be important to understand what these working styles are, how to establish them, how to apply them and in which context.”

Regardless of all the current discussion, even the most established writers on design thinking within the management discourse (the same holding true for academic discourse) have not presented a comprehensive definition or conceptualization for the concept of design thinking. For example, Tim Brown, CEO of the design agency IDEO and one of the most prominent authors within the management discourse, describes it in quite abstract terms such as “a discipline that uses the designer’s sensibility and methods to match people’s needs with what is technologically feasible and what a viable business strategy can convert into customer value and market opportunity” [4]. Therefore, in the following chapter, based on existing literature, we synthesize the central elements of the ongoing discussion in the management discourse, to formulate an initial conceptualization of design thinking as it is presented in the management discourse.

A three-dimensional framework for design thinking

Analysis of the selected literature discussing the concept and application of design thinking in different contexts resulted in three main groups of elements, or components. These were named as practices, cognitive approaches, and mindset. Each dimension contains a set of elements that were presented as key ingredients of design thinking across the reviewed literature. In the following sections, the three dimensions and the elements forming them are discussed in a compact manner with the aim of providing a clear overall picture of the division.

Practices

The “practices”–category comprises of elements that are closely related to concrete activities, describing tangible approaches, ways of working, activities and the use of specific tools. The elements included in the category include: human-centered approach, thinking by doing, visualizing, combination of divergent and convergent approaches, and collaborative work style.
One of the most prominently emphasized issues in design thinking is its inherent and thorough human-centred approach - “putting people first” [4, 31, 38]. Authors were extremely consistent in emphasizing developing empathy towards and understanding of the customer/users [4, 7, 12, 17, 20, 24, 26] and even “being in love” [31] with them. Some authors even go as far as labelling design thinking as synonymous with “customer, user or human-centered design” [35]. The use of observational and ethnographic methods [1, 4, 6, 12, 25] is seen as a key means to achieve a deep and emphatic understanding of the customer. Beyond empathizing and understanding, collaborative design with the customers [2, 4] is suggested as a viable approach.

Thinking by doing refers to the iterative and highly tangible approach favoured by designers. Knowledge creation in design thinking is practical, as the process proceeds through reflection-in-action [33]. The development cycles of the iterative approach are described as systematic [35] and rapid [6, 17, 27]. Early – “from day one” [4] – and continuous prototyping [11, 13, 14, 17] is seen as necessary and beneficial throughout the entire process. Prototypes are seen to facilitate thinking and knowledge creation by means of idea formulation and demonstration [24], to make concepts concrete [35], and to help the exploration of numerous possible solutions [13, 14]. In essence, prototypes can be seen as a tool for stimulating thinking and exploring ideas, not as representations of the products [2].

Closely related to prototyping, visualizing, i.e. expressing oneself in media other than words and symbols [3] is seen as the dominant sensemaking mode of design thinking [33]. Visualization of intangible concepts, models and ideas is seen essential [6, 11, 25], functioning as a tool aiding common understanding [38], allowing ideas to be shared and discussed [20] and revealing relationships that are not accessible in verbal presentations [35].

Combination of divergent and convergent approaches refers to widening the scope and then moving towards a preferred solution by selection and synthesis. The process of design thinking is described as having divergent beginnings, i.e. creating multiple alternatives using various methods [11] without assuming that the existing alternatives, or the first ones that were thought of, include the best ones [2]. The wide range of ideas does not need to be limited to the very early stages, as openness to exploring multiple paths toward a solution [11] is considered important. Recognizing patterns [3, 6, 35] and relationships in the broad number of diverse variables, including conflicting, ambiguous, or paradoxical data is central to design thinking.

Contrasting the age-old and commonly abandoned notion of a lone genius, a collaborative work style is emphasized as integral to design thinking by virtually all authors. The importance of involving a wide range of stakeholders [e.g. 11] is seen as a key approach. This most typically forms the type of using interdisciplinary teams [4, 3, 7, 12, 17, 27, 35]. A collaborative work style is seen as important in tackling complex and “wicked” problems through gaining knowledge from many fields and disciplines [15], promoting diverse perspectives [12], and merging them in a meaningful and novel way [12]. Some authors also emphasize that thinking is not something done exclusively inside one’s head, but is often accomplished in interaction with other people [2], using expressions such as collaborative integrative thinking [12].

### Cognitive approaches

Elements categorized into the “cognitive approaches” –dimension relate to issues such as mentality, cognitive processes and thinking styles. These elements are: abductive reasoning, reflective reframing, holistic view and integrative thinking.

**Abductive reasoning**, or “the logic of what might be” [24], in addition to deductive and inductive reasoning is emblematic to design thinking. Whereas inductive reasoning has to do with proving through observation that something works, and deductive reasoning has to do with proving through reasoning from principles that something must be [24], a designer uses abductive reasoning to move from what is known to the exploration of what could be [14] - to say, “What is something completely new that would be lovely if it existed but doesn’t now?” [12]. Designers use abduction to generate ideas, challenge accepted explanations, and infer possible new worlds [28, p.65]. It’s a skill that plays a critical role in design thinking, and is a pre-condition for intelligent designing [10].

While developing solutions to design problems is a well-recognized skill of designers, the ability to think up new ways of looking at the problem in the first place is key as well [10]. This ability is referred as reflective reframing of the problem or situation. Design thinking is seen to inherently include questioning the way a problem is represented [2], looking beyond the immediate boundaries of the problem to ensure the right question is being addressed [11] and going beyond what is obviously stated to see what lies behind the problem [26]. Identifying, reframing, and reframing the problem to be solved are seen as equally important as solving the problem or finding an appropriate solution [1]. The process of challenging the original problem is not limited to the beginning of the process, but is ongoing, incorporating the findings already gained to re-phrase the problem [11].

The ability to adopt a holistic view - a 360° understanding [17] of the problem including issues such as the customer’s needs, the end-user’s environment and social factors is inherently linked to design thinking. This understanding includes not only the customers’ functional needs, but also the customers’ emotional, social and cultural needs [34]. Some authors use the term systems thinking [e.g. 14] to describe visualizing a problem as a system of structures, patterns and events, rather than just the events alone—and understanding the impact of changes in one component on the others, and on the system as a whole [12], and the ability to connect external form with internal functionality or holistic vision with specific attention to detail [38].

One of the foundations of design thinking is said to be bringing competing constraints into a harmonious balance [3]. Most authors see this as being achieved through integrative thinking, which is about identifying salient aspects of problems [4, 12] and being able to face two (or more) opposing ideas or models. And furthermore, instead of choosing one versus the other, to generate a creative resolution of the tension in the form of a better model, which contains elements of each model but is superior to each [4, 14, 12]. Design thinking is seen to include achieving a natural balance between the technical, business, and human dimensions [4, 7, 17], balancing human-centeredness with company-centricity throughout the cycle [35], reliability with validity [28, 34], exploitation with exploration [28], and analytical thinking with intuitive thinking [28, 31, 35].
**Mindset**

The mindset-category refers to the mindset of both the individuals immersed in the work and the mindset portrayed by the organizational culture. Here “mindset” describes the orientation towards the work at hand, and the mentality on which the problems are approached. The identified elements describe design thinking mindset as being experimental and explorative, ambiguity tolerant, optimistic, and future-oriented.

An experimental and explorative mindset is a seen as a key feature of design thinking [4]. This includes a license to explore possibilities [13] and a willingness to risk by pushing the limits of both personal and a team’s capacity, as well as the capabilities of technology and the boundaries of the organization [17]. Design thinkers are said to pose questions and explore constraints in creative ways that proceed in entirely new directions [4]. Mistakes that follow from exploration and experimentation are seen as a natural part of the process. “Failing fast” through early tryouts, models and prototypes is seen as a preferred strategy enabling exploration with reasonable levels of risk [3, 26]. In addition to an acceptance of failures on an organizational level, exploration also requires personal courage [14].

The mindset of design thinking requires a high tolerance for ambiguity. In the field of design, ambiguity is accepted as a natural part of the process [33] as the inquiry is rather emerging than deterministic [8]. Therefore a key feature of the design thinkers’ mindset is being comfortable with the ambiguous [11], and maintaining the ability to work in the face of ambiguity. The design mindset is noted to “foster an acceptance of and a comfort with a problem-solving process that remains liquid and open, celebrating new alternatives as it strives to develop a best design solution.” [2].

Design thinkers are also seen to possess an optimistic mindset. They assume that no matter how challenging the constraints of a given problem are, at least one potential solution is better than the existing alternatives [4] and present an absolute unwillingness to give in to constraints and obstacles [13]. Design thinking is associated with enjoying problem-solving and finding opportunities in places where other people have given up [15], as well as with an appreciation for constraints, as they serve to focus scope of the work and increase its challenge [27]. Competing constraints are accepted willingly and even enthusiastically [3] and they are seen even to increase the challenge and excitement [12].

Finally, design thinking can be described to be future-oriented. A common characteristic of design thinking is the ability to anticipate and visualize new scenarios [27, p.86]. Design is seen as improving an existing situation into a more preferred one, and designers are therefore always dealing with change [20]. Due to this desire to create change for the better, design thinking is described as having an urge to create something new through challenging the norm [11]. As the driving logic in design thinking is that of ‘what could be’, the starting point for work is more often a strong vision than the status quo [ibid]. This future orientation is long-term, and the forces guiding the vision-driven process include intuition [28, 31], and hypotheses about the future [28].

Figure 2 summarizes the described elements of design thinking, and suggests a three-dimensional framework explicating the management view of design thinking. The framework presented here is more suggestive than conclusive and forms a basis for the future research of the authors.

**Towards a deeper understanding of design thinking**

The research presented here set out to pave way for a more commonly shared understanding on the concept of design thinking rather than attempting to produce a decisive definition. This study proposes a framework depicting the dimensions and related elements underlying the concept of design thinking within the management discourse. The framework builds on existing literature on design thinking, and it describes the concept as consisting of three dimensions: practices, cognitive approaches, and mindset. Each dimension consists of ‘elements of design thinking’ – approaches, methods, values, and concepts that continuously surfaced from existing literature.
There are several recurring themes crossing the boundaries of the three groups. For instance, “thinking by doing”, which entails e.g. early prototyping, is represented in the practices, but it also manifests in the mindset dimension as the explorative nature of design thinking. Similarly, the future-oriented mindset of design thinking is manifested also in the cognitive approaches as abductive reasoning – the continuous strive to think of “what could be”. The elements described above are not separate units, but rather form an entity that may be called design thinking.

The proposed framework was presented and its dimensions and elements were discussed in the expert interviews. All experts agreed that the elements presented were relevant to the way they perceived design thinking. However, two elements were considered to be understated: the central role of intuition as opposed to mainly analytic approaches, and the role of design in synthesizing information. Considering that the experts interviewed for this research represent both discourses, the design and the management stream, it is interesting to notice that their view on what design thinking “is made of” did not differ. This leads us to ask: How do the characterizations of design thinking in the two discourses differ? A comparison of definitions would not be sensible, since, as Johansson & Woodilla [18] point out, no unified theory of design thinking exists, but a comparison of characterizations in the two discourses may be viable.

Many of the writers within the management discourse emphasize qualities and aspects of design thinking that contrast the approaches supposedly innate to business people and other persons outside the discipline of design. Therefore, it is difficult to achieve a balanced holistic picture of design thinking or a designerly way of working. Additionally, authors very seldom present any possible drawbacks or weaknesses of adopting a designerly approach to unconventional fields. Further research should explore what limitations and risks design thinking may carry, and under which conditions it can or should be implemented.

The framework presented here lays the foundation for the future research of the authors. The authors will continue to pursue a more thorough understanding of the concept of design thinking, its roots and current discourse, possible application areas, benefits, and limitations to its use.

References


“In a synergistic dialogue the conversational partners will stand on a humanistic ground and be desirous of harnessing the resources of design thinking, strategy, and innovation for purposes of adding value for all the actors connected with developing and using the product or service.”

Creating a synergistic dialogue among design thinking, strategy, and innovation

Ulla Johansson
Jill Woodilla

Introduction

The three discourses of strategy, innovation, and design thinking have a paradoxical relationship. On one hand, the three discourses are quite separate, with very different origins and purposes. Strategy is an executive discourse that focuses on long-term goals, resource allocation, and decision making. Innovation is a technological discourse that aims to be knowledgeable about bringing inventions to the market. Design thinking is an emerging discourse coming from architecture, design, and art that strives to understand the character of designers’ sense making. It has recently infiltrated the management discourse. On the other hand, there are similarities among all three discourses. They are all used in both large and small companies when referring to growth-intended strategic work. Also, they are used by top management for organizational change and thereby as competitive “tools” for growth.

Here we explore how to make sense of the separate discourses, their characteristics and relationships between them, and how they might contribute to an integrated discourse. How do they relate to each other – are they complimentary or are they competing discourses? In particular, how does design thinking stand in relation to the others? What consequence does this have for the design management discourse?

The discourse of strategy

Strategic discourses generally acknowledge their roots in the discourse of military orders in the ancient world. The word strategy comes from the Greek “strategia”, meaning “generalship”, suggesting goals and directions that were set outside of the sight of the enemy. While this discourse of strategy existed long before it was an academic field, phrases in the management discourse such as “battle of competition”, “winning”, and “rivalry”, are signs of its origins, including Clausewitz’s [17] definition of strategy as “the art of using a battle to win a war” while tactics are “using the troops to win a battle”. Warfare metaphors still inform prescriptions for how to use the company’s resources in order to “win the competitive battle”.

During the 1950s and 1960s, when management struggled for a place in the academy, strategy came to signify creating a specific position in the market. The foundation of strategic management is frequently traced to Chandler’ [13] comparative analysis that identified patterns in the growth of diversified companies during the 1920s and 30s [44]. Chandler, as a business historian, worked with messy empirical data. In contrast, Anshoff [2], with a background in applied mathematics, created analytical tools to help companies create their own position through attention to the five elements of (1) arenas, (2) vehicles, (3) differentiators, (4) staging, and (5) economic logic. Michael Porter [31, 32, 33, 34, 35] further developed Anshoff’s analytics within the managerial discourse and authored many books and articles over a twenty-year period, including a series in the Harvard Business Review. Through these, and many others on strategy and competitiveness for the firm, economic development, and society, Porter continues to be recognized as a, if not the, leading authority on business strategy (www.isc.hbs.edu). His work sedimented the strategic management discourse as normative, static, and a way for the chief executive to formulate a plan before it was implemented by the organizational hierarchy.

During the 1990s other influential strategy streams developed, included those emanating from a resource-based economic perspective (see [5]). For managers, Prahalad and Hamel’s [36] concept of core competencies as collective learning in the organization provided an impetus for working across organizational boundaries and creating alliances while focusing on internal development. While still prescriptive, this theme pointed towards a more collaborative discourse. A more process oriented view of strategy was introduced by Mintzberg [27, 28], who first critiqued the dominant view of equating strategic planning with strategic thinking, and later defined strategy as patterns of action, which turned the strategic discourse towards actor-network theory and its possibilities for mobilizing social networks of relationships in the process of creating strategic differentiation (cf., [22]). Normann and Ramirez [29, 37] coined the phrase value constellation to emphasize that the key strategic task is to reconfigure the roles and relationships among a constellation of actors – suppliers, partners, and customers – to mobilize the creation of value by new combinations of players.

With the new millennium and “flattening” of the global landscape [21] part of the strategic discourse re-examined the structuralist view of firms forced to compete within a landscape dominated by economic forces greater than themselves. Some took a reconstructalist worldview in which market boundaries and industries can be reconstructed by actions and beliefs of industry players, as so-called “blue ocean” strategies [23]. Rather than competing within the existing industry or trying to steal customers from rivals in the “red ocean”, a company can create an uncontested market space that makes competition irrelevant; this is a “blue ocean”. The discourse is concerned with the strategic moves, as managerial actions and decisions, rather than naming competitors or rivals.

The discourse of innovation

The word innovation comes from Latin “innovare”, meaning “making something new.” Innovation is an area consisting of many different discourse streams, with even the discussion around “what is an innovation?” taking on the character of a discourse of its own. The concept is used on multiple levels; the micro/individual level, organizational level, and macro/national level.

Within the academy, the origin of the discourse on the economic character of innovations is attributed to Schumpeter [40] who maintained that innovation and entrepreneurship drive economic development forward. An innovation, he said, is any invention (including a theoretical idea) in use, and thereby also an invention that has reached the market. Schumpeter also made the distinction between incremental and radical or disruptive innovations, thus initiating the discourse further developed by Christensen [15]. Christensen observed that some firms had success with products or services that were not as good as those already used in established markets, but had simplicity or low cost that appealed to a new set of customers. Assink [4] provided a conceptual model of the interrelationships and interdependence of factors inhibiting disruptive innovations.

Following World War II, another innovation discourse originated in the technical universities, and is still growing. This discourse aims to codify the sources, goals, measures, and diffusion
of product and service innovations [1]; over time the technical discourse has become less theoretical and more normative, aiming at understanding the process of making an invention into an innovation, or how to take a new technological idea into the market with commercial success. As this technical discourse grew, critique against it developed; for example, Mensch [26] proposed that the “wave” model of Shumpeter and others be replaced with a metamorphosis model of long-term instability, while Verganti [42] claimed that there are no epistemological borders for innovations, they are whatever is regarded as new to the market, whether physical or not.

A special discourse is that of open innovation [14,43], with roots in computer science, sports products, and R&D practices. This discourse shuns the logic of an internally-oriented, centralized approach to product development, and instead brings external ideas into play with those of internal developers. Here user innovation communities create user-designed modifications, and in turn share these with other users. Von Hippel also introduced the concept of “lead users” and regarded them as co-producers in the innovation process, thereby merging with approaches that are traditionally related to design methods.

**The discourse of design thinking**

*As a third discourse,* derived from the concept of design thinking, is closely related to innovation and has recently become widespread in both design and management circles. Design thinking occurs at the merger of business and design, and has recently become somewhat of a fad in the executive and management realm. Within the academic discourse of design and architecture, however, the concept of design thinking has been around for more than thirty years with forerunners Schön [39] in education and Lawson [25] in architecture, who both in their respective ways described and reflected on how designers think. Lawson, for example, claimed the design process includes formulating, moving, representing, evaluating, and reflecting. Cross [18] joined the discussion with his reflections around “designerly ways of knowing.” He called upon design scholars to recognize that design practice does indeed have its own strong and appropriate intellectual culture, and therefore we should avoid swamping design research with different cultures imported from either the sciences or the arts. The implication was clear, the design discourse must strive to remain the purview of the design community alone.

Another stream formed around the notion of wicked problems, a concept borrowed from philosopher Karl Popper, reintroduced in Rittel’s description of social planning problems as indeterminate [16, 38] and subsequently developed by Buchanan [1]. Buchanan created a new conversation around wicked problems in design, arguing that designers deal with problems that are ill defined, so that the creative re-definition of the problem is part of the professional skill. Later, Edeholt [20] added that designers focus on the reconstruction and the solution of problems rather than analysis of the problems as such — in contrast to the outlook of social and natural scientists. Recently, even some strategy problems have been labeled as wicked problems, for example, if the problem involves many stakeholders with conflicting priorities, if it changes even as solutions are attempted, and if there’s no way to evaluate if the remedies will work [12].

The academic discussion of design thinking has been in play for nearly three decades, resulting about 5,000 scholarly works on the topic (Google scholar, 10/09). However, during the last few years the discourse has turned into a multidisciplinary discussion focusing on how business uses design thinking, and this stream has spilled over into the popular business press (e.g. [19]). This turn is strongly associated with IDEO design company (www.ideo.com) and Stanford D-school (www.stanford.edu/group/dschool), a cooperation between IDEO and Stanford. Here, design thinking is conceptualized as a specific way of thinking and using design methods by non-designers. And this, it is argued, is what the companies need more of. The D-school and its representatives have been apostles for the concept and for the use of design thinking in companies. This thesis is conveyed in the following quote from Tim Brown, former CEO of IDEO [8]: “Most of us are trained in what I would call analytical thinking. Analytical thinking is...good for analysis and cutting things apart and slicing and dicing the world. It’s also good for extrapolation or prediction from the past into the future... (It) isn’t very good for is trying to envision a new future and figure out how to change it. So we try to encourage companies to use what we call design thinking. In design thinking, basically you’re very generative, you’re goal-driven. You’re trying to create a future. Design thinking is rooted in optimism, and the goal to get something done and to bring it to the marketplace.”

**The intersection of the discourses of strategy, innovation, and design thinking**

*As seen* from the literature review above, the three discourses have quite different origins. Strategy came from the military and economics and has become its own strong discourse within management. Innovation originated in economics and entrepreneurship, but has become a discourse of its own within technology. Design thinking emerged from architecture and design and, while it strives to maintain a stream of its own, has recently come into the mainstream management discourse.

Despite apparent differences, these discourses are all engaging with each other within the mainstream management realm as part of the company’s general development and as growth enablers. Until recently, strategy, as the oldest discourse, dominated the conversation. Innovation, formerly confined to the operational level, joined in, because as Kanter [23] notes, “each managerial generation embarks on the same enthusiastic quest for the new thing.” When design (and design thinking) edged into the discourse, wanting to help strategy in competitive positioning, it added to the existing strategic platform – at that time dominated by Porter (c.f. [6,7,10,30]. Design consultants claimed they could participate in strategic planning as “strategy visualizers” or “core competency prospectors” [40]. Articles directed at senior managers suggested, “while by mapping your innovation strategy, you can chart a path that will produce successful innovations time after time” [3], or, even more forcefully, “thinking like a designer can transform the way you develop products, services, processes- and even strategy” [9].
However, there are different ways in which the three discourses can engage with each other in an epistemologically compatible dialogue. In the beginning – with Chandler – strategy was an interpretative and clearly descriptive discourse. It was only later that it developed into a more rationalistic and normative field, and the epistemology became more clearly positivistic. With the development of the concept of “blue oceans” and more process oriented views such as “creating value constellations”, and the epistemology underlying strategy has transformed into a more humanistic discourse, capable of embracing ambiguities and paradoxes, thereby being much more compatible with the design thinking discourse with its humanistic perspective. The discourse on open innovation creates similar opportunities.

**Implications for design management**

The ideas presented above have important implications for design management research. The discourses of strategy, innovation, and design thinking each embrace multiple discourse streams, but each has developed over time in ways that currently make them more epistemologically compatible, or at least each has discursive streams within them that are compatible. This means there is a possibility of creating a synergistic dialogue. In such a synergistic dialogue the conversational partners will stand on a humanistic ground and be desirous of harnessing the resources of design thinking, strategy, and innovation for purposes of “adding value” for all the actors connected with developing and using the product or service. Consequently, design management, in order to influence companies on a strategic level, no longer needs to adjust to a normative/positivist discourse. Instead it can contribute on a more equal level, provided the epistemological ground is more compatible.

**References**


Team members from disciplines like engineering, design and business think, act and behave differently. Those differences effectively create a functional wall that surrounds individuals and hinders interaction among team members. Reciprocal understanding can be acquired through education, training, and cross-functional team experience.”
**Introduction**

*Designers, business managers and technologists* are working together in cross-functional teams to develop new products and services, and to achieve operational effectiveness [7]. Organizations such as Boeing, Coca-Cola, DuPont, Ford, Hewlett-Packard, Federal-Mogul, Siemens and Xerox are only a small sample of companies employing cross-functional teams [1]. That being said, it is argued that research into cross-functional team effectiveness still lacks tools and methods which would be able to effectively describe, examine and explore the issues at hand. Functional team diversity is a complex theme to study, and research to date has provided only weak and/or inconsistent evidence, with mixed conclusions [15]. While e.g. Bunderson and Sutcliffe [4] brought a better understanding to the subject by conceptualization functional diversity, there appears to exist no clear model that incorporates the potential limitations and benefits of designers and managers working together.

This paper addresses this gap in knowledge. It has two main parts and objectives. First, it examines cross-functional team effectiveness in the management literature. Secondly, we develop a theoretical model of cross-functional team effectiveness. Recent management research articles on cross-functional teams were reviewed to determine the methods used to study these teams, with the aim of developing an understanding that can serve as the base for research of cross-functional team effectiveness. This research includes all cross-functional teams (e.g. management teams, project teams), in which team members are from more than one discipline. In this paper we do not differ in terms of cross-functional, inter- and multidisciplinary teams, as we argue that the proposed framework is indifferent to this distinction.

**Literature on cross-functional teams**

*A review of recent management* literature demonstrates a broad and diverse spectrum of writings in cross-functional team effectiveness, with no common focus. Researchers are using different frameworks (e.g. input-process-outcome framework, input-mediator-outcome framework), different methodologies (e.g. experiments, surveys) and focusing on various factors, such as inputs (e.g. contextual- level influence studies), processes (e.g. empowerment) and outcomes (e.g. quality of service provided). As a result the existing knowledge of cross-functional teams is incommensurable and splintered, failing to achieve the consistence needed from a cohesive body of knowledge. In the functional diverse team literature, we can find, on the one hand, that diverse teams can be more innovative [3], can develop more precise strategies [2], and have advantages over functional homogenous teams in introducing some organizational changes [23]. The positive effect of diverse teams is based upon the theoretical perspective of information processing [13]. Information processing states that diversity in teams will increase the range of perspectives and enhance opportunities for knowledge sharing, and thus improve the outcome in terms of quality and creativity [13]. On the other hand research shows that functional diversity also broden opinion and perspective within the team, which can lead to increased conflict [18], slower competitive response [10] and lower performance [19]. These research studies are often based upon the similarity-attraction paradigm and/or self- and social categorization. Similarity-attraction paradigm and self- and social categorization argue that individuals are more attracted towards other individuals with similar traits, and hence experience less cohesion and social integration in functional diverse teams [13]. All in all, we can assert that performance outcomes in diverse teams are inconsistent.

**Team effectiveness**

*McGrath [16]* presented the Input-Process-Outcome (IPO) framework (see figure 1). Inputs explain individual, team and organisational factors that allow and restrict members’ interactions. These factors, which steer team processes, consist of individual team members’ characteristics (e.g. competencies, traits), team-level factors (e.g. task structure, team size), organizational and contextual factors (e.g. environmental complexity). Team processes describe how team members’ interact and work together to achieve the assigned task. Outcomes include performance (e.g. quality) and team member’s affective reactions (e.g. satisfaction) [15].

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Figure 1: Input-Process-Outcome (IPO) framework (by McGrath in [15]).

Although this model has been shown to be of value, it has received criticism for not including time as a factor or to distinguish among multiple types of processes and outcomes [e.g. 6,11,14,15]. This critiques led to the development of input-mediator-outcome (IMO) framework (figure 2) advanced by Ilgen at al. [11]. The IMO framework addresses the multilevel nature of teams. Individual members are imbedded in teams, which are imbedded in the organization [12]. All three input factors are presumed to be influencing each other, while the outer layers affect the inner layers more than the opposite [15]. The team level inputs effect mediators and outcomes. One variable within the team level input, which received considerable attention in research [15], is interdependence (or interaction) and explains how “team members cooperate and work interactively to complete tasks” [20: 137]. According to Wageman [21] the team...
members’ skills and abilities, as well as the need to share resources within the team, thrive the team member’s level of interdependence. High interdependence takes place when team members work cooperatively and depend on each other’s resources [20].

Marks et al. [14] introduce mediators to the IMO framework. Mediators are divided into the emergent state (e.g. collective efficacy, potency) and process (team members’ action), to demonstrate the importance of other factors than just processes. Emergent states influence team processes, which then again can alter the emergent state [14]. Traditionally team processes have been separated into taskwork and teamwork [17]. Taskwork explained the function a team member must perform and teamwork explained the interaction within the team [17]. The taxonomy of team processes by Marks et al. [14] is a more modern approach, dividing processes into (a) transition phase process, (b) action phase process, and (c) interpersonal processes. In the transition phase, teams focus mainly on evaluation and planning of activities to accomplish their task (e.g. goal specification). The action phase process describes the actual activities leading to the task accomplishment (e.g. coordination). Interpersonal processes explain the teams’ management of such things as conflict and motivation. Those three processes occur within episodes, rather than over the entire life cycle.

One of the key constructs of team outcomes is built by Cohen and Bailey [6]. They divide team effectiveness into three categories: (a) performance, (b) attitudes, and (c) behavior. Mathieu [15] on the other hand split team performances in (1) organizational-level performance, (2) team performance behaviors and outcomes, and (3) role-based performance. The focus of organizational-level performance is on top management teams (TMTs), because of the close relation between performance of TMTs and organizational performance. Team performance behaviors are actions to accomplish the goals [15]. Role-based performance analyzes the degree to which team members have the necessary skills and competences to perform their tasks [22].

The IMO framework incorporates time as a crucial factor. According to Mathieu et al. [15] the two most common ways to include time are (a) the development method and (b) the episodic method. The development models exemplify how teams change over time and that they are different influenced by different factors over time [15]. On the other hand, the episodic model illustrate that teams have to work on different processes during the teams life span. This depends on the task demand, which can recur [cf. 14, 16].

**The concept of functional wall**

The IMO team effectiveness model, while established, is yet insufficient to study cross-functional teams, as its general expression is problematic and it does not take explicitly into account factors such as the functional background of the team members. The issue emerges from the observation that team members from disciplines like engineering, design and business think, act and behave differently. Those differences effectively create a “functional wall” that surrounds individuals and hinders interaction among team members. The thought of the functional wall builds on the dominant function conception [4]. According to Bunderson and Sutcliffe [4] the dominant function of team members is the function in which they have worked most of their career. The conception is based on the assumption that every team member has a certain functional perspective that is acquired through work experience [4] and/or education. The extent to which the dominant functions of team members are balanced or broaden within a team is one of the factors determining the effects of the functional wall in cross-functional teams.

**The principle of jointness**

To overcome the functional wall, team members must integrate and synchronize strategies and activities to achieve the objectives of the team [9]. Douglas and Strutton [9] developed a “jointness” principle, transferring it from the military context to general organization; this paper applies it to cross-functional teams. The principle of jointness introduces: (a) functional competences, (b) reciprocal understanding, (c) cross-functional communication, and (d) trust, together with behavioral norms and organizational capabilities, as factors to overcome the functional wall. Effective cross-functional teams must consist of functionally competent team members, able to successful achieve their taskwork. If functional competence is missing, reciprocal understanding, cross-functional communication, and trust are unlike to emerge [9].
Reciprocal understanding is created when team members know each other’s skills (strengths and weaknesses), goals and concerns, as well as team members’ dominant functional knowledge and their usefulness for the team [9]. Cross-functional communication denotes the “interoperability” [9 p.256]. To operate successfully in a cross-functional environment team members must know how to communicate timely and effective with each other [5] and operate together. Cross-functional communication and reciprocal understanding can be acquired through education, training, and cross-functional team experience [9]. Trust builds upon reciprocal knowledge. While its presence does not guarantee success, its absence increases the probability of failure [5]. When functional competence exists, reciprocal understanding occurs and communication is enabled, trust can be build and the team will be effective. With the absence of any of the four factors team will fail [9].

Cross-functional team effectiveness

Figure 3 builds upon the jointness principle and illustrates the effects of cross-functional communication and reciprocal understanding on the functional wall surrounding team members. The matrix does not include functional competence or trust as variables. Functional competence is a constant and integrated in the abilities and skills of a team member. We assume that cross-functional teams are, important and therefore cross-functional teams are staffed with skilled and competent employees. Trust on the other hand builds upon cross-functional communication, reciprocal understanding and functional competence. Consequently, higher cross-functional communication and reciprocal understanding within the teams will generate higher trust.

![Cross-functional communication and reciprocal understanding matrix](image)

The T describes team member’s skills, abilities, and functional competence, and is surrounded by the functional wall (shown by a square). When cross-functional communication and reciprocal understanding are low, team members’ functional wall is solid and makes it for those team members impossible neither to accept other ideas nor to communicate effectively with other team members. Team members with high/low or low/high cross-functional communication and reciprocal understanding have a more open functional wall (shown by a dashed square), desirable in cross-functional teams. Although cross-functional communication (or reciprocal understanding) can pass through the functional wall, it is not a sufficient condition for cross-functional teams to be successful. If, for example, cross-functional communication is low and reciprocal understanding is high, the team member is able to understand the other team members, but unable to incorporate this knowledge within the cross-functional communication. Consequently, the cross-functional team cannot reach its full performance. Cross-functional teamwork requires high interdependence and therefore team members with high reciprocal understanding and cross-functional communication will perform best in this environment. Their functional wall (shown by a dotted square) is open for other team members’ functional perspective and allows timely and effective communication.

Figure 4 illustrates the integration of the functional wall in to an updated IMO model, named cross-functional team effectiveness framework with a focus on the potential change of the functional wall through the different phases. It incorporates the emergent state construct in each phase of the framework, because the emergent state is dynamic in nature. The outer layer illustrates the organization, in which the team and team members with their functional wall are imbedded. Similar to the IMO model [15], all layers influence each other, whereby the outer layers affect the inner layers more than opposite. Organizational context describes such factors as environmental complexity, and team context explains factors such as task structure [15]. The functional competences, personalities, skills and abilities are imbedded in the team member, who is surrounded by the functional wall, defined by cross-functional communication and reciprocal understanding.

By showing the different levels of the functional wall, the framework does not try to predict the changes in the functional wall; it merely tries to show that the functional wall exists and is able to change over time. The quad arrow illustrates interpersonal processes (conflict management, motivating/confidence building and affect management) established by Marks et al. [14] and describes “processes teams use to manage interpersonal relationships” [14 p.368]. The effective management of interpersonal processes depends on the functional wall: Only if cross-functional communication and reciprocal understanding is high, can interpersonal processes be effectively managed. The framework indicates strong interpersonal processes by a solid quad arrow and very weak interpersonal processes are shown by a dotted quad arrow. Time is included as a development factor, illustrating that the team can change over time.

The two left-right arrows between the two processes and the outcome show that a team can not only advance in their task, but also come back to a previous stage. A Forming phase is incorporated into the Input stage, which is crucial to the outcome and describes the team
shaping. It incorporates the transition phase processes (mission analysis, goal specification, strategy formulation and planning) [14] and the team creation (e.g. introduction). Cross-functional communication and reciprocal understanding will affect the interpretation and evaluation of the team’s mission and hence, complicate the prioritization of goals and the development of the strategy. The process describes tasks, which teams perform to the achievements of goals [14]. The processes of monitoring progress toward goals, system monitoring, team monitoring and backup behavior and coordination occur during this phase [14]. Similar to the forming phase the functional wall has major effects on the team’s outcome. For example, De Dreu and West [8] showed in their study the significance of team member’s participation. Participation depends very much on the level of cross-functional communication and reciprocal understanding. The outcome of the teamwork will have effect on the team member’s future teamwork. The team members learn from their experience, and positive as well as negative experience will influence their functional wall.

**Conclusion**

This paper has examined the question of how to study cross-functional team effectiveness. Through the literature review it was observed that the input-mediator-outcome framework [16] is a good base, but lacks the central notion of a functional wall. The paper proceeded to propose an updated cross-functional team effectiveness model, which takes into account the functional wall.

In terms of the relevance of the research, we note that organizations are increasingly using functionally diverse teams in an international setting, and an enhanced understanding of how to utilize them more effectively is important for future success. This also means that academia has to understand how functional diverse teams work, in order to teach these skills and knowledge to students. This paper contributes to the design research by re-contextualizing knowledge from the management field. More importantly, the developed model will help to structure and direct future research in cross-functional team effectiveness in the field of design.

**References**


“The Problem-Based Learning approach towards new package design development provides a fruitful learning experience for students, the academic staff, and companies involved.”

IDBM student project as a teaching platform for package design

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Toni-Matti Karjalainen

**Introduction**

*Where do good* package designs come from? And where do the good package designers come from? There are no simple answers to these questions since package design does not really fit into any single discipline. Package design is not only engineering, it is not only about marketing and branding, and it is not solely the territory of graphical or industrial design either. Instead, good package design is a result of skillfully combining knowledge from all three disciplines: technology, business and design.

In this article, we illustrate how an IDBM student project can provide an excellent teaching platform for package design. We found that teaching package design with problem-based learning (PBL) approach and conducting a package design project with industry partners can be very fruitful. Students learn multidisciplinary team skills and project management as well as gain understanding on the complex nature of managing package design. Conducting a package design project together with a student group can be insightful and inspiring also for industry partners. In addition to new ideas and new approaches industry partners get from student cooperation, the project can lead to new package design solutions.

In many companies, package design processes tend to be linear and the cooperation between technical, marketing and design experts is often sequential rather than continuous. The way in which a multidisciplinary student team works with package design can challenge companies to question their working structures and encourage the different experts of the company into closer collaboration. Finally, the approach of teaching package design with PBL approach and conducting an actual package design project with industry partners meets the academic learning objectives and provides students skills they will need in practical working life.

**The Messenger Package project**

*Messenger Package* (Viestivä Pakkaus) is a Tekes-funded research collaborative (2008-2011) between IDBM program, VTT Technical Research Centre of Finland, and Association of Packaging Technology and Research (PTR). The research aims to provide solutions and guidelines for more efficient and intensive package communication by integrating technology, marketing and design know-how. In addition to Messenger Package research partners, there are seven industry partners involved in the project. The industry partners represent Finnish carton- and cardboard producers (two companies), brand owners of consumer products (three companies), a retailer, and a design agency.

During the academic year 2008-2009, Messenger Package project provided a learning environment for an IDBM master-level student group. A team of four students was assigned the task to study communicative elements of packaging and provide new innovative package design solutions. The students had their undergraduate degrees in business management, marketing, engineering and graphical design. In addition to diversity of their educational background, students also had different cultural backgrounds: British and Finnish.

Of the seven industry partners of the project, the brand-owner companies were central for this group as they briefed the package design cases for students to work with. Each brand owner chose one product on which they wanted student group to focus and provide new insights on product’s package. The chosen products represented three brands, which were a gift chocolate brand (confectionary), a gardening soil brand (soil products), and a pruner brand (gardening tool). The learning objective of the course was to provide solutions for more efficient and intensive package communication by integrating technology, business and design knowhow (cf. Messenger Package research). Specific emphasis in the IDBM student project was placed on visual brand recognition and package design’s role as a medium of communication. The project lasted almost nine months, which enabled students to build a strong team and establish proper connections with the industry partners.

**Visual brand recognition and package design**

**The main thematic** objective of the student project was to enhance the recognition of the involved brands. Creating visual brand recognition through distinctive design features is considered strategically important for an increasing number of companies. Specific focus is often on product packages, while package design possesses strong communicative power in many product categories. The package is used to inform about the product it covers or supports, to point out specific product qualities and, in specific, to create unique brand experience [1, 5, 6]. In many product categories, product package is often focused as the key marketing element of the product, and the first contact point between product and customer. Already 50 years ago, Plötzch [2] argued that package is the connecting link between company and consumer, and consumer’s purchase decision is dependent on the package. Plötzch’s basic argument seems to hold true even today although the ways how companies connect with consumers and the factors that determine consumer’s purchase decisions have changed.

Companies producing consumer products are confronted with a culture of consumption that is fast and unstable. In order to establish a longer-living relationship with the consumers, a growing need for aesthetically appealing commodities has emerged. Strategic focus is often placed on product package being able to transfer a strong message. In many product categories, package often takes the role as the key marketing element of the product. In the case of low-involvement products (such as daily food products), the package is often the sole communicative device for building a brand identity. Many of these general consumer products are bought frequently and with a minimum involvement of the consumer. At the same time package takes the role of a brand medium also in high-involvement product categories, i.e. in the case of products that need a considerable cognitive effort from the consumer before the purchase decision can be taken. For those products the package can be used to emphasize specific product qualities in order to reinforce the unique brand experience. The package is used to inform about its product, to put forward specific product qualities and above all to create the unique brand experience and image. By integrating different functions into holistic experience, the package serves as a crucial visual interface between the brand and its user.

The growing interest towards package as a strategic brand medium sets new challenges not only for companies and practitioners but also for education. Students aiming to work in
consumer product industry need to understand the different roles of product package, and most importantly, the ways to employ package as a strategic medium for brand communication. However, the traditional ways of academic teaching do not to provide sufficient skills for students to work in multidisciplinary and environments that are typically dynamic and involve high degree of complexity. Packaging and package design are difficult to be taught by lecturing.

Conventional education tends to fail in two areas: firstly, students don’t learn to solve problems in professional practice, and secondly, they don’t acquire “learning to learn” skills which are essential in the climate of continuous change that characterizes working life and professional development [3]. New and more practical approaches to educate students on packaging are therefore needed. The Problem-Based Learning (PBL) approach can provide an educational path through which students can explore the real world of packaging as well as “learn to learn” the working practices within a multidisciplinary team.

**PBL approach for teaching package design in IDBM**

The rapid changes in technology, information and economy call for the new competence such as skills of critical thinking, problem solving, decision making, team working etc. Problem-Based Learning emphasizes a “real world” approach to learning: it is a student centered process that is both constructive and collaborative. It is also based on the premise that students will be motivated to “want to know” and solve the problem posed because it is presented in a context that simulates real situations [4]. PBL has been applied to different fields of education in many countries for over 20 years. It has spread worldwide to various disciplines of higher education such as architecture, economics, engineering, mathematics and law. The basic premise of PBL is that learning starts from dealing with problems that arise from professional practice. In other words, the aim of problem-based learning is to build a bridge between working life and education. PBL gathers and integrates many elements regarded as essential in effective, high quality learning, such as self-directed or autonomous learning, critical and reflective thinking skills, and the integration of disciplines [3].

Tien, Chu and Lin [4] have identified four phases in problem-based learning process: (1) selecting a problem, (2) designing actions, (3) determining learning objectives and (4) linking contents (see figure 1). The first phase is often the most difficult one as a good PBL problem must engage students’ interest and motivate them to probe for deeper understanding of the concepts being introduced. An effective problem should also be complex enough that cooperation from all members of the student group will be necessary in order for them to effectively work towards a solution. For the Messenger Package project, the PBL problem was rather easy to find. Package design issues were interesting for students who could identify themselves as buyers and users of packaged consumer products, and the multifaceted nature of package design provided a teaching platform that required participation from all student members: in order to complete the project, the knowledge-base of each student was needed.

The second phase in problem-based learning process deals with designing actions. The student project lasted for nine months. This period was divided into three action modules, each lasting about three months. The first and the last modules involved much cooperation with academic teaching staff and industry partners, whereas the second module was largely independent working by student team themselves.

The third phase of PBL process is to set the learning objectives. Tien, Chu and Lin [6] suggest that PBL curriculum should state what students must learn, what they should learn and what would be nice for them to learn. For the package design project the learning objectives were not defined exactly in this manner, but the learning objectives were drawn from industry partners’ wishes and expectations for package design, and the general course requirements. Course requirements included: active participation in the team and other course-related activities (lectures, workshops, discussions etc.), researching the topic with empirical methods e.g. interviews and observations, reporting the team activities regularly during the project, and delivering a final report and presentation by the end of the course. Students also had the chance to modify the learning objectives according to their own interest. By enabling students to take part in goal-setting, their commitment and motivation towards the project was increased.

![Figure 1: The framework for problem-based learning (PBL) in the package design project](image)
As illustrated in figure 1, the purpose of the fourth phase in PBL process is to link all the contents and state the questions students are expected to answer by the end of the project. The teacher is mainly responsible for conducting the fourth phase, whereas the three first phases can be worked together with students and industry partners. This process framework provided the general guidelines for the package design project. The three modules of the second phase basically formed the practical structure of the IDBM student project during the 9 months academic year.

First module (months 1-3). During the first months of the project (the first module) students studied literature on branding, package design and research methods. The studied material was discussed together with academic teaching staff and the team made several visual analyses on case products. Students also wrote a blog diary on their reflections on literature and on the packaging observations they had made in supermarkets and contexts of use. Blog diary also included sources of inspiration, such as links to web-pages, magazines, and other visual media. The team even visited Packaging Museum in London and attended the Emballage trade fair in Paris in order to understand the history and the current trends in the packaging industry. To define the strategic intent and brand essence, in-depth discussions and interviews were conducted with company representatives. In addition, a detailed review on current packages was performed to identify strength and weaknesses in visual communication.

The second module (months 3-6). The analysis was then followed by a concept design phase that was further divided into ideation and development phases. First, students were mapping out the challenges and opportunities of packaging, brainstorming for novel ideas, and selecting most prominent ideas into further development. The development phase resulted in initial sketches and concepts, which were then revised in a number of iteration rounds. These phases of the project involved rather independent work by the students.

Third module (months 6-9). The third and final module of the project commenced when the first package concepts were ready. Students had built three new packaging solutions. These concepts were introduced to the company and the academic teaching staff for comments. Students received feedback on the creativity and innovativeness as well as real-life practicality and feasibility of the concepts. While industry partners often advised students to consider the current packaging technology and retailer requirements for packaging, the academic teaching staff encouraged students to be innovative and not to think about possible limitations too much. Such a polarity was yet a challenge for the team but proved to result in interesting package concepts. In this situation characterized by conflicting opinions, which, in fact, also simulates the real-life challenges, the team was given the eventual responsibility to take the package design concepts into direction they found the most appropriate. Finally, prior to the final presentation of the concepts, students had few weeks for the necessary adjustments and fine-tuning of the designs. Attention was also put on the communicative contents of the new package concepts from the perspective of the particular brand in question, as this was the underlying theme of the project.

New package design concepts for Fiskars pruners

Finally, we take the example of Fiskars pruners to illustrate the development of packaging designs for a specific brand, as one of the many products included in the project. In the case of Fiskars, devotion on product functionality was seen as the brand essence. Fiskars tools have a strong history and reputation of a producer of highly functional and ergonomic products. Fiskars well-known signature orange-handled scissors (in production since 1967) are a good example of excellent functionality.

The development of Fiskars’ gardening tools is also based on the same functionality and timeless design language the scissors have created. Fiskars products are lightweight and easy to use, including innovative mechanisms that enable people with even limited strength to use them effectively. Fiskars tools are recognized by their strong contrasting orange and black colors, giving them a powerful and reliable appearance. In overall, Fiskars product design is considered simple and honest.

These values, the brand essence of Fiskars, and strong products should be supported by packages in which the products are displayed in stores. The aim of the analysis and concept design was to find new ways to enhance the visual communication of packages as well as to support and even further strengthen the Fiskars brand. The key attributes of Fiskars that should be communicated through package design were high quality, experience, nature, style, and professional. Moreover, packages should help consumers to easily discover the use purpose of the product.

In the first module, the student group analyzed current packages to see how well they correspond to the Fiskars brand essence and clear recognition of the use purpose. One example, the packaging of the Fiskars Power-Lever® pruners that was in the market at the time of the project, is shown in figure 2. Fiskars has a wide portfolio of gardening product families, and each product family contains a wide range of different type of tools. Consequently, communicating the use purpose of the product is a challenge. Just by looking at the product, a customer should clearly recognize the product as a Fiskars, understand what is the product used for, and how it should be used. These aspects are an eliminate part of Fiskars brand essence. From this viewpoint, a detailed analysis was performed on the various design features of the current packages.

The analysis concluded, first of all, that the basic concept and shape of Fiskars package is rather idealistic in terms of material usage, information sharing, functionality, and creativity. However, development challenges were identified within the form and graphics that was regarded as not communicating the expertise of the company and the use purpose of the tools in the best possible manner. In specific, three focus points for development were identified; the overall appearance, infographics, and colors.
First, the overall appearance of Fiskars packages is currently very technical, which, on one hand, well reflects the functionality and technical performance of the products. On the other hand, a high number of technical details and complicated product names can easily alienate people. A more playful appearance could differentiate Fiskars products from the competitors and also invite potential customers to more easily approach the products.

Second, infographics are currently used to indicate the use purpose and functionalities of the products. However, they may confuse users as the visual formats vary and not all infographics are self-explanatory. If the infographics fail to serve their purpose, the user is easily misled, which is against Fiskars brand essence. The solution to enhance infographics would be to streamline and downsize them. Infographics should be clearer and all follow the same format.

Third, the current stands on which Fiskars products are displayed are easy to recognize by their strong orange and black color. The product also looks good in the package and reflects the values of strength and good quality. However, when the stand is looked at from a distance, the shape of the well designed product fades to the similarly coloured background. Moreover, it is difficult to distinguish different products from each other. One solution to enhance communication would be either to change the background colour of the package e.g. to white, which would more clearly detach the product and its shape from the background. Another possibility would be to change the proportions of colour usage (orange and black). Black is now perhaps too dominant since the product itself is mainly black. Hence, the proportion of orange colour should be raised.

These three areas were in focus when new package concepts were next designed by the students. Figure 3 presents the concepts that were developed during the project. In the first concept, for instance, a more dynamic appeal was sought after by increasing the amount of orange color on the package. This was meant to highlight the beautifully streamlined figure of the product and to prevent the product from fading into the background. The product looks as good as it feels in hand, which the package should also emphasize.

In the second concept, specific background pattern were used for specific models in order to help the customer to recognize the technology in question. It was noticed that the true benefits of the technologies, (PowerGear, Power-Lever, PowerStep, etc.) are not communicated clearly by the current packages. Furthermore, the infographics were replaced by more expressive texts.

The third concept addressed the issue of creating a more human and light-hearted appearance for the product. This was implemented by changing the background color to white and by adding a clearly written story about the proper use purpose of the product on the package. The white color was also used to emphasize the impressive figure of the product.

**Conclusions**

In the **VIP project**, the quality of student work was acknowledged particularly by the companies involved. The ideas and concepts created during the project were highly appreciated by the companies, and some inspirations were used, and will be used, in the development of new packages. Moreover, companies were able to enhance the communication between their internal departments and teams through this multidisciplinary student project. In the reported Fiskars case, for example, the company was conducting a large scale product and package renewal at the time of the VIP project and found many student concepts inspirational and helpful in their own design process. As shown by figure 4, the new package designs of Fiskars pruners have lifted the communication of brand values and product use onto a new level.

In terms of package communication, the project has shown that even though the primary role of the package is to support the message of the core product, like in the Fiskars case, it can have a great communicative power as such. The aspect of creating simplicity, clarity, and strong messages was particularly highlighted in this case. Colors were regarded perhaps the most important single element in the Fiskars case where they are one of the strongest elements of brand recognition.
Fiskars case highlights many central themes discussed in the first part of the paper. The project showed that the role of package design in brand communication is central even in the case of high-involvement products like Fiskars tools. Our experience with the project demonstrated that this type of a practical PBL approach towards new package design development and more effective brand communication provides a fruitful learning experience both for students, the academic staff, and companies involved. According to the feedback and course evaluations, students found the project rewarding and motivating. This type of a project is highly challenging and time consuming and requires intensive involvement from the students, but the positive rewards in the form of close company collaboration and realistic product development challenges seemed to overrule the personal investments.

As an educational approach, PBL is a strategic answer to the competence needs of the information society, as also suggested by Poikela and Poikela [3]. These competencies emphasize the skills of knowledge processing, communication, interaction and problem-solving. The shift from knowledge to knowing is reflected in the demand for continuous learning and in the need to repeatedly develop or even change a professional orientation. It is not enough that education provides a sufficient knowledge to be applied in professional practice; education itself has to be able to produce the core competences needed in future.

The project also showed that this type of analytical and practical approaches are needed, in particular, when new ways are sought to explore the perceptual and experiential aspects of package design on a deeper level. Furthermore, this project successfully highlighted the multiple functions of product package both in low- and high-involvement product categories. It turned out to be a potential approach to tackle the multidisciplinary and multifaceted challenges of contemporary package design.

Acknowledgements

The authors would like to thank the wonderful Messenger Package IDBM student team (2008-2009) – Sari Alén, Maija Lirri, Antti Kivinen, and Jitan Pavel – for demonstrating the PBL’s efficiency in teaching and industry cooperation. In addition, we thank the representatives of the three case companies for high devotion and interest during the student project. We also want express our gratitude to all Messenger Package project partners for providing the intellectual, practical, and financial resources to make our explorations in the world of the package design real.

References

“Many enterprises have lessons to learn from the music field, as to how to create consistent and profound offerings that truly speak to the target audience on symbolic, emotional, and meaningful levels.”

Toni-Matti Karjalainen
Antti Ainamo
Introduction

Throughout its entire history, popular music has involved a strong visual component. Album cover art, posters and other print media, stage design in concerts, and other visual artifacts have emerged to create unique emotional experiences for the music audience. Visual artifacts in popular music have helped to co-create meanings in sync with different tonal, structural, lyrical, and other components of the music itself. Visual cues have been instrumental in enhancing the cultural meanings of each particular music-playing band and its recordings. Furthermore, visual identity has been a key “competitive element” for many rock and pop bands.

As in any other product development field and meaning creation activity, bands have used visual artifacts in an active manner, as intentional media, to transfer specific meanings for their current and potential fans, to build awareness and recognition of themselves within the music field in general or in some specific sub-category, as well as to raise interest and to support purchase decisions. Visual artifacts have sometimes even constituted self-standing pieces of art. Throughout and on the side of these visual strategies, the popular music industry has gone through drastic changes in the recent decade in terms of technological and structural development concerning music production, reproduction, social mediation, and distribution. Contemporary artists, bands and their various stakeholders have faced growing competition in their quest for international recognition, consecration, and meaning. The number of bands playing and delivering music has increased considerably and the industry has witnessed the birth of alternative configurations of music: catalogue offerings, distributed compositions, and new e-platforms like the iTunes.

In this paper, we focus on (heavy) metal music. Metal music is a genre of music that, across its numerous incarnations and sub-genres, is a major sub-field of popular music. Within this genre, visual imagery has played a notable role in the musical experience since the emergence of heavy metal in the late 1960s. This is highlighted, for instance, in a quote from the “Rock-Suomi” (“Rock Finland”) TV documentary that was broadcasted in the autumn of 2010 by YLE, the national public broadcasting corporation in Finland (translation by the authors):

“An essential part of the attraction of metal music is not only how it sounds but also how metal looks. Album covers, dressing, stage constructions, posing in photos, facial expression, postures, spectacular shock effects, and small details telling about the extremely precise aesthetics of the sub-culture constitute the visual code system of metal. The visual imagery of metal may appear as a stream of frequently repeated clichés for the external world, but with a deeper scrutiny it is full of nuances and signals that unfold only for the true fans. The external appearance of Finnish metal may look consistent in its dark seriousness when looked from the distance but a closer look will reveal surprising difference in tone and message.”

The quote suggests the importance of the typical idea of situational and context-dependent meaning creation that occurs in creative and cultural sub-genres. The quote also highlights the importance of the visual dimension in the case of certain Finnish metal bands. In Finland, heavy metal has grown into a mainstream genre and also become a main “export item” of the Finnish music scene. After our initial analyses and observations of numerous Finnish metal bands, we have noticed that they have paid careful attention not only to the skilful and distinctive music which they compose and perform but also to the overall concept including visual identity. We find that the communicative dimension of their appearance and their visual cues, in particular, play an important role in their success. More specifically, we find that it is often the Finnish origins that give these bands, their concepts and songs, and their visual expressions, a unique accent that is either implicitly or explicitly – and very distinctively – utilized as a communicative element.

BogFires project

We are making an attempt to explore visual meaning creation in heavy metal in the BogFires Research Project (Best Practices of Globalization in Finnish Rock Export, http://bogfires.blogspot.com), one of the research enterprises of the IDBM Program. The project, in general, focuses on the commercial side of music export and production and comprises three main themes:

1. Principles and practices: Theorization of “Finnish metal” as a process of entrepreneurship, with a focus on both business and cultural entrepreneurship.
2. Structures and gatekeepers: Description of the distribution networks and core players in the Finnish music industry, with a focus on the process of internationalization of Finnish metal bands.
3. Contents, concepts, and brands: Identifying the instrumental, aesthetic and symbolic mechanisms in Finnish metal, with a focus on understanding the interaction of the various band-specific and collective strategies at play.

The topic of visual communication discussed in this paper falls particularly under the third umbrella theme. In practice, we explore how bands create and articulate their concepts and narratives, and how they become manifest in the visual (and, to some extent, also in other) artifacts of the bands. Our explorations occur through a number of case studies encompassing the most notable Finnish metal bands in international markets (Nightwish, HIM, Children of Bodom), other influential Finnish bands in the field (e.g. Amorphis, Sonata Arctica, Mokoma, Stam1na) and a complementary collection of certain foreign bands (e.g. Tool, Dream Theater, Bigelf, Dark Tranquillity, Katatonia, Opeth). We collect data through three main methods: (a) qualitative semi-structured interviews with band representatives as well as graphic designers and visual artists working for them, (b) analyses of bands’ visual artifacts, and (c) observations in concerts. As a subordinate data collection scheme to the three major ones, we also collect data through expert and fan interviews and explorations of music media and other secondary materials. This textual and visual data is explored, categorized, compared, organized and reorganized through qualitative procedures.
The generic aim of the case studies of heavy metal bands as parts of our overall methodology is twofold:

1. To get an overview of visual communication and design strategies in the field of heavy metal music.
2. To generate in-depth descriptive information from selected examples.

In this paper at hand, we focus on generating in-depth descriptive information from selected examples; that is, the second point. Below, we briefly discuss how we have explored visual communication in the case bands. We have previously reported initial findings from part of the cases as well as theoretical developments in a number of other papers (see references [1-5]). In this text, we focus on visual communication in three of the bands: Nightwish, Amorphis, and Mokoma.

**From artistic idea to visual manifestations of intent**

Our focus is on the process by which someone in or around a band transfers, translates, and transforms the “big idea” of the band or its recording into a deliberate expression of “strategic intent” through an artifact-mediated composition. The three case studies reported in this paper each show, at least tentatively, that those in and around the bands are actively and constantly contemplating how to mediate messages originating from their artistic concept. Such contemplation is to some extent evident in specific visual cues the bands have created and in their visual communication more generally. Along the chain of creation, production, reproduction, and distribution, visual and other communication serves to create and re-create meanings that are additional or complementary to concepts of the band, its recorded albums, or other forms of reproduction. In the cases that we analyze in this paper, we also notice that visual communication is a sub-ordinate to the musical profile, artistic volition and integrity of the band. Any artificial branding intentions are not part of the bands’ operation modes.

In our study, we have started to deconstruct this idea to explore the communicative intent that eventually results in certain visual manifestations. Through the analyses of interviews and other material in our case bands, numerous reasons for intentional choices for visual communication have emerged. The main “drivers”, or “intent categories” as we call these constructions, include personal ideologies, overall narratives of the bands, their cultural context and positions within the visual traditions of heavy metal, sub-genre imageries, and the aspiration to come up with unique visual identities per se.

Whether visual artwork is being produced for an upcoming album, poster or another printed or electronic medium, T-shirts and other merchandise, or for concerts, we find that concept and intent are part of the creative process. Creation takes the form of deliberate composition rather than emergent processes of change. The three bands, discussed below, are involved in the building and nurturing of consistent identities. Reflected in their musical profile, they have a concept that is variegated and versioned to produce sometimes distinct themes for individual albums or other deliverables the bands create.

The process of symbolic meaning creation is particularly stressed in endogenous communication where any of three bands wishes to transform its idea to various visual manifestations. In addressing the market needs, thus following exogenous intent, visual media has the primary role of raising attention by building visual references in relation to the visual imagery of heavy metal and the particular sub-genre in which the band operates, the cultural context and background of the bands, as well as other context the bands position themselves.

Let us next look at each of the three bands and the consistent and variegating elements of their concepts. What we find common in the three cases is a pattern where the ideas of a creative individuals are transposed into the bands these individuals founded. The bands are mechanisms to translate the ideas into concepts that also their audiences understand in similar ways. The individuals, their bands, and the audience transform together in ways that is not only a random or emergent process, but a process characterized by clear deliberation and intent.

**Case 1: Nightwish universe**

"It is particularly important that the looks reflect the contents of the album, the songs. For example in the latest album, there was a specific artwork done for each song. We try to create our own Nightwish universe, imagination land, our own NW mythology." — Tuomas Holopainen, the mastermind of Nightwish, in the “Rock-Suomi” documentary (translation by the authors)

Nightwish has been the most famous rock band in Finnish history if measured by album sales and concert audiences. The idea or concept of Nightwish is crafted around the original vision, personal ideology, and imagery of Tuomas Holopainen, the band founder and leader. Holopainen’s strong interest in the fantasy literature and the notion of “escapism”, a kind of fleeing from the real world into the land of imagination, is what has motivated his song writing – in terms of both music and lyrics, the orchestrations of the music, and the sound of the band. The lyrical stories and music have been written and performed to reflect themes of fantasy and mythology. Holopainen’s literary ideas of escapism trace to the literature created and the worlds or multi-layered universes imagined by authors like J.R. Tolkien and Edgar Allan Poe. These two authors are his personal favorites. Besides elements of Tolkien’s Lord of the Rings or the ghost stories of Poe, also many fairytales represented by Disney have been subtly referred by Holopainen in the Nightwish concept. Moreover, another inspiration has been the elements of remote locations and wilderness related to Finnish natural environment, as well as the (stereotypically) distinctive melancholy of the Finnish state of mind. In sum, the idea, the concept and the intent of the band have been to create a unique while also distinctively Finnish narrative, the visual and mental Nightwish universe.

In the Nightwish case, the communicative concept and intent thus appear to be quite strongly driven by psychological and endogenous motives that also affect the musical landscape which Holopainen and his colleagues have created. The musical identity of Nightwish has been characterized by large productions that give the band an extensive, rich and unique sound. Nightwish has been one of the global pioneers in representing the “symphonic metal” sub-genre
in heavy metal music. This sub-genre is made distinct from other sub-genres by virtue of wide atmospheric and operatic arrangements. The wideness of the arrangements in turn produces a richness of nuances in compositions, playing, song structures, and in references to other music styles. Especially in its recent albums, Nightwish has used full orchestras and a number of different instruments to denote its concept. In its essence, the band performs very colorful and imagery music. Atmospheric landscapes are created where styles vary from moody ballads to aggressive metal thumping, from straightforward and simple pop passages into complex and progressive passages, even inside the same single song.

Besides its literary influences and expansive style, Nightwish is also an illustrative example of the use of visual communication as the key element of the band’s artistic idea or concept. To express the idea in the visual domain, Nightwish has used different artists and designers in its album catalogue. As an individual behind the ideas and the concept and the intent behind the music, Tuomas Holopainen has also been in charge of the visual concepts of the albums, although their realization has been done in close collaboration with different visual artists. The Nightwish ideas of escapism, fantasy and mythology are quite visibly communicated by the album artwork. Nature, romantic themes, lonely people in fantasy worlds, strong symbols, colorful landscapes, dark and blue atmospheres are typical for the visual appearance of Nightwish artifacts. The motives for the visual imagery originate both from Holopainen’s visions (even dreams in some cases) and the lyrical themes of the songs. Such a fantasy world appears, in specific, in the varied artwork that a Finnish artist couple Janne and Gina Pitkänen produced for the latest Nightwish album “Dark Passion Play” (2007). In this album, each song was pictured with a unique piece of art.

The Nightwish logo, as logos generally, is seen as a single strong signature element for the band. It has remained the same from the very beginning of the band’s existence in 1996. Interestingly, the logotype was “invented” straight from a standard font collection. But as the style fits well the Nightwish context and as fans have learnt to recognize it, the band has not seen any need to modify the logo. The pendulum, used in the cover of “Dark passion Play” album and motivated by its multifaceted opening song “The Poet and the Pendulum”, has become a strong cue for the band in its many recent artifacts. As noted also by Holopainen himself, the pendulum is a good symbol for the band, while it denotes the Nightwish idea and is also not commonly used by any other metal band. As for other signature elements, Nightwish has used some repeated themes and objects such as an owl, lonely figures such as little boy, girl or woman, and angels. But they have had different material incarnations. And essentially, according to Holopainen, it is not absolutely necessary to use such characters in every Nightwish artifact.

The concept of fantasies and escapism was strongly expressed through various visual elements also in the Nightwish concerts of the Dark Passion Play World Tour (see figure 1). The construction and visual elements of the stage itself, objects such as wooden boat and anchor, and the highly professional and versatile use of lights and pyrotechnics as mood creators, created a very specific atmosphere inside the venues. A dramatic cycle emerged as part of the stage design, whereby the visual landscape and moods were constantly varied in accordance to the different themes of the songs. There were “blue” songs and “red” songs, songs with lingering smoke clouds, songs with fire torches, and so on. Hence, a Nightwish concert aims to deliver an emotional and powerful experience that, in its own sake, has reinforced the Nightwish narrative and adds new layers onto its core idea.

Figure 1: Visual moments in Nightwish concerts (Brussels and Rotterdam) in the 2009 Dark Passion Play tour (photos by Toni-Matti Karjalainen).
Case 2: Amorphis and reification of Kalevala

“Bringing the archetypal blacksmith Ilmarinen to life with a depth of character far beyond the one-dimensional portrait of the hero rendered by the Kalevala, the poetry of Skyforger cements the role of Amorphis as modern-day storytellers perpetuating an age-old tradition in their very own way.” — www.amorphis.net (accessed Jan 25 2011)

Amorphis is another example of consistent concept building and visual narration that, in particular, has firm symbolic roots deep in the Finnish soil. Established in 1991, Amorphis has been one of the pioneering Finnish metal bands in international markets. The band has released nine albums and toured in a number of different countries. What has made Amorphis particularly interesting for many Finnish and foreign fans, and help the band to create a distinctive concept, is the approach of using Finnish folklore and mythology as the basis for the musical identity. If googling on Amorphis, we receive for example a definition stating: “Progressive metal band with lyrics and themes based on Finnish national epic, Kalevala”. This sentence describes the core idea of the band in a clear manner. Amorphis has used the Finnish national epic “Kalevala” (a fictional poem saga describing the stereotypical mentality and historical roots of the Finnish people, compiled by researcher Elias Lönnrot in 1835) as a key ingredient of most of their albums. The Kalevala twist was brought to the Amorphis concept in the very beginning of the band’s history, first indirectly in the band’s musical identity. When recording their first album (“The Karelian Isthmus”, 1993) and particularly realized in the second one (“Tales from the Thousand Lakes”, 1994), the band came up with an idea to use some folk melodies to color up their otherwise quite typical death/black metal sound. And when writing songs for the “Tales...” album, some stories from Kalevala were used as inspiration, because they were seen to connect well with the folk melody lines. And perhaps, the dark and harsh stories of Kalevala suited the death metal scene particularly well.

In most of the subsequent albums, especially in the three latest ones, Amorphis has based its album lyrics and entire concepts on Kalevala. The lyrics on the “Eclipse” (2005) were written on the basis of the story of Kullervo, the most tragic character of the epic (the Amorphis version based on the modification by Finnish poet and writer Paavo Haavikko). The successor “Silent Waters” (2006) continued the story, recounting the tale of Lemminkäinen, another central character in Kalevala, and his hunt for the Swan of “Tuonela”, the underworld in the saga. The most recent Amorphis album “Skyforger” (2009), in turn, told Kalevala stories wrapped around “Seppo Ilmarinen”, the god-like figure of Kalevala who in the saga forged, among other things, the canopy of the sky and the “Sampo”, the mystical device generating the richness of the World. References to Kalevala and Finnish nature are reinforced not only by the band’s musical identity but also by the visual themes of the Amorphis albums and related artifacts. In the aforementioned three recent albums, both the musical and visual identity of Amorphis – a band that in the late 1990s and early 2000 became known for its experimental stylistic changes – has remained rather consistent. Moreover, the albums’ visual appearance (designed by the American artist Travis Smith) has been very coherent. The pictures and graphics of the albums are used to support the storylines of the songs and their lyrics.

Case 3: Graphical thrashing by Mokoma

“We have probably taken part in breaking the visual world of heavy metal. We have brought out our own visual identity through our cover art and the works of Pirinen... To use for example a photo-based album cover [instead of Pirinen's graphics] feels as fierce a thought as changing one of the dudes in the band. We have marked that a band can perform metal music without mimicking any internally written aesthetics of the genre.” — Marko Annala, vocalist of Mokoma, in the “Rock-Suomi” documentary (translation by the authors)

Mokoma was established in the south-eastern Finnish city of Lappeenranta in 1996. The main founder was Marko Annala, who became the singer of the band. After the first two albums, including rather mainstream styled rock and not gaining wider popular recognition, the band took a new direction. Mokoma established its own record label, Sakara Records, in which it had a greater freedom to execute its artistic aspirations. As a result, the band later became one of the best selling metal bands inside the Finnish borders.
Finland being the main market of the band, the concept of Mokoma is constructed on a strong Finnish symbolic sphere, particularly manifested in the lyrics and visual identity of the band. Songs are also written in Finnish, which gives them a specific tone, especially in the metal genre that is still largely dominated by bands singing in English. Some Kalevala-like references, or merely typical Finnish themes, are also found in the lyrics. While Amorphis idea is crafted around a mere symbolic and fictional narrative, Mokoma in turn brings the Finnish heritage, nature connection and mentality to our times in a more realistic everyday manner. Such lyrics seem also coalesce into a consistent entity with the thrash metal style of their music.

Mokoma has managed to create quite a unique and recognizable identity in terms of its music, and even more so, through its visual identity. Along with the establishment of Sakara records, to highlight the new start also visually, Mokoma started collaboration with Ville Pirinen, a Finnish cartoonist, artist and visual designer. His touch first appeared in the form of a highly graphical red rooster on the black background in the “Kurimus” album (2003, literally translated as “maelstrom”), followed by a number of distinctively designed album and single covers. The approach was further expanded, and the style slightly enriched, in the latest “Sydänjuuret” album (2010, “heart roots” or “bottom of one’s heart” in English), in which a unique image was designed for each song (see example in figure 3). As commented by both Annala and Pirinen, their relationship is integral; nowadays it would be almost impossible to think about Mokoma without the graphics of Pirinen. And vice versa, Pirinen’s artwork has become an organic part of Mokoma’s concept. The visual appearance of Mokoma and Pirinen is highly recognizable among metal bands, and even more widely in the field of music. It functions as an exogenous aspect while making Mokoma distinctively recognizable and different in the field.

In addition to bringing a colorful component to the otherwise rather dark lyrical landscape of the band, the visual appearance also reflects the Mokoma idea and musical profile in an interesting manner. As such, the highly graphical style of Pirinen, combining simplicity and complexity in a distinct manner, works as a strong signature element of the band. The style is consistent even though there are no single images or features that would be repeated in different albums. The Mokoma logo is also iconic, although it is not usually used in the album covers. It works as a distinctive and stylistic signifier in their stage sheet, T-shirts and other unique Mokoma artefacts. The same sense or purity, honesty and undressed appearance also dominate the stage design of Mokoma.

Interestingly, high contrasts, and the use of strong colors and lines in the visual style of Pirinen indicate the edgy and, if you will, rather graphical tonal profile of the band. The graphical touch goes well with the riff-based songs. The visual appearance even functions as a type of an instruction to the Mokoma music, how it should be read and understood. In the semiotic sphere, the visual and musical dimensions thus have a strong indexical relationship in the Mokoma case. In this regard, an interesting comparison can be made with Amorphis. Both bands deal, at least in part of their catalogues, with kindred themes of Finnish nature and mentality, but differ quite radically both in the musical and visual expressions of these themes. Amorphis tonal expression is softer, fictive, and flowing than that of Mokoma which appears edgier, realistic, and abrupt. And these differences are reflected in the visual manifestations. It would be difficult to imagine Mokoma covers on Amorphis albums, and vice versa.

**Concluding remarks**

*In this paper,* we have reported on and compared how three Finnish metal music bands – Nightwish, Amorphis and Mokoma – have developed their use of visual cues. The paper’s brief description and analysis of the cases may not do justice to the multifaceted and colorful concepts and histories that each of the bands have, but hopefully provide the reader with insightful examples of visual signification in the area of music.

On the basis of our analysis, there appears a rich variety of visual ingredients at each of the bands’ disposal (album artwork, accessories, instruments, performance visuals, etc.). These ingredients have had great communicative power to transpose the ideas of the creative individual into new visual and creative environments, to translate the concept of the band into a part of popular culture, and to transform the intent of the artistic offering into a part of the culture of the band’s target audience. Hence, as we propose, the visual dimension of each of the bands has played an important role in alluring new followers for the bands and keeping the existing audiences devoted.

In each of the three bands, and also more generally, there exists the ever-present tension between the artistic volition of creative individuals and commercial imperatives and other external calls for intent that the bands face. Within this frame, communication has psychological, endogenous and exogenous goals. In the first category, the idea is what matters. In the endogenous category, the concept primarily reflects the collective concept of the band, “inside-
out”. And in the exogenous category, the primary intent is to address market competition “outside-in” by building recognition and reinforcing differentiation or resemblance in comparison to other bands and the visual conventions and traditions of the genre.

Visual cues and expressions help communicate a creative individual’s original idea in a consistent and believable manner. The adequacy, quality and integrity of the music, songs and albums, may come first because, in the first instance, the offering usually has strong personal and emotional significance for a music fan. The visual identity has been a key component in those holistic and overwhelming experiences that music, and perhaps only music, has been capable of supplying to its relentless follower, as part of the overall appreciation, particularly among members of the dedicated metal audience. Visual media has been an integral scaffold to the core music offering, conceptualizing additional meanings around the core idea, and to intensifying experiences in the store, internet, concert, and in other forums.

Ever since the 1920s, when certain corporations gained success by working with designers, creating products and brands with creative and distinctive visual statements has been a key interest in many enterprises. More and more contemporary corporations use various brand-specific product features (“design cues” or “signature elements”) as strategic media to create and nurture favorable images and reputations among target audiences. Such identity building is now a central concern of not only in the model of the large corporations with mass-produced consumer products – a view dominating in design and management literature – but also for smaller and medium sized enterprises and, increasingly, for micro enterprises. We believe that many of such enterprises have lessons to learn from the music field, as to how to create consistent and profound offerings that truly speak to the target audience on symbolic, emotional and meaningful levels.

References


“Product platforms and modular designs are an opportunity already exploited by many companies. The next important step in this development may be to support consumers in their processes of deliberation and value creation.”

How consumers co-create value

Tore Kristensen
**Introduction**

Consumers constantly modify their environments, particularly at home that functions both as a dwelling and a source to enhance their well-being. Improvements of well-being are realized, and value created, through the modification of space, the interior, organization of objects, lighting, home control systems, surface, colors, and insulation. People proudly show their own creations in their homes, sometimes executed with professional quality, sometimes amateurish. Some do it to raise the price value of the apartment, while others focus on improving their own quality of life. Therefore, it seems that the criteria for judging the designs may differ.

Real estate brokers sometimes advise their customers to make particular improvements to increase the price. Improvements at home may result in a higher selling price than without these improvements. This qualifies the term value creation to also mean economic value. The fact that mortgages permit people to invest, obtain loans, and save or divest cash to adjust their income and consumption over a lifetime, further indicates the status of the home, although this is outside the extent of this article. It is probably more significant for the consumers in the short run that the value creation results in an instant improvement of well-being. Often, when consumers create changes for their personal benefit, they may not consider what impacts this will have on the sales value. And people who live in social housing are sometimes even asked to bring the “standard” appearance back to what it was when they moved in to the residence, even though they have made designs that they personally feel enhancing the living quality.

In marketing, the widespread assumption is that most consumer actions are responses to marketing stimuli before the purchase [23]. The concept of consumer experiences was introduced by Holbrook and Hirschmann [16] in a critique of the prevailing information based paradigm limiting it to the symbolic, hedonic and aesthetic aspects. Holbrook and Gardner [15] the temporal aspects of consumer experiences [15] and Schindler and Holbrook [26] supplemented the notion with the aspect of nostalgia as an important variable and a frame of reference including sex differences. It seems paradoxical that consumers’ creation of value has been reduced to mere consumer experiences. Research has focused on the aesthetic responses of consumers [6].

This research shows that aesthetics and form are instrumental in the experience and liking of an object. It seems inevitable that similar qualities in the spatial settings work in a similar fashion. Since consumers themselves carry out such modifications, these modifications are independent actions and thus cannot be described as merely a result of marketing action.

The “co-creator” research and “co-design” perspective delivers original advances to the knowledge of consumers [6]. This research, however, assumes that consumers depend on marketing action to “co-create” value. Consumers, or rather “users”, are not really dependent on marketing initiatives to create value. This article attempts to address how consumers create value by designing their home environments. The focus is on how consumers’ value creation activities are related to their homes. The next section introduces the home as the stage of value creation. The third section explores how consumers act as co-creators.

**Value creation at home**

When focusing on the spatial elements of consumption, it may be valuable to look at how a house or an apartment was designed by the architect and built by the builder [3]. A house may be considered as a foundation for a home [24]. The long project for a person inhabiting such a house is to make it to fit their character and feelings [2]. This is a lifelong process and might be called “domesticating”, because it is a matter of turning the physical structures into friendly surroundings [9]. It is both a matter of adapting oneself to the place by learning the dimensions and structures [2]. When adapted to a home, a person knows how specific furniture fits there and can navigate with very limited cognitive costs in there, because the house is kind of internalized by him/her.

Furthermore, people prepare the physical environment to their liking. People seek inspiration from a range of sources. Advertising, television programs and magazine articles indicate what professional designers think a home should look like. Such homes may lack individual identity, which comes from the patina and traces of the residents [9]. Real people’s homes mirror the owners beyond stereotypes and market segments. The objects, their seeming inconsistency and complexity make a house into a home. Objects may be highly private and far from functional in a simple sense, but serve as symbolic items and memorabilia. A person who has lived in a foreign country often has objects from that country or a person may have items associated with their work. During a lifetime, a home may become a “mirror-image” of the inhabitant revealing experiences and dreams. The schemes are instrumental of allowing the home to reflect one’s personality. Some objects and plans may be accidents, but by and large, the proposition is that in the long run the adaptations people create follow their preferences and serve to remove irritations, in a way that may be described as “form follows failure” [21]. Common objects like knife, fork and spoon have been adapted by consumers as many times as required to make them useful, fluent and inconspicuous in daily use. Similarly, as the fishing tools of an experienced amateur may have been improved beyond the recognition of the producer [15].

**Design**

Design is an enterprise traditionally conducted by professional designers, educated at a design school, school of architecture or engineering, in cooperation with a manufacturing company. The traditional idea is that consumers appreciate these designs according to their taste and preferences. The designs as such are “frozen”, which means that consumers are supposed to accept them as they are rather than to seek to modify them. An extension of this idea, which means that the consumers also design, or “co-design”, seems quite reasonable. Consumers who embrace professional designs may continue the design process in their homes and create more value by doing so. As probably one of the most common definitions of design states: “Everyone designs who devices courses of action aimed at changing exiting situations into preferred ones” [28].

Herbert Simon stresses the practical applications of many disciplines as contrasted to the scientific knowledge. In the case of consumers, we do not consider scientific knowledge as
such, but rather what is called “folk psychology” and “folk physics” [29]. Such knowledge may be implicit and procedural problem solving. Folk theories, when articulated, may be inadequate or even defective [29]. That makes little difference since what counts here is people’s actual behavior, not their theories. People’s behavior may reflect habits and imitation of other people, often acquired without much reflection.

Consumers as co-designers

The view of consumers as “co-designers” and their designs, “consumer idealized design”, has also emerged in design and product development literature [6]. The approach concerns that design or marketing research consultancies invite consumers to participate in design processes by asking them to work out design questions. For instance, they would ask the co-creator to use clay, plastic, visual collages, constructive toys, or similar materials, for a specific design assignment. In such situations, the co-creators’ designs serve as information input to the professional design process.

Consumers are thought to be experts in their personal lives [1]. Professional designers, in innovative pursuits, can use this knowledge to create “idealized designs”. The methods are also called “co-design” or “consumer idealized design” [6]. Investigations of different aspects of co-creators’ expertise can be both product and process related [1]. The former category concerns product-related experiences such as advertising exposures, information search, interaction with sales persons, choices and decision-making, purchasing, and product usage in various situations. The process aspects, in turn, concern cognitive effort, analysis, elaboration and memory. The model of consumer expertise [1] seems perfectly compatible with both object and spatial designs, as they reflect specific kinds of consumer expertise.

Sometimes consumers perform the whole process of sketching, acquiring resources and crafting the desired changes. They are changing the environment from an existing to a preferred state that makes it a design activity. Many consumers conduct their own designs, often in plain ways such as using packaging for a new purpose. For example, shoe boxes are used for keeping personal papers. Even ready-made objects can be subject to additional value creation.

For durable goods, and elements of buildings, the prospects for value creation are many. Altering the shape, such as lowering the ceilings, changing a door or window, or even a wall, enables considerable changes in the environment. Trying out new possibilities with objects and artifacts may lead to new ways of value creation. Value is created through increased well-being as a consequence of such alterations. Sometimes consumers get professional assistance (e.g. a carpenter) in parts of the process. However, the modifications made by one family may be idiosyncratic and not well appreciated when the house is sold. So in order to create sustainable value, the designer must make sure that others will also appreciate the design. A lot of “do-it-yourself-improvements” are clearly not appreciated by others, due to individual taste or inferior craftwork. When that is the situation, we cannot speak of sustainable value, but only of value for those who appreciated the designs when they were made. This is a challenge for marketing companies who wish to encourage their customers.

Consumers and their homes

In the modern society, “dwelling” concerns both a physical shelter and an environment with a specific meaning. Consumers attribute meaning to what is around them, identify with their home, what they acquire, organize and change in their environments. Surrounding consumers are objects, artifacts, and elements of built environment, even landscapes. Such elements give meaning to consumption and other forms of behavior in the home. It may explain why people continually improve their homes and thus create value. Consumers work many hours in their homes, improving and changing their environment in ways that improve their personal well-being [10].

An early contribution to the understanding of consumers’ value creation was made by Frederick [12]. She applied the recent insights from work organization, “scientific management”, to the kitchen. According to her, the interior should enable rational procedures for the preparation of food, maintenance and childcare. Later contribution by Bauer [4] included the entire home and some international comparisons of housing. The aim was to describe the general standards of a house in the years between the two wars. The scientific approach was well intended, and was a road to raise utility by increasing effectiveness in the kitchen operations. Unfortunately something was lost. The idiosyncratic, individual and sometimes traditional ways of cooking processes, storage and work due to private designs was left no place and had to be sacrificed for the effectiveness. Having found an effective solution, no additional designs could be allowed. But is this in accordance with what consumers want? Consumers often want change for the variation rather than seeking increased effectiveness.

Creating value

Consumers are creative, innovative and novelty seeking. Knowledge and problem solving skills affect novelty seeking behavior, lead to acquisition of additional information and finally new goods [13]. Hirschman’s framework is consistent with a view of active and value creating consumers. When people design, they are inspired by basic human needs to explore their environment or simply by curiosity, the need to strive for a higher standard of living or to show virtuosity in the performance [14]. In addition, they seek pleasure from the company of other people. This has led to the concept of “dialogue kitchen” where guests are cordially invited to participate in the preparation of the meals. The pleasures of the mind are in the anticipation and doing.

It is suggested that consumers adopt meanings from advertising, and the fashion system [19]. They materialize as the meanings into choices of consumers’ goods appropriate for various ritual occasions as gift giving, possession, grooming and divestment, and meaning creation [18]. Similarly, cultural meaning systems are sources that people employ as “a toolkit” to create meaning, and clearly, the home must be one sphere for this [30]. Here, cultural meaning is expressed in objects and artifacts, as well as spatial designs and ornament, which are organized in patterns that are meaningful for the inhabitants [17].
The notion of “Poetics of Space” by Bachelard explains that the “daydreaming” of one’s childhood experiences are vital to understanding how we later in life may seek the protected and solitary space that reflects a childhood feeling of safety [2]. The term “story” feels to offer a more modern version of Bachelard’s concept, as the concern here is how the plot is experienced in the first person, more than how it is told in the third person [5, 19].

Commodities, which are anonymous objects, are at a low value level. Such objects may have both exchange and usage value. The value increases as these objects attain practical usage and meaning. The traces of usage for example patina, is an imprint of history of an object resulting in increased rather than degraded value, because the object becomes a vehicle of increased meaning [22]. Whether wear and tear is patina or a simple degrading of value depends on several factors: for example on the quality of the object, its story and identity, and personal relation. Plastic, as we know it today, is not often associated with patina, but wood and leader are prime examples. A cheap mass-produced plastic chair may become valuable if there is a very strong personal experience related to it [20]. A chair designed by The Eames’s or Mies Van der Rohe will become valuable as it ages and all the traces of use are seen as patina, which increases the value. Even higher values are realized when objects set the stage for important experiences, whether physical or relating to the mind [29].

High level value consists of vital experiences, which give meaning and identity to people. Co-creators experience a sense of timelessness and joy when realizing “optimal experiences” [7]. The acquisition of objects itself is not sufficient to enter a “flow state”. There must be a challenging activity, like the kind people may experience when engaged in work or leisure activities. Such a situation requires a balance between challenges and skills as well as absence of external disturbances. This is the ultimate well-being and high value. Professional designers deliver the building blocks and affordances [10] and may guide the “co-creators” to ultimately create their own value [22].

**Constant process of co-creation**

**People use their inclination** to change their environment in order to make it more exciting, appealing, cozy, or whatever atmosphere they might want to make [8]. The end is eventually to create value, whether the value is permanent or temporary. The home is graded according to people’s experienced level of intimacy, which guests also perceive immediately. In addition to this, there is a dynamic dimension. Other issues like spatial closures through walls, fixations, enclosures, and ornaments follow [27]. Designing consumers therefore strive to explore the opportunities in their homes and employ them to reach higher standards. In order for this to happen, there must be a conceptual underpinning experienced as the dimensions of the home. The construction of a home is a lifetime project and involves the whole family in different lifecycle phases.

The degrees of freedom are limited when people move into their homes, since economic considerations and standards of production usually leave little freedom for the individual inhabitant. When people move into new houses, decoration, painting and redesign are likely to occur. Any improvement created will uncover other shortcomings and leave scope for future improvements. There will always be a detail that requires improvement and even if a home seems ideal, maintenance and the emergence of new options will appear.

**Implications for design practice**

**The first implication** is that consumers or co-creators’ creation of value must be a target for explorations. This is another step in the learning curve. Trying to understand what consumers do in situ is hardly new for marketing research, but the focus of studying autonomic action rather than reactions to marketing action is a different step. This is what ethnography is about and yet the focus is new. Consumers or co-creators may be characterized both as potential objects of marketing action and as subjects and agents acting on their own initiative [6]. To follow this means to accept co-creators are also creating value, at least in the sense of improving their hedonic well-being. The use of objects, artifacts, systems, services and experiences are integral in this process. While a sociological or traditional value based research approach assumes consumer behavior can be predicted according to variables suitable for market segmentation, the research reported here may seriously question market segmentation and the use of pre-set categories [23]. In the process of this research, tagging what seems important may be done as a part of other inductive explorations of behavior.

Companies may search for alternatives to segmentation [32]. Product platforms and modular designs are an opportunity already exploited by Dell Computers and the automotive industry. The next important step in this development may be to support consumers in their processes of deliberation and value creation. Complexity and information overload may make decisions increasingly difficult. Affordances may consist of product platforms, but in addition there should be an enabling mechanism. To choose between a very large numbers of options is difficult. Enabling design might support such choices by offering decision support. This is the function that has been attributed to branding, but there seems to be an unmet need for better decision support systems for consumers. Companies that support consumers in making their own decisions could have an advantage. Such support would consist of cognitive tools, which show the results for the co-creator. Kitchen producers use this to show the building blocks for the consumer to design their own kitchen.

**Acknowledgements**

The author is grateful for the detailed comments on multiple drafts made by Kjell Grønhaug and Judy Zaichkowsky. George Fisk’s comments are gratefully acknowledged.
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“Top performers are attentive to clarify the expectations of the clients and to collect information about strategic issues, as well as to develop more collaborative relationships with their counterparts who seem to be involved, both actively and passively, in all the stages of the process.”

Best practices in business-design collaborations
A study of Italian design consultancies

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Introduction

In the last two decades increasing attention has been devoted to companies who have built or reinforced their competitive positions through design [5,7,9,10]. Companies like Philips, whose design push has boosted sales of its consumer products to about twice the industry average [3], and Apple, whose hip-looking products not only have started setting the standards for product design, but has also enhanced market share and profits [8], are just the tip of the iceberg. A growing number of companies in industries as diverse as clothing, transportation, food and beverages, furnishings, consumer electronics, and so forth, are realizing the importance of design as a powerful competitive weapon.

Past research has traced the link between the integration of design into a company’s processes and strategies and a company’s performance [10,4,6]. While there seems to be robust evidence that “using design” is good for business, however, less is known about how the contribution of design consultancies can be effectively harnessed along corporate activities. While a few practitioner-oriented works use single-case studies or anecdotal evidence to offer advice about how to successfully manage design-business collaborations [1,2,10], no systematic research has been carried out on this topic.

In this paper, we report from a survey-based study of 104 Italian design consultancies. The study was aimed at increasing our understanding of the issues usually faced by design consultancies before and in the course of their projects, how they usually handle them, and the conditions that, in their view, facilitate the success of the collaborations. In doing so, we tried to uncover possible differences in attitudes and behaviors among consultancies that could be broadly described as “high-performing” and the rest of the population.

The study

Managerial research on design collaborations has traditionally adopted the perspective of the clients – i.e. manufacturing business firms – using data collected from managers to investigate how externally-sourced design was integrated with a firm’s activities. In order to better understand the conditions of success and failure in collaborations between firms and design consultancies, our study investigated the much less explored perspective of design consultancies.

Our research relied on a survey design consultancies located in Italy and offering industrial design services. Our sample was selected among the official members of ADI, the Italian association of industrial designers. We visited the website of the about 1,000 members of this association and we classified them in terms of activities, size and clients. We excluded all members who either were not a design consultancy (manufacturers, cultural institutions, etc.) or did not offer product design services (architects, graphic designers, etc.). Our search produced 209 names. While most industrial designers in Italy are members of ADI, some of the best known are not. In order to improve the coverage of our sample, we also scanned the list of recent winners of the “Compasso d’Oro” award – the most prestigious industrial design award in Italy. This search produced 16 additional names, for a total of 225 design consultancies.

Coherently with guidelines for survey-based research, the preparation of the questionnaire followed a preliminary qualitative phase, aimed at ensuring full coverage of the phenomenon and at refining formulation of the questions. In this phase, we interviewed ten designers belonging to five different consultancies (Studio Giovannoni, Deepdesign Studio, Castiglioni Morelli Design Studio, Design Group Italia, and Continuum), which were selected in order to maximize heterogeneity along key features such as size, age, reputation, scope, and philosophy. Preliminary interviews were devoted to identify critical features characterizing the relationships between firms and design consultancies. Combining results from these interviews with a review of past studies, we prepared a questionnaire aimed at investigating common practices and relational issues, as well as conditions of success and failure. Our first draft went through a few rounds of further refinement, based on the feedback received by other academic members expert in design management issues, and by managers and design professionals other than those interviewed.

The final version of the questionnaire was structured around different sections, aimed at investigating the following issues: a) how the success of a project should be evaluated, b) what conditions facilitate successful collaboration, c) what type of information is collected in the early phase of a project, d) how the briefing stage is usually handled, e) how the interaction usually develops along the process, f) a self-categorization and evaluation along different dimensions of performance.

Potential respondents were initially contacted by phone. After having established the contact and secured the willingness of the consultancy to consider our survey (almost all did), we sent them the questionnaire by e-mail. If needed, potential respondents were contacted again after two weeks and again after a month from initial contact. After two rounds of recall, we had received 104 filled questionnaires, with a response rate of 46.2%. As each respondent was asked to describe conditions of failure for two or more types of clients, for the corresponding section we could gather 252 valid data points.

On average, the consultancies in our sample were relatively young. About 40% were founded in the 2000’s, 25% were founded in the late nineties and 22% in the eighties. In term of size, the turnover of 65.85% of them was lower than 250,000 €. Only 16% fell within the following range (from 250,000 to 500,000 €), the higher ranges reporting even smaller percentages. By the same token, the percentage of studios employing less than 5 people was far greater than the one reflecting the distribution of the population reducing the risk of geographically related biases of our sample.

Overall, then, our sample was mainly composed of medium and small design studios: most of them were recently founded, emerging consultancies, or small established studios. Other categories included consultancies led by individual, renowned designers, specialized consultancies, primarily engineering-oriented, and medium- and large-size studios without a leading distinguished designer. A residual category “others” included mostly free-lance designers who tend to work with other design consultancies, and occasionally work on their own projects.
Finally, the collection of information about the performance of each consultancy helped us circumscribe a narrower set of consultancies which could be considered as “top-performers”. We classified as top performers those consultancies that reported “above average” or “well above average” financial performance, commercial reputation, and community reputation (as manifested in media coverage, awards, etc.). Based on this selection criterion, we identified 10 top performers (7 renowned designers, 2 large studios, 1 small established studio). For each of these companies, we gathered additional information in order to verify respondents’ assessment, at least as regarded the awards and the profile of the clients. Submission of this short-list to knowledgeable experts further reassured us about the face validity of the criterion.

In order to investigate whether different attitudes or behavior could explain performance differences across the sample, we searched for significant differences in responses between the restricted group of consultancies classified as “top performers” and the rest of the sample. Our survey investigated some aspect of a consultancy’s way of operating, which could possibly explain its relative success in collaborating with business firms, its conception of a successful project, its view on what facilitates collaboration, and its common practices along the process.

**Common practices of Italian design consultancies**

*On average our* respondents seemed to measure the success of a project mainly on three aspects. More than 85% of our respondents quite pragmatically agreed that the success of a project should be assessed mainly on the satisfaction of the client and on the commercial results of the product. About the same percentage, however, indicated the sheer introduction of substantial innovation as one of the measures of a successful project, and over 60% of our respondents pointed at significant modification in an existing product typology, in line with what seems to be the essential vocation of Italian product designers. Much lower scores where assigned to the recognition of the media, the design community, and the critics.

A second section of our questionnaire asked respondents to indicate the conditions that, in their view, usually lead to a successful project – where all the parties involved are satisfied of the outcome. According to our respondents, the attitude of the counterpart seems to be critical at this regard: indeed, more than 90% of our respondents self-confidently indicated “openness to designers’ proposal” as a fundamental condition, along with the capacity of the counterpart to understand and appreciate design (over 80%). Between 70% and 80% pointed at the possibility to gain a good understanding of the client’s technology, and to the involvement of and the possibility to interact with all the relevant functions. Stability in the relationship and support from the top ranked right below.

Next, we investigated common briefing practices. The design brief is a critical tool for conveying information about the expectations of the client, the goal of the project, the current constraint, etc. Proper briefing is usually considered crucial for the success of the collaboration. More than 40% of our respondents, however, observed how “often” or “very often” they receive no brief at all, and proceed without one, or prepare one internally based on preliminary discussions with the client. The joint development or the negotiation of a draft seems to be roughly as common. Much less common was the reception of a non-negotiable brief. The vast majority of our respondents (more than 70%) displayed a tendency to systematically challenge some of the expectations and assumptions included in the brief.

As regards the preliminary collection of information, the attention of most of our respondents seems to be generally focused on the goals of the project, while deadlines tend to be on the bottom of their priority. The technological background and vocation of our respondents surface in the extreme care they display on collecting information about their clients’ production technologies. Almost equally important were brand attributes. Ranking immediately lower were current products and their design attributes, while strategic issues and distribution channels seemed to be considered, on average, less relevant.

Finally, as far as the management of the relationship with the client was concerned, our respondents seemed to associate frequent face-to-face interaction with periodic formal reviews with the clients. Only around 30% of our respondents reported to systematically involve counterparts in working meetings and creative reviews, and even fewer constantly shared with clients written reports along the process.

Whether these results reflect widespread attitudes and the practices in the design profession or peculiar traits of the Italian community is something that future multi-country research may set out to investigate. The heterogeneity of our sample, however, made it possible to compare different types of studios and to surface their peculiarity.

**Renowned designers**

*Design studios* led by distinguished designers displayed attitudes and behaviour that partly reflected the relatively higher prestige of their senior designers and the type of relationship they established with their clients. More precisely, these designers assigned a significantly higher importance to winning awards and recognition in assessing the success of a project. These designers shared the same confident belief of the rest of the population that design literacy and openness to their proposals were key conditions of success. In addition, they assigned a relatively higher importance to the support of top managers and the possibility to directly interact with clients’ employees, while clarity and stability of goals seemed to be considered less problematic.

According to our respondents, projects are usually acquired based on previous work, by clients searching for the competence and the prestige of the senior designer. The briefing process seems to reflect the relative standing of these consultancies, as, more often than in the rest of population, briefs are received as negotiable drafts and frequently re-considered together with the client along the process. Also, their clients tend to unilaterally change the brief less often than in other cases. Particularly interesting in this respect, is the fact that about 47% of the respondents in this category claimed that they do not usually receive an initial brief by their clients – a fact that could possibly be explained in the light of the high reputation of and trust in the design studio by clients.
The initial alignment typically focuses on the clients’ goals and expectations, deadlines being considered secondary. As far as the information usually gathered in this phase is concerned, we did not observe any peculiarity, with the partial exception of a slightly higher importance assigned to the clients’ current products and distribution services. Later, during the project they tend to keep their counterparts engaged in the process by frequently organizing meetings and project reviews. They are significantly more likely than others to arrange a final plenary presentation, where they are often supported by their contact-person.

**Large Studios**

Large studios represent the smallest group in our sample, mainly because of the traditions of the Italian design community, characterized by the prevalence of individual designers or small studios. Compared to the rest of the population, these designers assigned more importance to the emphasis given by media to the project and the introduction of a considerable modification in a product category. Also, they ascribed more importance to clarity and stability of goals and instruction, and the comprehensiveness of information in affecting the success of a project.

Potential clients turn to these consultancies because of their competence and prestige; unlike renowned designers, however, large studios display a stronger tendency to actively search for clients by submitting books illustrating their work and skills. Even for this category, however, the prevailing way of contact is represented by pre-existing long-term relationships, followed by the success of previous projects realized with the same client of with others.

With respect to the briefing process, these consultancies seemed to face different conditions than the well-known designers – possibly because of the different type of clients they tend to work with, or the different expected outcome of the project. In fact, these studios were significantly less likely to receive no brief at all, and more likely to receive non negotiable briefs; in addition, their clients seemed to be significantly more willing to unilaterally change the brief and less likely to reconsider it together.

In the preliminary phase, these studios seem to place a higher emphasis than the rest of the population on developing a broad understanding of their clients’ contextual features – technology and brand first, but also, and no less important, the competitive environment and the corporate strategy – possibly in order to ensure a good fit between their proposal and the clients’ goals, needs and constraints. Compared to the rest of the population, a higher degree of formality seems to characterize the management of the relationship, based on frequent conference calls, official intermediate and final meetings, as well as the frequent sharing of reports.

**Emerging Studios**

In emerging studios the typical traits of Italian consultancies – emphasis on clients’ literacy and openness as a key condition of success – were dominant. Clarity of goals, comprehension of technology, and understanding of positioning were in turn considered relatively less important, as if the success of the project was tied mostly to the intuition of the designer and the intrinsic soundness of the concept.

Compared to the previous types of consultancies, which can count on an established name and reputation, emerging studios tend to rely more on an active search for jobs, by submitting books, specific proposals (significantly more than the rest of the sample) and participating to tenders.

In the briefing phase, these consultancies seemed to play a significantly more active role – perhaps because of the relative lack of experience of their average clients. Working without a brief, or preparing a brief themselves after a preliminary discussion with the client seemed to be the most common situations; also, these consultancies were significantly more likely than others to prepare the brief together with their clients. Also, they were more likely to challenge the brief or – more rarely – to ignore it altogether.

A low level of formality characterizes the management of the relationships with clients, usually based on frequent informal interactions between designers and the key contacts inside the firm. Possibly in order to make up for the lack of a formal brief, these studios seem to invest much effort in aligning the objectives and the expected intermediate and final results with their clients.

**Small studios**

Small established studios, combining small size with more stable long term relationships with clients, seemed to display a more pragmatic view, emphasizing commercial results and clients’ satisfaction as fundamental measures of success, and rating clear objectives, a comprehension of technology and the possibility to directly access clients’ employees as key conditions of success (beside the usual reference to clients’ literacy and openness).

More than any other type of consultancy, small studios rely on previous clients to acquire new jobs. The briefing process largely sees the active participation of their clients in the joint preparation or the negotiation of a draft provided by the client. Provided the high level of interaction during the negotiation of the brief, a deep and thorough understanding of company’s profile by designers as well as a careful alignment with respect to goals and expectations are considered important factors of success. Therefore, great attention is devoted to the arrangement of frequent mid-phase and final formal meetings.

**Specialized Studios**

Finally, specialized studios, characterized by a high level of specialization towards engineering-oriented services, seemed to measure success mainly in technological aspects of projects, such as the introduction of a substantial modification of a product category, and the innovation content of new products. Deep understanding to the clients’ production technologies was also considered paramount in affecting the success of the project, along with clarity of instructions, stability of the counterpart and support of top managers.

More than others, these consultancies are contacted for their competence and by previous clients. Perhaps because of the technical nature of their projects – which makes it easier to specify the goals and the boundaries – they often proceed without a brief and when they receive one, they are significantly less likely to challenge it. The careful search of information regarding
clients’ technologies, products and services, and design attributes usually takes place during preliminary formal meetings, informal interactions, and conference calls, which represent the privileged way of interaction for this type of studios.

Best practices of design consultancies

In our survey, we asked design consultancies to self-assess their performance according to different criteria: financial (profitability), commercial (reputation among clients), and image-related (reputation in the community and on the specialized media). Based on these data, we selected a sub-sample of companies that scored highly on all these three dimensions (4 or 5 on a 1 to 5 scale – e.g. “above average” or “highly above average”). For these companies, self-assessments were double-checked with available archival data (awards, references, size, etc.); adopting a conservative stance, whenever in doubt we decided to decrease the score of the respondent. At this stage, a couple of studios that seemed to have been over generous in their self-assessments were dropped out.

Our selection eventually resulted in the identification of 10 companies: 7 renowned designers, 2 large studios, and 1 small established studio. We considered these companies as “top performers” and we compared their responses with the rest of the sample, checking for significant differences (The level of significance of the observed differences was affected by the small size of the sub-sample. We considered as relevant differences that were significant for p < 0.15).

To conclude the paper, we present a summary of the main differences we observed between the top performers and other design consultancies. These “best practices” comprise four primary categories.

Focus on innovation and commerce, and high emphasis on awards. Top performers significantly rate both innovation and commercial results higher than the rest of the sample, in assessing the success of a project; they also place a significantly higher emphasis on awards. Curiously, they rate the respect of the brief and the satisfaction of the client slightly lower than the rest of the sample, as if pleasing the client was relatively less important than the designers’ intuition about the intrinsic potential of the concepts and ideas they develop.

Higher attention to strategic issues. In a preliminary phase, top performers are on average more attentive to clarify the expectations of the clients, and to collect information about strategic issues (competitive environment, corporate strategy, distribution channels), which are usually assigned a lower priority by the rest of our sample. This attitude seems to be coherent with the significantly higher emphasis they place on the importance of understanding the positioning of the counterpart for the success of the project. Conversely, they seem to be slightly less “obsessed” with gathering information about the client’s production processes and technologies than the rest of the sample. Not that these aspects don’t matter to them, but the difference between the importance assigned to the various facets of a company’s structure is relatively narrower.

More intense and formal relationships. While there does not seem to be any significant relationship in the way briefs are prepared and, possibly, modified by the parts, top performers tend to be more formal in the way they interact with their clients along the project. They tend to make more ample use of conference calls (possibly because of the higher number of international clients) and of formal meetings during the course of the project. In addition, they consider more important than the rest of the sample to have a chance to directly access, right from the beginning, all the relevant functions.

More active collaboration with their counterparts. Finally, top performers seem to develop more collaborative relationships with their counterparts, who seem to be relatively more involved, both actively and passively, in all the stages of the process. Top performers, for instance, tend to prepare and share written reports on the advancement of the project more frequently than the rest of the sample. At the end of the project, they are also more likely to arrange a final plenary meeting, where they often benefit from the support of their counterpart.

It should be noted, that given the cross sectional nature of our study, it is hard to ascertain whether these attitudes and behaviour are a cause or a consequence of the above-average performance of some companies. All we can say is that we observed certain attitudes and behaviour that significantly and substantially (differences ranged from 0.5 to 1 point on a 1 to 5 scale) differentiated top performers from the rest of the sample. Future longitudinal study may try to investigate the issue in more depth, and trace clearer connections between certain attitudes and practices and the consolidation of the success of a studio.

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THE WORLD DOES NOT SUFFER FROM THE LACK OF MATERIAL BUT THE LACK OF MIND. BEING INNOVATIVE AND FULL OF FRESH THINKING GLOBE HOPE CAME UP WITH THE IDEA OF FABRIC REDEFINED.