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Conceptual Thinking: How To Quantify Meaning in Projects and Processes Through Structured Non-Linear Thinking.

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CONCEPTUAL THINKING: HOW TO QUANTIFY MEANING IN PROJECTS AND PROCESSES THROUGH STRUCTURED NON-LINEAR THINKING

by

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CONCEPTUAL THINKING: HOW TO QUANTIFY MEANING
IN PROJECTS AND PROCESSES
THROUGH STRUCTURED NON-LINEAR THINKING

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University of Nebraska, 2015

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Things have meaning. Your job, your smartphone, even your insurance has another layer of meaning than its intended reason for existence. Products have become complex combinations of applications and features so small, that their shape no longer characterizes them. As people we have evolved into empowered consumers looking for purpose in our lives and in the things we buy. Advertising discovered the power of meaning more than a century ago. Since then, what has proven difficult is to quantify meaning. The skills we are taught in our educational system and the processes we apply in business fall short of identifying the bigger picture – the patterns that point to what something means. Conceptual Thinking uses a step-by-step process to uncover meaning and create Concepts that can in turn be developed into meaning-based solutions. Conceptual Thinking is not a model, but an individual skill that is trained through exercises and theory; over time it becomes an intuitive skill. This study describes the development of the process by the author as well as three case studies pointing to the potential to be mined from an evolving, structured, non-linear form of creative thinking.
DEDICATION

To my parents, Rein and Sigrid, for making this all possible.

To Anouk, the love of my life.
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INTRODUCTION

A differentiating element in today’s society is the ability to think in concepts. That is, we are able to develop ideas that take into account the bigger picture, and show our understanding of the significance of things: we see patterns. Jerry Seinfeld was once told that this way of thinking was his ultimate superpower:

If I were a superhero, I would be Analogy Lad. If you had a problem, Analogy Lad would break through the wall and say, you know what this is like? (Armisen et al.)

Businesses have risen to great heights because they recognized not just what a product does, but what it means to people. Others have disappeared because they failed to recognize a shift in meaning. We basically still think and work based on models dating back more than a century. Our educational model and our company organizational models now need to adapt to the new paradigm.

The latest stage of economic evolution we are currently in is commonly referred to as the Experience Economy. While often confused by economists with the Service Economy, it is a distinct form (Pine 97). Services, like goods, are becoming commodities. Experienced has surfaced as the new economic value.

Our classic business models are cascading models that close stages before progressing to the next, using ideation as a first and isolated step. Standard educational models test knowledge, but not necessarily with a view to equipping students with the
skills to analyze the more complex and abstract significance or meaning of things.

What is missing is basic, elementary training in how to uncover meaning. It is not found in our educational system, nor is it an individual skill trained in companies.

Making meaning an integral part in developing products and services allows businesses to make better products that are compatible with the expectations of the informed, empowered and connected consumers of today. This paper describes the origin of the process of Conceptual Thinking and the need for a structured form of creative analysis. It documents the potential of Conceptual Thinking in three ways: firstly, as the central theme in product design; secondly, in revealing product meaning by training a small group of participants in a project-based setting; and finally, through an online teaching model – teaching it as an individual skill to a group of “untrained” professionals in a five-week masterclass. Conceptual Thinking is a recently formatted model that has developed organically over the past decade. This study is not aimed at measuring its effectiveness, but rather to illustrate it, through several cases. The demonstration of Conceptual Thinking’s effectiveness combined with the study of the background of “meaning” in economy and society will serve as the basis for further research.

In this paper three terms will be used frequently: meaning, concept and creativity. “Meaning” refers to the emotional, socio-cultural significance and purpose of something as well as its utilitarian intention (“Design-Driven Innovation”). The term “concept” is the developed idea in words, which is the result of thorough analysis and the strategic blueprint for the development of the final solution. It can be likened to the mission statement of a project. Finally, there is creativity and creative analysis. “Creativity”
commonly reflects artistic ability, but it is also accepted as a form of thinking. In the context of this paper it refers to non-linear thinking (“Creativity | Definition of Creativity by Merriam-Webster”).

The origin of the process is rooted in disciplines such as conceptual 3D design. However, Conceptual Thinking can equally be applied to services. One of the participants of the masterclass was a communication specialist. After having taken the course she stated that the process had better equipped her to analyze a complex decision process for one of her clients quite early on, through identifying meaning. Conceptual Thinking is a form of creative analysis that identifies what things mean by transforming information into insights, and, following validation of those insights, it enables the user to make a strategically worded blueprint in the form of a concept, on which the final solution can be based.

Figure 0.1 Three phases of Conceptual Thinking
CHAPTER 1: LITERATURE REVIEW

IMPORTANCE AND RELEVANCE OF MEANING

The common assumption, states Verganti, is that meaning cannot be changed: it is a given (Verganti 4). Meaning is not a focus in a company’s R&D, even though it is documented in marketing literature. This traditional approach, or technology push, is risky, as the past has shown: today’s winners can become tomorrow’s losers (Volker).

‘Form follows function’ or, form ever follows function, as it was originally coined by Architect Louis Sullivan, is losing ground as well (qtd in Rawsthorn).

Thanks to digital technology, designers can squeeze so many functions into such tiny containers that there is more computing power in a basic cellphone (not a fancy model, like a BlackBerry or iPhone, just a cheap one) than at NASA’s headquarters when it began in 1958. That is why the appearance of most digital products bears no relation to what they do (Rawsthorn).

Before exploring the workings of industry in the next chapter, it makes sense to start at the source: how to define meaning? Technology and functionality are by themselves not the only factors in product perception. Klaus Krippendorf of the University of Pennsylvania refers to this as the Semantic Turn. This fundamental paradigm shift lies in the design of objects – be they industrial, graphic, informational, architectural or social. The Semantic Turn makes a distinction between the technical
workings of objects and how humans interact with those objects – individually, socially
and culturally. The goals and viewpoints of scientists or mechanical engineers, for
example, are intrinsically different from the need of the consumer situated at the opposite
end of the spectrum. Users do not need to fully understand the technical workings to be
able to use them in a meaningful way. A good example of this distinction is the design of
a personal computer. As a user you do not need to understand the circuit-board, nor the
coding of the software, to make it do what you want it to do. In fact one could argue that
the better computers are the ones easiest to operate, as opposed to the ones that require
coded input by the average consumer. Take the computer mouse: in itself it is an object
you are barely aware of while working on a computer. It does not demand visual attention
as you are focusing on the screen in front of you. What matters is not its form nor
identity, but its purpose; its meaning.

To understand products and product meaning you also have to understand people.
There have been four important economic transitions coinciding with four social
evolutions the past 70 years, which have shaped the outlook of society today. It starts
with the build-up of countries after World War II, and continues with the breaking free of
moral conventions by the Baby Boomers of the 60s, followed by an increased sense of
individualism in the 80s. The next major shift was the emergence of the Internet. This
 technological innovation fundamentally changed the way people related to each other and
the world as a whole. The economic model shifted from a production-based model, to a
consumption-based one. Then, it became a service-based economy, which transformed
into an experience-based economy. Generations evolved; from the Silent generation of
the 30s, 40s and 50s; the Baby Boomers; Generation X; and the Millennials.
Today a new system is arising stemming from the economic crisis in the early 21st-century, which marks the end of the existing economic model of cyclic movement.

Let us go back to the beginning to trace our way to the present day. The Traditionalists, also called the Silent Generation, were described in a national poll as the generation having had the most “positive impact” on the American economy for their role in fueling the postwar boom (Hewlett).

Their efforts coincided with a new consumer society that saw a radical shift in the use of consumer goods. Products became expendable and were now for the first time regularly replaced before the end of their life cycle. Choice increased, pushing individual manufacturers to try to stand out. The six-day work week went down to five, and for the first time people were able to enjoy and make use of free time (Sopher). “The weekend”, was introduced in Germany in 1889. Life expectancy increased to such a level that for the first time in history, regular people were able to enjoy their retirement.

In Western Europe, the welfare state facilitated social arrangements such as health insurance and paid people when they were unemployed. This marks a radical shift from working to sustain oneself and one's family on a basic level, to being able to engage in other interests and activities. The Traditionalists generation is currently over 70 years of age, and in the west is mostly affluent, with a pension they built up for themselves.

The Baby Boomers were born after the Second World War, and, having been raised in comfort they were the first to start questioning moral values: who were they? What values did they cherish? They represent the largest age-related category in the United States and are now in the final years of their careers. Baby Boomers put a person
on the moon, yet they have also acquired the moniker of greedy, spoiled, divorced, “ultimate” consumer.

This set the stage for Generation X; often growing up in families that were splitting up and “turning on society”, in a manner of speaking. They were born between 1965 and 1979. Now adults, they have been described as independent-minded and somewhat cynical.

Generation Y, and finally the Millennials, have been raised in the Digital Age. The freeing up of information and instant communication have fundamentally changed the way they live. The latter generation in particular is also described as the Net Generation because they grew up with computers and are seen as more technologically savvy than their parents. Millennials encompass 80 million children born from the late 1990s into the beginning decade of the new century. Also called the iGeneration, they spend time texting and using social media more than the preceding generation. Stein describes the Millennials as a generation raised in the mass communication society (Stein 31). As a result they live in an era of the so-called “quantified”; self-recording their every move and sharing it 24/7 with the entire world. The consequence is a lowered sense of political engagement. What characterizes Millennials is their sense of entitlement, further fed by their devices, which keep them constantly in touch with, and affirmed by others.

HOW CORPORATIONS VALUE MEANING

Products and services made by companies most often occur in a series or in a succession of stages, so that each stage derives from or acts upon the product of the preceding stage. Companies are traditionally structured top-down, where decisions are made at the top, moving down the chain of command. This organizational structure helps
assert control. Products and services are mainly developed using this linear stage-gate model (Cooper).

Again this helps to manage and oversee a project’s progress. Both break down large general aspects of the problem into smaller more detailed parts, working from the general to the specific. The bigger picture is split up into even smaller, more manageable bits, and put into the hands of more people all responsible for his or her smaller part of the bigger whole. In the development process it is split into departments where each department with a certain specialty deals with a certain part of the process, after which it hands it over to the next department. Once again, we see the breaking up of the bigger picture. This works fine in a low diversity economy using a linear production model. Specifically, a product is thought up in a meeting room, engineered, designed and produced in a factory; it is then put on a truck and lands on a shelf where it is left to fend for itself with the help of some marketing. It makes sense to hold onto this existing model as it has brought us to where we are today. Decisions in organizations are made, based on past successes. However, research shows that we tend to over-reward successes and condemn failures. This is based on an intrinsic desire to succeed; however, the analysis of successful businesses puts its focus on the outcome instead of the process. As Denrell claims in a recent article in Organizational Science:

Approach with caution any list that purports to reveal, for instance, ‘10 common traits of successful companies’ – whether it is punctuated with an exclamation point or comes with the seriousness of a legitimate study (Denrell 74).
The previous section has outlined that people have involved into beings who have taken charge of their lives and are looking for fulfillment outside of consumption. Consumers have transformed. They have become empowered and connected, and have reversed this linear production model. It is conceivable to order straight from the factory, or to go to the store with a specific question instead of asking for advice. The characteristics of the products themselves have changed, for advances in technology constantly shift meaning. Here follow a couple of examples.

Kodak was the first company to start working on the idea of a digital camera in the late 70s. They continued to do so for decades but never fully developed it for fear it might hurt their traditional film business (Finkelstein). In the in the end they disappeared.

When it was first introduced, Nokia felt the Apple iPhone would only have a marginal impact on their core business of making standard mobile phones. What they did not predict was a fundamental shift in the application or use of the product. The significance, or meaning, of a mobile phone integrated with web-based applications and a camera had taken communication to another level completely. This led to the ultimate demise of the firm (Depillis).

There are many more examples where companies failed to act on shifts in meaning, both while the changes were unfolding or even when considered in hindsight. Though it is difficult to root out mistakes like these in time, altogether integrating meaning into the development process is far from a quick exercise; it is a fundamental part of R&D. Integrating meaning should improve the chances of success – if only by acknowledging its importance.
MEANING IN BRANDING

A basic principle of branding is that a brand takes on meaning when it makes a product distinctive within its product category. Advertising and branding have been working to charge products with meaning for more than a century. The first known example of branding can be traced back to 1882 and the product, which exists to this day, is called Ivory Soap by Proctor & Gamble (Moriarty et al. 147).

At the time, soap was a product made at home using a recipe that resulted in a murky substance, which quickly dissolved in water. Through a recipe developed during the US Civil War, a bar of soap was produced that was bright white and had been analyzed, and found to be 99% pure. The first goal was to get people aware of this new product. The second was to show how it would make a difference in their lives. The name Ivory Soap was chosen to reflect this white color and it was given a name to distinguish it from the soap made by people in their homes. It was also given the catchphrase “99 and 44/100 percent pure.”

Branding changed over the years as society changed from focusing on consumption to experience and meaning. Corporations that had historically manufactured their goods and brought them to market now outsourced production in many cases, and were focusing on developing and marketing their brand first and foremost.

They changed their advertising efforts and no longer used just billboards and print ads to sell the advantages of their products (the way Proctor & Gamble had done initially); they became a lifestyle brand. They were no longer primarily focused on production with marketing as an add-on, but started to see their products’ essential value: meaning. In a market in which goods could be produced by nameless brands for much
less and at increasingly high standards it freed large corporations from having to think
only about the product they were producing as a way to sustain themselves. Kraft was
bought in the late eighties by Phillip Morris for $12.6 billion: six times its worth on paper
(Klein). This is a monetary value put on companies based on what they stand for. And
with it came a change in mentality; the brand experience could be used for growth
beyond production. A brand could grow through meaning. IBM wasn’t selling
computers; it was selling business solutions.

MARKETING IS DEAD

Several studies show that traditional marketing is no longer relevant to the
“buyer’s decision journey.” (Lee). This fashionable comment seems to be equally
confirmed as it is rebutted. The fact is that the Digital Age has empowered consumers to
change communications from a one-way model (where the company created a strategy
and executed it using different channels from print to television commercials) into an
ongoing two-way conversation – where at times the consumer is taking lead.
Furthermore, an individual can have a grave impact on a brand’s perception today. The
new reality asks for a new approach.

Famous is the Twitter storm caused by O2 during the 2012 network failure in the
UK (Lyon). The telecom provider’s network problem was affecting hundreds of
thousands of its customers. Many suffered a complete loss of 2G and 3G network
services, and crashing mobile, landline and broadband connectivity. Customers were
outraged on social media platforms, namely Twitter. They were using foul language and
attacking the company verbally, threatening to take their business elsewhere. Instead of
using media-groomed wording and standard messaging to convey their apologies and
urging customers to be patient, O2 used the same type of language as their customers, substituting humor for profanity.

"Customer (@24vend_Ltd): '@O2 had to travel to Italy to get signal -- desperate times!!!"

O2 response: ‘You can come back now. We're back in business :)’" (qtd. in Lyon).

The approach was highly successful in reaching customers directly and personally, and diffusing the situation. Strategy is no longer an effort with a long-term view that offers safety in controlling information and having a plan; today it is a dance in which the company and the customer take turns leading.

MEANING IN EDUCATION

Our educational model, according to Ken Robinson, is built like a factory. It is structured in classes per year of “production” where students progress from one to the next level in groups of the same age. Standardized testing is used to test knowledge. Our educational model, he states, was conceived in the intellectual context of the Enlightenment and the economic circumstance of the Industrial Revolution focusing on the rational (Robinson). And there’s no denying that pillars such as sciences, languages and math are the cornerstones of being able to function in our society. What it marginalizes, however, is creativity and intuition.
Creative qualities are often described by parents and educators alike as mystical, elusive talents and certainly not something you want to make a career out of. Despite this, an appreciation of the value of creativity certainly exists. An academic study concluded the following:

Highly creative individuals display exploratory behavior when encountering novelty, are optimistic, tolerant of uncertainty, pursue their goals with intensity; display responsibility, are directed to their goals, are able to utilize resources, are self accepting and congruent, and they display empathy, tolerance, and integrated consciousness (Chávez-Eakle).

The same study concludes by stating the importance of taking into account creativity in the development of educational programs. Creativity as a process is seen in clichés; that is, the visual arts and music. It should, however, be recognized for what it is: a highly successful ingredient of many of the technological and scientific breakthroughs and a quality worth cultivating in education.

CREATIVITY CAN BE TAUGHT

There are traces of social and cultural components in some design methods as well as project management tools. What is lacking is a clear process of how to find this valuable information. In order to master the skill of non-linear, structured thinking one requires training. Genetic studies suggest genes may account for as little as 10% of a person’s creative potential and that inspiration is also a motivational state (Chamorro-Premuzic). As such, inspiration is influenced by external and contextual variables. The
reason that this research is rarely discussed is that the term “creativity” is not the right academic label for this evidence. Another question arises of whether “creativity” should be the primary goal. Conceptual Thinking is not a tool that teaches people to become artists or designers; that is, the common definition of a person possessing creative skills. Conceptual thinking is a process of creative analysis, and more specifically of structured non-linear thinking. The result of this process is not a “design” as such, but a strong word concept. To create the concept, a person uses a combination of their learnt skills as well as life experience, intuition and sensory qualities, like empathy. Within the framework of this study, the two terms (creativity and Conceptual Thinking) are used interchangeably to be able to use and explain sources and make connections in literature.

Another common assumption is that creativity and structure are opposing forces: creativity flourishes outside the constraints of the rules and works best this way. Nothing could be further from the truth, when it comes to the ideation phase.

Caneel Joyce wrote her dissertation at UC Berkeley about what she calls “the blank page effect”. Too much freedom in creative processes, she discovered, can be paralyzing. Her findings suggest that whilst some amount of choice can encourage creativity, too much can be counter-productive (Joyce). This counters many popular theories and is one of the basic assumptions of Conceptual Thinking. The process of non-linear thinking benefits from a form of structure.

WHAT’S MISSING IN THIS PICTURE

Our main measurement of a person’s abilities – his or her IQ – reflects linguistic and logical/mathematical skills, though leading researchers such as Howard Gardner have
been advocating broadening this definition since the early 80s (qtd. in Snopek). In Maslow’s hierarchy of needs, the uppermost sections are the search for meaning and beauty – self-actualization. McLeod phrases this as meaning having a history; it isn’t a passing trend but an intrinsic value that we seek (McLeod). Successful products such as the Wii were developed using the disruptive power of meaning – it changed the leading belief that gaming was about kids sitting alone behind a computer immersed in even more realistic first-person shooting games, and created a family game based on body movement. Meaning is the invisible force that powers brand equity. It has become an essential value of our connected society. It drives our individual search for purpose in life. Its value is not disputed, we just don’t generally know how to incorporate it in advance (it is easily applied retrospectively by smug commentators). In actual fact, it can be learnt as a skill, and how to apply it, at the right stage of product/service development. Why, then, is this element of meaning still missing in both business R&D departments and education curricula? The answers lies in tying together elements from all of the disciplines – arts, design, business, socio-cultural aspects – to create the tools for identifying meaning in products and processes.

ORIGINS OF CONCEPTUAL THINKING

DUTCH DESIGN 1990 – TODAY

In 1993, Droog Design – later called Droog – was founded by Renny Ramakers. The Dutch word for “dry”, Droog became the platform that launched designers onto the international stage at fairs such as the Salone del Mobile.
It was in the early years of the 90s that I first observed what had until then been an uncustomary design mentality in the work of a great many young Dutch product designers. The products were exciting, not just as objects, but because they said something about the context in which they came into being. A sparing use of resources, the frequent recycling of materials, products and typologies, a deliberate lack of style and a makeshift nature of some designs – old registered as a critique of the prevailing overconsumption and the equating of design with style and technical perfection. These designers evidently had an aversion to design with a D, that is, to products that presented themselves emphatically as ‘design’.

(Ramakers 6)

There is a significant connection between Conceptual Thinking and the Dutch Design movement. The work of designers in this context is often referred to as Conceptual Design. The Dutch design movement started in the early 1990s, even though, back in 1918 de Stijl group had already put the Netherlands on the design map owing to their analytical and rational principles. The Dutch design movement originating in the late 20th century is different, for it re-examined everyday objects. Other characteristics of the movement are pragmatism, single-mindedness and designs that lack pretension, and are even humorous. It came to be because of a number of coinciding events. Firstly, Dutch Design featured the (Droog) platform referred to above, that brought together the work of the emerging movement; and secondly, it existed in an educational environment
that had a great deal of intellectual freedom and loose formal teaching guidelines for lecturers, if any. Thirdly, it evolved in a society that reflected similar values.

DUTCH DESIGN DEFINED

Despite its name, Dutch Design and its way of working is by no means limited to the work of designers hailing from the Netherlands. The Dutch institutions and renowned firms such as Philips Design drew in (and continue to do draw in) lots of international students and professionals and their work was presented under this same general term.

It is conceivable that the traits of Dutch society prompted the emergence of the movement. Dutch politics are based on a multi-party system in which political parties continuously have to compromise – the Dutch call it the “polder model”, referring specifically to the concensus-based Dutch economic and social policy-making of the 1980s and 1990s. The polder model has become a general definition of the decision-by-committee culture in the Netherlands (Peet). Historically, the Netherlands had an outward focus through trade for centuries, and whatever religious values remain in current secular society have their roots in Calvinism. Calvinist teaching appealed not only to the lower classes but also to the intellectual and middle classes because of its glorification of work, its discipline and its organization into communities (Blockmans). It was and is a logical mentality for a tiny country surrounded by water and the need for people to work and think together to keep their patch of land dry.

These factors combined create a feel in Dutch society of being “down to earth” and having a disdain for authority in any shape or form. Not because of a feeling of fierce individual independence, but rather an instinctive belief that everyone is equal and is not fundamentally better than anyone else. As result employees and students call the CEO or
a Professor by his or her first name, and will generally approach them directly with a question or comment. This set the stage in design institutions for the movement of Dutch Design to develop.

By 1990, the Design Academy Eindhoven (DAE) had been around for four decades and at the time was called the Academy for Industrial Design Eindhoven (AIVE). It was training industrial design professionals to work in industry. Industrial giant Philips had its headquarters and research facilities there, as well as the corporate design studio. With the emergence of the information age the DAE saw the shift that would occur in the field of design because of it. At the same time many full-time faculty were made redundant and replaced by active professionals working part-time – a structure that is still in place today. In this shifting of organizational and educational structures emerged the first works of what was to become Dutch Design. At the time the academy and its teachers strongly advocated the importance of ideas as the only sound basis for design, says designer Piet Hein Eek (qtd. in Schouwenberg and Staal 68). In 1998 Lidewij Edelkoort, internationally renowned trendwatcher, became the creative director of the Design Academy and further strengthened this philosophy. She acted almost as a curator, selecting promising works and using her industry and artistic connections to launch them on international podia.

STRENGTHS AND FLAWS

Conceptual Design as it refers to Dutch Design doesn’t have a clearly defined process. Though most practitioners and lecturers would come up with a similar general description, how to go about applying it differs from one person to the next. It is taught in this fashion to students: through trial and error. As a result it takes a 4-year bachelor, and
often more study, to acquire the skills. It can be argued that its strength lies in not tying it down into a finalized method to which students have to conform. However, students’ individual creative talent and distinctive qualities do not suffer when given tools to structure the initial creative analysis phase, before moving onto sketching in form. The author had a group of second-year students who had failed their second semester. He had them perform a series of 3 three-week strategic assignments aimed purely at creating concepts instead of final products or services. The idea behind it was that a typical ten to twelve-week semester-long assignment had only two to three weeks of creative analysis, after which the concept had to be finalized and the student had to move on to transforming the written concept into form. If the concept was not strong or the student not aware of its potential, then he or she had to keep working with it for another eight to ten weeks before being able to try developing this skill again with a new assignment. By doing 3 three-week, structured assignments without a resulting 2D or 3D design solution, it removed the element of form – a source of insecurity for an inexperienced, or low-confident student. It allowed them to train their creative analysis skills three times in a single semester. What it also did was lower the level of expectations by not requiring the perfect design at the end, but a powerful concept. In a way, it permitted students to fail. After the initial phase of creating a concept, the design students had to broaden their view again to search for the optimal, final design solution. The process had not limited their creativity. In fact it had helped them focus on it.
HISTORY-RELATED DISCIPLINES

As the name suggests, Conceptual Art is closely related to Conceptual Design and Conceptual Thinking. Marcel Duchamp’s *Fountain* could be a natural starting point in the search for the origin of “meaning” as the central theme. The earliest ornamental objects found in history currently date back 82,000 years which were equally separate from functionality and aimed at symbolic meaning (Ravilious). However, here was a plain urinal that was a ready-made object that was purely conceptual. Duchamp called it a ‘readymade’. He bought a urinal, and submitted it to an exhibition organized by the Society of Independent Artists. The society was obligated to accept all submissions from its members, but they refused to exhibit it. An article, thought to have been written by Duchamp following the refusal, claims:

> Mr Mutt's fountain is not immoral, that is absurd, no more than a bathtub is immoral. It is a fixture that you see every day in plumbers' shop windows. Whether Mr Mutt with his own hands made the fountain has no importance. He chose it. He took an ordinary article of life, placed it so that its useful significance disappeared under the new title and point of view – created a new thought for that object (Howarth).

Duchamp's Fountain is a critical piece of art for an exhibition rather than the result of a result-driven form of creative problem-solving the way commercial design is. It does raise the question of how conceptually designed low-volume pieces, such as the author’s *Do Hit*, differentiate from art. One could argue that design intends always to
communicate, as opposed to art which can be an autonomous activity done purely for the sake of the artist alone.

As it relates to the topic of this paper, it matters less which label is put on the result of the creative endeavor. The interest of this research is to find out how a Conceptual Thinking tool that is related to both Conceptual Design and Conceptual Art can add value to business and industry. The shared central theme of a concept over everything else is what ties both art and design together in this context. What happened in the early 1900s in France is that the application of meaning is the defining aspect of a previously aesthetically-judged object. One cannot understate the importance of this and it happened over a century ago, well before social (r)evolutions, such as “punk”.
Figure 1.1 Do Hit Chair, Marijn van der Poll, 2000
A clear definition of a design practice is difficult to find in literature, though in the eyes of the public it is a known term. This may be related to its diverse forms. However, the history of design practice is well documented. Industrial design is a relatively young phenomenon, first appearing in the early 20th century. Some view architect Peter Behrens to be the first industrial designer.

Behrens was the artistic adviser for AEG (the Allgemeine Elektricitäts Gesellschaft, or Universal Electric Company), for which he designed not only industrial buildings but also small electrical appliances, from tea kettles to fans. In addition, he determined the company’s corporate identity, packaging and advertising. Behrens’s approach was an extension of what architects such as Frank Lloyd Wright and Karl Friedrich Schinkel long practiced: total control of a designed environment at all levels (Zukowsky).

So though the origin of the discipline lies in its service for industry, there was a notion of a holistic approach from the very beginning. Design could play a role beyond designing the “skin” of products. It could be applied to tie together all visual and communication aspects of a company in a consistent design identity.
Designers and design consultancies evolved and expanded their services. The theory of design evolved as well and an important exponent was the Memphis movement that was launched in September 1981. What Ettore Sotsass and his collaborators were doing was liberating themselves from the smart, but in their opinion, soulless good taste in design. Though maybe not truly innovative, it was a deeply polarizing movement that had a profound impact on the discipline of design. The Memphis movement was questioning the role of what design meant just as much Duchamp had done with aesthetics in art some 70 years earlier. It was rebelling against design having to conform to the rules of business in the form of mass manufacturability, cost and functionality.

**R&D AND CREATIVE ANALYSIS**

This study is not confined to the discipline of design; rather, it is focused more on the world outside of design and how the thinking behind elements of creative disciplines of business as well as the arts can help shape a process that identifies meaning and helps create meaning-based solutions.

**IDEATION IN BUSINESSES**

What traditionally happens in R&D is the ideation phase is placed at the beginning (Lenfle). It is an orientation phase in which a form of creative analysis or brainstorming is often applied. This phase is then concluded and followed by a more factual part of development in which elements like business model and engineering take the lead. The main goal for companies in the development of any product or service is a form of control over the process. Project management is based on a model of the project lifecycle or phased stage-gate approach. A clear goal is established at the outset of the project and
each gate marks a decision. This is different from the origin of the discipline that started in the 1940s, when they had left a lot more room for alternative solutions to emerge using trial and error and iteration.

Yet many companies do not care about how the meanings of products change or about how to innovate them. They believe that meanings are a matter of marketing and communication, and not of R&D (Verganti 20).

Developing a product has many uncertainties, ranging from the expectations of the target audience to fluctuations in the price of raw materials. Calculations are made and the process structured to best deal with these uncertainties. Historically these have been the trusted tools, and they still are. But the importance of meaning has increased over the past decades, due to a diversification in products; from mass consumption, to purpose and meaning for engaged consumers. This has forced companies to reflect on the way they make money. A 2005 survey by the Economist Intelligence Unit reported that more than 50% of executives believe business model innovation would become even more important for success than product or service innovation (Johnson).

To improve development processes dozens of creative methods exist. The University of Delft’s *Delft Design Guide* has more than 60 design methods, tools and project management methods. There are creative tools that have some sort of cultural component, such as Personas (Boeijen, Daalhuizen, Zijlstra and van der Schoor 27). Paul Hekkert at the University of Delft has developed a scientific model for product design called ViP, *Vision in Product Design*, and is based on a statement or “raison d’être” as he
calls it, which is in turn used to create a product (Hekkert and Dijk). The focus is on the interaction and it is used to guide the further process together with the character the product needs to embody. In a video Hekkert explains to the viewer that the process starts with the vision that you are not designing for today – you are designing for tomorrow. It becomes charged with moral values; the designer must take a stand. Designing a product comes with responsibility, for products have an impact on people's behavior. For example the microwave changed eating habits and family patterns; people stopped eating together. There wasn't that specific point in time during the day anymore where people sat down at a table together and ate. What Hekkert and some of his colleagues believe is that you can take this notion of the impact of products on people's behavior and to some extent “predict” what the impact of the product will be. You then take this impact as the starting point of your design. That is what matters; it is not the product, but its impact. The product is just a means to an end. The ViP method developed by Hekkert is a context-driven and interaction-based approach to come up with products that give people meaning or value.

It is clear now that we can trace a line from the a linear economic mode, dictated by manufacturers starting in the late 1940s, to the meaning-based model of today in which consumers play a central role. Consumers have become far more sophisticated; they now exert influence on manufacturers to identify and quantify meaning in this diversified economy. Consumers expect products and services to satisfy not just functional needs, but to take into account the bigger picture in which they are used.

This research is significant because current business and educational models focus primarily on technical and cost-oriented aspects and fail to equally consider meaning at
the same level of importance. The methods that do exist have a general structure that
serves as a framework to guide its users through a process. Companies acknowledge the
importance of meaning; what is lacking is fundamental training in *where* to find meaning
and *how* to apply it. It is still presented as a result of creative insight without explaining
how to go about developing the crucial insights. Earlier in this study creativity has been
references as being based on as little as 10% “talent”. It can further be described as a state
of mind that benefits from a degree of structure and the time to teach it as a skill. A
thinking process that you can introduce, sell, perfect and generalize and apply across
disciplines (Kiewra 139).
CHAPTER 2: METHODOLOGY

Conceptual Thinking is not a tool that teaches people to become (Conceptual) Artists or (Conceptual) Designers. It is a process of creative analysis, of structured non-linear thinking. The result of this process is not a design per sé, but a strong word concept. Conceptual Thinking is the ability to recognize patterns. Those patterns lead to insights; those insights develop into strong concepts. The concepts in turn form the basis for powerful solutions. Meaning-based solutions.

PROCESS OF CONCEPTUAL THINKING

Conceptual Thinking can be more easily explained by separating it into three parts. The first being Holistic Analysis, the second, Diverging Converging, and the third – the Conceptual Blueprint. The process covers the initial question or problem up to the development of a final concept that guides further development. It serves as a mission statement as it were, on which to base the final solution. An essential element is a sense of urgency; information is sourced through multiple channels and filtered immediately. In a design environment, the concept once approved is the starting point of a search for the optimal solution. A typical timeframe in design education is two to three weeks from initial briefing, presentation of initial design research to the presentation of two to three finished concepts, one of which is selected. The overall goal is to distill meaning into a strong, precise message, which pushes people who use it to compress information and make tough choices.
THREE-PART MAP TOWARDS DEVELOPED CONCEPTS

The Holistic Analysis can be defined as a form of “big picture” thinking. It identifies the context in which the product or problem exists. Through Divergent and Convergent thinking a Concept is created. This concept consisting of a precisely worded statement supported by several – but not too many – key characteristics is finalized in a Conceptual Blueprint. The blueprint serves as a central element during further development through iterations ensuring that the meaning-based values are carried over from ideation to launch.

PART 1: HOLISTIC ANALYSIS

Conceptual Thinking is not a formula. You do not plug in a value to get another out of it. Rather, it is harnessed structured non-linear thinking, which can map out a project, or question. At first the objective needs to be clearly defined. Like a researcher, attempts are made to write and rewrite the hypothesis. Words are weighed in search of a short definition that can be mutually agreed upon.

Many trains of thought are developed though the use of various tools, guided by the objective’s structure. Tools include analysis derived from investigative journalism to forms of rebellion like defying the conditions set in a project to find answers, and targeted keyword searches.

For example if you are looking to start a budget airline you could start with the term “budget” to find similar examples of companies. By using a term to start an associative train of thought you would find comparable examples, such as generic food brands becoming more popular in supermarkets. This not only points to the increased popularity of low-priced items as well as a decreased appreciation for expensive brands
but also to the acceptance of “brand-less” products. This insight could become the theme of a possible concept (Tuttle).

This bigger picture is examined using Holistic Analysis. It is important to state here that during each phase of Conceptual Thinking no distinction is made between the type of information that is found. Coinciding searches can result in factual data or relevant experience-based data. Trains of thought are followed individually. As insights are created they are quickly fact-checked, validating promising information. By peering beyond the boundaries of an issue and looking into other disciplines, and by investigating metaphors and analogies, the entire scope is mapped and three important components are documented: facts, figures and meaning.

PART 2: DIVERGING CONVERGING

During the Holistic Analysis there is a constant dynamic of finding and filtering information. Promising insights are further developed by investigating emerging concepts to create a solid base. Typically, two to three insights are presented or shared to decide on a final concept. The scrutiny of findings that sprung forth during the Holistic Analysis stage continues. This makes sure that promising insights retain powerful meaning as well as remain feasible when judged against elements like manufacturing, audience and cost. There are many R&D anecdotes of financially crippling back-tracking phases half way through development, costing valuable time and resources, owing to compartmentalized development. Conceptual Design does not make distinctions between disciplines and assesses feasibility across departments from the very start. The final concept should be short and precise to offer clarity, and cultivate its core qualities in the following development process. It is also a new starting point – a point of divergence.
PART 3: THE CONCEPTUAL BLUEPRINT

The Conceptual Blueprint typically resides on a half a sheet of print paper. It normally consists of a word, or a short sentence, that defines its goal. It is then followed by a short list of key values, though not always. These supporting values hold up the key concept and are they are there to further describe and illustrate parts of the concept. If say a health kiosk houses a number of electronic components that need to be protected from outside interference, a key characteristic could be the materials. As Krippendorf’s Semantic Turn explains, products are not perceived by their makers in the same way as the people using them. Technical requirements can be important factors worth mentioning as parameters of a product. Not including vital information could also lead to confusion, which is why the supporting characteristics are there. As opposed to a typical list of requirements, the Conceptual Blueprint is kept brief. What this does is make sure that it centers around a single element and is neither diluted nor compromised down the line during development. But what it also allows is help stakeholders, who may be brought in at a later stage, to very quickly grasp essential meaning of a project and be able to offer input. Decisions are essentially removed from egos, and can be made continuously during the process, and evaluated. Departments can no longer lean back and argue from the perspective of expert knowledge “only they possess” but need to answer to a concise blueprint that each player understands and can argue the relevance in this specific context. The Conceptual Blueprint aids in truly understanding what something means.

Conceptual Thinking is a skill, an individual skill that can be mastered over time as it is trained. We all possess a form of creative talent from a young age, it is simply not
rigorously trained for the most part of our education and working life. Each one of the above-mentioned disciplines (Dutch Design, to Conceptual Design and Conceptual Art, Design Practice, R&D Creative Analysis and Ideation techniques, and academic Design Methods) that inspired Conceptual Thinking has strengths and flaws. It is through combining them that a unique tool emerges that can identify and quantify meaning in processes.

Figure 2.1 Conceptual Blueprint
CHAPTER 3: CASE STUDIES

The purpose of this paper is to explain the need for a thinking tool that reveals and quantifies meaning as well as to examine the potential value of Conceptual Thinking as a creative analysis tool. Such potential may be described as added value in the results of projects, improving ideation and development processes, or as a professional skill. It can manifest itself in a product that ties into a meaning-based demand in the market, or as a valuable processing skill for individual professionals. The first part of this research focused on the first part of this proposition; that is, the need for Conceptual Thinking; the second part will focus on the practical aspects of the method developed by the researcher, illustrated through three case studies, to show its effectiveness and potential worth. The first is a case study involving a commercial product that was developed using a conceptual development process, namely Holistic Analysis. The second example is a company training that used Conceptual Thinking to improve the R&D process within a research-based firm. The final example is a five-week master class in Conceptual Thinking. This was conducted with five participants who used an online learning tool to develop Conceptual Thinking as a professional skill. Combined, these three examples will show that Conceptual Thinking has the potential to allow both creatives and non-creatives to individually learn how to use a structured form of creative analysis and to add value to both their thinking processes and the outcome of projects. The format used will be a description of the cases, and an explanation of the application of Conceptual Thinking (or elements thereof) in each instance. Where possible measurable elements of success will be made.
CASE STUDY 1: CONCEPTUAL THINKING APPLIED IN PRODUCT DESIGN

A good example of a conceptual design is a project by the author for Royal Ahrend in 2010. It illustrates a conceptual briefing followed by strong product concept and finally a meaning-based connection with the target audience of the resulting product.

It started with an informal meeting at the company headquarters where a product was shown: a private meeting chair. This was not part of the company’s portfolio but was made by a competitor and had been bought by them to supply client demand for soft-seating solutions offering some form of privacy in open office spaces. The briefing was in itself a result of a shift in meaning in office environments. As the Gensler article shows, the open plan office and its value are an ongoing discussion today (“Focus in the Workplace”). The open plan office is worthy of merit for creating an open environment promoting collaboration, but presents the drawback that its open quality makes it more difficult to perform focused tasks. In the light of the 2008 economic crisis, the office furniture market had seen a steep decline in the demand for standard workstations in office projects. The office cabinet was being phased out by digital storage and working from home was generating a demand for increasing flexible workstations, or “flex spots”, not anchored to any single worker. Ahrend and other manufacturers of office furniture saw this opportunity and were looking into conceptual solutions for spaces for specific clients. A central element was soft-seating, an alternative way of working that was an extension of the home. The flex spot workforce movement was further spurred on by a new breed of mobile workers in a broader sense; less likely to be tied to a company based on salary and perks alone and who were seeking a more sincere connection to their company (McKinney). Research at the time suggested that changing postures during the
day and sitting in sofa-type chairs was a better ergonomic solution than creating the best adjustable swivel chairs. The natural posture taken in a sofa may not be ideal as a permanent workstation but it provided an ideal supplement to a standard workstation.

Through structured creative analysis, a concept was generated based on privacy. In particular, it was a concept that enabled working in private in a way that was respected by other colleagues. If somebody intruded on a conversation with the words “sorry to interrupt”, the invasion of personal space had already been made. The shape of the chair therefore had to emit a feeling of shelter and privacy. The design was then developed through iterations following the identification of the concept. It was decided to strive for an architectural, cocoon-type shape on the outside and a chair-like shape to communicate comfort in seating on the inside. Finally, the solution was found in the early 20th century wicker beach chairs found on Dutch beaches. This cocoon-type shape served to protect sunbathers from sun and wind on the outside whilst offering comfort on the inside.

However, placing the original wicker chair in an open plan office would have been a little more than design entertainment, like a playground slide between floors. Fine as a one-off solution for single design intervention, but not sustainable as a marketable product. For the shape to work outside of its original context and in its new environment – the open space office – it needed to transform. The briefing asked for a soft-seating solution and this was the ideal materialization for this iconic design shape. A steel tubular frame was welded, covered in foam and upholstered with contrasting fabrics inside and out. A coarse fabric using patterns and textures was chosen for the outside to emphasize the architectural shape, and a softer seating type fabric was used to emphasize comfort on the inside. By upholstering the entire chair it became a credible object in an office.
environment. The new shape was recognizable still and triggered a romantic response in people, yet was fully functional as a privacy-promoting soft-seating solution for office environments. The chair was introduced in 2010 and since then has sold in steady numbers. Sales figures from 2011 to 2014 totaled around 600 with a starting price of two thousand euros a unit. This translates into gross sales revenue of around 1.2 million euros. Clients include insurance company Nationale Nederlanden, the Ministry of Social Affairs of the Netherlands and Rabobank.

The name itself was a conceptual value-adding element of the design, overall. Instead of referring to its provenance and referring to Dutch beach resorts, a name was chosen with a unique sound but with a feel of being anchored to its beachside origins. After trawling through other languages, the Japanese word for shore was found: kaigan. It was pitched to the client to replace the typical number that was given to their products, The client came from a tradition of a volume market selling n office workstations and using short number-letter combinations for their logistics. This way, meaning was a central factor in the entire design process. It started with a question not based on function, namely work, but on meaning, namely privacy, in a changing market. This was given form through the product concept of respecting privacy through a closed-off architectural space to provide privacy to its users.
Figure 3.1 Ahrend Kaigan, Marijn van der Poll, 2010
It was materialized in a way that made it fit its new surroundings and finally given a name that further strengthened its personality as a product. Its success was a combination of recognition of the origin of the chair and the newfound value of adding privacy to open plan office spaces.

CASE STUDY 2: PROCESS-BASED APPLICATION OF CONCEPTUAL THINKING

In August 2014 the author was asked to conduct some corporate training in Conceptual Thinking at research firm, Imec, in the Netherlands. The company is located at the High Tech Campus in Eindhoven and is a leader in the field of micro-electronics and nano-technology. Having its roots in the academic world, the company had been focusing primarily on component-based applications. In recent years, however, clients had increasingly been seeking total-product solutions. This required a more holistic approach and Conceptual Thinking was used – applying Holistic Analysis in particular – to train a group of 10 researchers and managers in the method. A running project was used during the course, related to a consumer product.

The project started with an initial briefing by the program manager. Several days were then spent by the researcher on developing customized content for the day’s training in the form of keynotes, and items such as a notebook containing elements of the Conceptual Thinking method. Holistic Analysis was used by the researcher to assist the group of participants and/or guide the process. The main objective was to let the project team become acquainted with the method of Conceptual Thinking. The secondary objective was to map the project on a conceptual level in the “pre-kickoff stage”, where
the project was situated at the time. The training itself lasted a full day and a second session was scheduled for a later date.

The session started with the participants bringing in an item of personal value. They were each asked to explain what the object meant in 30 seconds to a minute. This created both an introduction as well as a personal story of a meaningful product. The participants were researchers with technology-based backgrounds and the objects mostly reflected this. There were items ranging from clever circuit boards to vintage technological components. On the opposite end of the spectrum there was a passport as a reflection of a person’s life and identity.

After this introduction a presentation was held using a keynote to further explain the origins of Conceptual Thinking. The background information was intended to both create an understanding of the need for such a method and to invite the company to introduce a more holistic approach to its research. The history and context of meaning also guided them towards the explanation of the actual method. The morning session was concluded by an exercise to illustrate the process using Conceptual Thinking. It was an exercise in which meaning features as the central element, which is integral to success.

Introduction:

KLM Dutch Airlines is the oldest commercial airline and wants to increase its brand strength. It intends to launch a type of “luggage”, whatever you want luggage to mean, not for profit but as an element outside of the airplane that is a visible extension of their brand and the travel experience as a whole.
Exercise:

Luggage for KLM, Royal Dutch Airlines
– aim is not profit but brand strengthening
– create a concept for the bag/case and for the “sale”
– trends are: air travel price-driven, not pleasant for everyone

The participants were asked to work quickly for 2-3 minutes on each step before the next slide was revealed, to show potential solutions and match their findings with the researcher’s.

The afternoon session was kicked-off by one of the company’s managers by briefing the team about the project. The participants were then asked to use the tools of Conceptual Thinking to try and define both a concept and the key values of the project.

In a 45-minute session they used both targeted searches as well as their personal expertise, and the results were shared in a concluding session. The information that was uncovered was not just technical, but focused more on the experience of the use of the future product. The participants were able to think across disciplines, and as a result most of the discussion was focused on constructive aspects as opposed to limitations of possible solutions. For a research firm that was used to being judged purely on hard empirical data and validating their products, this appeared to be a very open discussion.

The results of the day’s training were organized by the researcher, supplemented with the findings from the preceding creative analysis by the researcher, and used by the management team in a subsequent meeting with the client. The product in question had to perform both functionally as well as serve a role in a broader system.
After applying only the first element of Conceptual Thinking, Holistic Analysis, to this particular project at Imec the technical parameters were clear to both parties; however, the multiple realties in which the product could exist was not. Possible strategies were briefly explored and mapped. This then allowed the team to scrutinize the technical parameters and functional demands to see how they matched up. How did the client’s briefing compare to the new findings? Were the assumptions correct? In the end the results were shared with the client in a subsequent meeting. In this very early stage of a big project, Holistic Analysis had brought into view the “bigger picture”. A project manager at Imec summarises this in a masterclass feedback interview conducted by the author:

Imec is a research organization, with research roadmaps organized in programs that industrial partners can join. Such a business model requires careful matching of the roadmaps with long-term needs of industry, and consistent communication about the roadmap’s contents and intentions. Very regularly, new partnership opportunities arise, where Imec is asked to make proposals tailored to the specific needs of that partner. And sometimes companies have a shorter-term vision, in which they would like to make a product based on existing Imec technology. In that case, the collaboration is strongly project-driven (rather than program-driven). It was in the setting of a project collaboration that we used Conceptual Thinking techniques during an internal kick-off meeting. Throughout the process, we realized that the team became more aware of the goals and
challenges of the project, which may have been hidden in the technical specifications at the start of the process. At the end we felt that the process had positively contributed to aligned goals and team spirit. We feel that Conceptual Thinking may also help in defining and communicating new program proposals. We hope to explore that in the near future (Van der Poll “Masterclass feedback interviews”).

CASE STUDY 3: A MASTERCLASS IN CONCEPTUAL THINKING

The researcher developed a five-week masterclass using an online platform to teach Conceptual Thinking as a professional skill. The masterclass used a combination of video lectures and narrated keynotes combined with exercises and case studies to teach and train five participants in Conceptual Thinking. What had previously been an organic teaching philosophy and had been applied to design projects and in a project-based training, had now evolved into a structured course.

An existing online platform was used, called Siminars, to deliver the content. The original content was developed by the researcher and existing sources were used to back up claims and to supply context for the content. The goal of the masterclass was to teach the basics of structured creative analysis to a group of non-creatives in a relatively short period of time. Each of the five weeks was divided into two parts, with two deadlines per week, to make sure that there were frequently scheduled moments at which the participants were working with the material and building on their skill in using it. There was real-time, individual feedback. The five-week masterclass was concluded with a personal final project conducted by each of the participants with a professional emphasis.
RECRUITMENT

The participants were recruited through various online platforms as well as personal invitations. The researcher accessed a custom-built knowledge platform for Conceptual Thinking, called the Oyster Imperative, published articles explaining the theory of Conceptual Thinking in general terms on social network platforms such as LinkedIn and sent personal emails within the researcher’s network. In the end five participants, set as the minimum amount for the course, were found.

DEMOGRAPHICS

Four of the participants were recruited from the personal network of the researcher and one through a referral by an acquaintance. Four of the participants were male, one female and the age-range was from the late thirties to late sixties. Disciplines included IT, management and consulting, an entrepreneur and a former top executive of a multinational corporation.

The course was offered at a discount to create an incentive and a commitment. By putting a price on the masterclass at €375 it put a value on the content and the method of Conceptual Thinking. The discount was used to lower the threshold and not turn away people interested in a yet unproven method. As part of a post-course evaluation, one participant admitted that had the course been offered at the target price he would not have signed up, despite his organization paying the fee; however, after taking the course he deemed the original starting price fair and would recommend it to someone looking to learn structured creative thinking.
COURSE PLATFORM

Based on a previous discussion with an expert in building online courses, the platform Siminars was chosen. This web-based platform uses a subscription to host and create private courses and upload customized content. When compared to other platforms, such as Blackboard, it could be described as being less “academic”. It uses a step-by-step process guiding participants through the content. This approach was deemed as being most appropriate as a way of minimizing the burden on the participants in learning to use a new interface for a relatively short course duration. Although the participants shared the same platform and were able to view each other's responses, the setup of the course was not aimed at collaboration. Rather, Conceptual Thinking was taught as an individual skill. For the most part, Siminars worked well. One student had a lot of difficulty working with the interface and was eventually guided through the course with the help of the researcher. A survey was used to measure the effectiveness of the course to help support the evidence of the method. As a result of improper recording of several answers, this measurement tool could not be included in this research.

COURSE STRUCTURE

The masterclass was structured in four weeks of content and exercises, followed by a fifth week in which a final project was completed individually. Each week started with a checklist followed by a short 3 to 5 minute video lecture. The video lectures were informal and were used to create the context for the methodology of Conceptual Thinking, much the same as it is described in the first part of this paper. Video was used combined with text on screen to trigger multiple senses. Each video was shot against a
different background with the researcher in the role as the lecturer briefly explaining a particular aspect of interest in regards to the method.

This was followed by a narrated keynote with specific information about a particular tool in Conceptual Thinking, often illustrated by a case. This was then followed by an exercise to be completed by the participants.

ASSIGNMENTS

The elements above comprised half a week’s work. Sometimes the exercises were slightly more time-consuming, sometimes they took less time, with the maximum workload set at 90 minutes per week total. The answers to the exercises were uploaded by the participants onto the platform and feedback was given by the researcher in text visible beneath the uploaded responses, and through video messages recorded at the end of each week.

TIME PLANNING/ CONTENT

Weekly workload: 90 minutes max. per week, final week 2-4 hrs for final project

Individual sessions: 2 x 30/45 minute Skype or face to face sessions

Video lectures: 8 x ca 4 minute lectures in edited and graphically supported HD video

Keynotes: 6 x narrated keynote presentations
Below is an outline of how a Conceptual Thinking masterclass week was structured. (see Appendix A, outline of the entire course. See also Appendix B, description of how each week of the masterclass was specifically divided and structured).

<table>
<thead>
<tr>
<th>Week 1 – material and assignments</th>
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<td>INTRODUCTION</td>
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<td>• Welcome video</td>
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<tr>
<td>• Course goals/evaluation</td>
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<tr>
<td>• How the assignments and platform work</td>
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<tr>
<td>• Checklist week one</td>
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<tr>
<td>DAY 1</td>
</tr>
<tr>
<td>• Personal introduction</td>
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<td>• Paragraph about a meaningful object</td>
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<td>• Introduction to Conceptual Thinking video lecture</td>
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<tr>
<td>DAY 2</td>
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<tr>
<td>• The objective narrated keynote</td>
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<tr>
<td>• The objective supporting pdf</td>
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<td>ROUNDUP</td>
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<td>• Roundup week 1</td>
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<td>• Using Conceptual Thinking video lecture</td>
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<td>• Quick feedback video – using the objective – case study</td>
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*Figure 3.2 Week 1 – material and assignments, masterclass September 2014*
Figure 3.3 Online masterclass, Conceptual Thinking
THE RESULTS

In order to review the outcome of the masterclass, the author conducted a series of personal interviews, resulting in testimonials (Van der Poll, Marijn. “Conceptual Thinking masterclass feedback”). Two such testimonials follow here:

“This Masterclass has given me the framework to take a well-structured step back from my projects. I now have the instruments to come to insights I could not have imagined in my usual way of strategy development. More than in more traditional trainings I followed, this online masterclass provided me with a good mix between generic knowledge and individual feedback.” – director of collaborative, creative research platform

“The masterclass was an important addition to my work as a communication expert. It both helped me to get the core of a problem quickly and in structuring my creative input. This in turn helps me develop insights in a short period of time and reflect on the approach and objectives of a project with my clients at an early stage. In five weeks I have been able to progress in applying creative analysis. Where many of the training programs I enrolled in, in the past – costing several thousands of euros at times – stop at explaining a theoretical framework, Conceptual Thinking took it a step further: experiencing and internalizing the process.
Not only has this added value to my professional work, I was immediately able to start applying it as I was learning it. The result is that I am now able to better map the big picture at the start of a project, apply my creativity immediately and incorporate it in my communication plans as an added component. The course was not just strong content wise, it was easy to follow using the online platform tailored to my needs by using personal contact sessions to discuss assignments and reflect on using it in my daily work. I recommend it to anyone wanting to apply creative thinking.” – marketing & communication expert

Of the five participants, two completed the masterclass within the 5-week time frame. All completed the first four weeks of the course. One turned in the final project late and two had yet to submit their final project a month after the end of the course. One of those participants honestly admitted to having underestimated the time needed and indicated he would probably not be finishing the course. Each of the participants showed a positive development in their application of Conceptual Thinking in subsequent assignments. As the level of complexity increased, so did their skill in directing their searches and the quality of their findings. This can be compared to results observed in design students undertaking similar projects, mentioned earlier in this paper. These short strategic assignments have no 3D design component. They are strategic research exercises aimed at creating a conceptual basis for further development. In the case of the design students, the results were scrutinized quickly to look for potential gaps in the reasoning, either regarding cost or manufacturability or for instance target audience. In
short, it was a quick scan of the strengths and weaknesses of a potential concept before allowing continuation and further development. The results of the participants of the masterclass were judged by the researcher using this same basic logic. The quality of the results were comparable in that they offered equal amounts of potential in being developed into final products or services. Another positive indicator was the final projects. The participants used running projects in their respective disciplines where possible. This meant that the skill of Conceptual Thinking was not merely practiced through hypothetical exercises but applied directly in daily work. The participants who submitted their final projects were able to apply the tools independently and indicated that they had helped to create more depth in the ideation process.

LIMITATIONS OF THE STUDY

PRODUCT DESIGN APPLICATION OF CONCEPTUAL THINKING

What is measurable in the case of the Ahrend Kaigan is its commercial success. A product that had been purchased from a third-party supplier is now an Ahrend product that generates sales. The product itself is not a first necessity as a soft-seating solution in an office environment, yet many companies and institutions have purchased the chair for their project interiors. What hasn't been studied is the impact on the feeling of privacy in work environments. In photographs of project interiors the chair is seen in various spaces, sometimes in transit spaces such as hallways where one could argue that the intrusion on people working is already less, as it is not a space with workstations. The general feeling of privacy in the chair seems to have been carried over well; what would be interesting to
study is how the original intention (of combining the chair with workstations) is actually used in the market.

PROCESS-BASED APPLICATION OF CONCEPTUAL THINKING

First of all the project is ongoing, and a second session has yet to be scheduled. In the first session the time proved too short to teach the participants to use the tools of Conceptual Thinking effectively. The participants did apply the method as explained in the 45-minute session. However, the tools themselves had to be explained in a very short time, due to the schedule. The result of this was that team members were not able to practice using the tools individually, or receive feedback, or apply them in a more experienced manner in a complex process. In retrospect the session served as a good introduction but was not effective in fully teaching the method. A subsequent session was scheduled to focus primarily on the participants grasping the content and applying it.

Secondly, the researcher had used his expertise in Conceptual Thinking to prepare specific information to be able to guide the team through the process and assist where needed. This information was combined with the results of the efforts of the participants and as such, it is difficult to measure which specific data was of particular value in the subsequent discussion of the management team of Imec with the client. At the time of writing the project was still in progress and as yet there is no product. Finally, time was a factor. After the session held at the end of August in 2014, the 5-week online masterclass was developed in Conceptual Thinking, which was able to build on the findings of the process-based training.
MASTERCLASS IN CONCEPTUAL THINKING

The masterclass had a small number of participants and not all of them completed the final project, meaning not all participants completed the entire course. Of the five participants four were recruited from the direct professional network of the researcher. A form of positive bias in the evaluation of the course can therefore not be totally ruled out.

The cost associated with participating in the course was installed to create a sense of commitment in the participants. What this also did was turn the course itself into a commercial product. As this product was created by the researcher and the potential financial reward as a result of developing this product would benefit the researcher, a form of confirmation bias could also be part of the final evaluations. In the end the effectiveness can best be measured against its effective use by the participants now and in the future.
CHAPTER 4: CONCLUSION

The promising results of this study lie in the ability of “non-creatives” to apply Conceptual Thinking; that is, the basics of a structured non-linear analysis process after just five weeks of training. The examples, as well as the social and economic context of this study, describe a need for tools that allow professionals to use this type of non-linear thinking to map meaning in processes and projects. Traditionally these types of analysis are practiced as part of a design process by students who have been selected on the basis of their portfolio to enroll in a design-related educational program, and therefore supposedly possess “creative talent”; this style of analysis is then trained through trial and error over a period of several years, without a detailed step-by-step process. Even then there is no detailed process. Conceptual Thinking provides exercises as well as a theoretical framework for structured non-linear thinking. Ideation is no longer a “stage” but the significance, meaning, is the core of each process. It is researched, developed into insights and serves as the guideline for final development.

This study offers some positive indicators with regards to the aim of bridging the gap between the existing processes, using facts and figures, and the process developed by the researcher, based on meaning. By themselves the three examples do not provide conclusive evidence; however, combined they are a good first step. More research is needed to be able to make substantial claims about the effectiveness of the method of Conceptual Thinking and the structure of the content and exercises can only improve as more people apply it in different settings. A part of the evaluation of the method can be found in the success of both the application by individuals, the added value to their thinking processes, as well as the commercial results of their professional endeavors.
Elements like intuition play an important part in the potential success of any successful product or service and are inherently difficult to measure in the ideation phase. Having said that, the bigger whole that is a final product can be measured against its success in the market as illustrated by the Ahrend Kaigan chair. Further research needs to be done to provide conclusive, scientific evidence of the effectiveness of Conceptual Thinking. One way could consist of analyzing the results of the concept-based exercises and/or performance-based surveys before and a period after the course. The group of participants in the course was kept small to be able to maximize face-to-face contact as well as provide frequent online feedback, as opposed to a large sample of students working more independently. A study with a substantial number of participants focused on a particular part of Conceptual Thinking – for instance the Concept Blueprint – could in turn be used to measure a specific aspect.

It is the aim of this study to share the initial findings of what is a developing methodology in creative analysis. Its name was chosen to reflect its roots in Pattern based Thinking and Conceptual Design and there are ties to other disciplines and movements. As these evolve, so too should Conceptual Thinking. It is not in itself an organizational model that needs boundaries and definitions to standardize it. It is an individual skill that needs to develop in the mind of each person who applies it, and be allowed to develop in his or her particular state of mind. The structure and exercises are merely a jump start and can be replaced over time by an intuitive process in which connections are made and meaning emerges as an equal, quantifiable element in the development of products, services and processes.


## Week 1 – material and assignments

### INTRODUCTION
- Welcome video
- Course goals/evaluation
- How the assignments and platform work
- Checklist week one

### DAY 1
- Personal introduction
- Paragraph about a meaningful object
- Introduction to Conceptual Thinking video lecture

### DAY 2
- The objective narrated keynote
- The objective supporting pdf
- Case study
- Answers to the case study
- Roundup preview

### ROUNDUP
- Roundup week 1
- Using Conceptual Thinking video lecture
- Week’s comments/learning goals
- Quick feedback video – using the objective – case study
## Week 2 – material and assignments

### DAY 1
- Education vs Intuition video lecture
- Objective part II – divide and conquer
- Objective part II – divide and conquer.pdf
- Case study
- Answers to the case study
- Survey

### DAY 2
- Business Upbringing video lecture
- Various Mind Scanning Tools
- Sources

### ROUNDUP
- Roundup week 2
- Quick feedback week 2

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## Week 3 – material and assignments

### DAY 1
- Checklist week three
- History of Conceptual Thinking video lecture
  - 6Ws of Conceptual Thinking narrated keynote
  - 6Ws high res.pdf
  - Objective part II – divide and conquer.pdf
  - Assignment week 3.1
  - Answers to the case

### DAY 2
- Your personal 6Ws Notebook
- Video lecture: Generations
- Assignment week 3.2
- Answers assignment

### ROUNDUP
- Roundup week 3
### Week 4 – material and assignments

**DAY 1**
- Experience Flow – Conceptual Thinking video lecture
- Experience Flow narrated keynote
- Experience Flow pdf – keynote without narration
- Case study:
- Paste the answers to the case here

**DAY 2**
- Background info – concept
- concept.pdf open and review (no audio)
- Case study
- Paste your answers to the case study here

**ROUNDUP**
- Roundup
- Fail Spectacularly

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### Week 5 – material and assignments

**DAY 1**
- Survey

**DAY 2**
- Applying Conceptual Thinking narrated keynote
- Applying Conceptual Thinking pdf
- Sources- a complete bibliography of sources related to Conceptual Thinking

**ROUNDUP**
Final Roundup
APPENDIX B: MASTERCLASS STRUCTURE

Week 1 served as the introduction much the same as the introduction of the preceding corporate training. Part two of Week 1 was spent working on the first tool in Conceptual Thinking, called the objective, aimed at defining the goal of a project or question. This was followed by an assignment and the week was finished with a returning element called Roundup, in which a final video was included as well as video feedback.

Week 2 to focused on various mind-scanning tools in the first part, finishing off with an assignment. Part two of Week 2 was to supply more background information and sources.

Week 3 focused on one of the key tools and Conceptual Thinking called the 6Ws. This method derived from investigative journalism was first explained in a keynote and followed up using a customized notebook to allow the participants to apply this tool in a practical exercise.

Week 4 returned to the regular schedule of two deadlines, first zooming in on the experience flow. This tool mapped all events on the timeline and was followed by an assignment. In week 4 the assignments were getting more complex, using several variables as opposed to a single variable (as was the case in week 1). The second part of Week 4 was spent with an additional assignment again using multiple variables. This was the KLM Airlines assignment explained earlier in this study.
In week 5 the participants worked on their final projects and some final content was posted on the platform to keep the participants engaged. The turning in of the final assignment marked the end of the five-week master class in Conceptual Thinking.