SYNTHESIZING

a blue ocean.

MASTER THESIS OF DANIEL VESTER

"I dream of instruments obedient to my thought and which with their contribution of a whole new world of unsuspected sounds, will lend themselves to the exigencies of my inner rhythm." (Varèse, 1996)

Master Thesis
Industrial and Strategic Design
School of Arts, Design and Architecture
Aalto University
April 2012

Daniel Vester
hello@danielvester.com
Tutor: Prof. Peter McGrory

Aalto University
School of Arts, Design and Architecture

Acknowledgements

I would like to express my gratitude to all those who have given me the possibility to complete this thesis.

First of all, I would like to give my deepest appreciation to Arturia for allowing me to take part in this remarkable project. It was a valuable opportunity for me to gain insight, knowledge and experience of the product development process in the electronic musical instrument industry.

Furthermore, I would like to thank my tutor Prof. Peter McGrory for his support and advice throughout the research process. In addition, I wish to thank my sister Nadescha Stenzel for the tremendous help she has contributed to my thesis. I also wish to thank my friends and colleagues who have influenced or contributed towards this work.

Finally, I am deeply indebted to my family for the unparalleled support they have given me throughout my studies.

Daniel Vester

AB-STRACT

The purpose of this Master thesis was to determine how electronic musical instrument companies could utilize innovation strategies to add value to their products and create new business markets beyond their core. The theoretical framework was established by outlining competitive strategies suitable for adoption by electronic musical instrument companies. The Blue Ocean Strategy was compared to traditional competitive strategies such as Porter's Five Forces, and subsequently chosen because of its relevance towards the electronic musical instrument industry. The Blue Ocean Strategy was also selected due to its focus on creating new uncontested markets, capturing new demand, and gaining competitive advantage by simultaneously pursuing differentiation and low cost. A selection of Blue Ocean Strategy tools and frameworks (Strategy Canvas, Four Actions Framework, Buyer Utility Map, 3 Tiers of Noncustomers) were chosen by considering Arturia's existing product development process. Their ability to be integrated into Arturia's new product development process and their engaging nature, which allowed them to be used by a team with a broad set of skills, were also considered as key factors.

The theoretical framework was applied to the product development process of a new analogue synthesizer, the Arturia MiniBrute. By analysing quantitative sales figures in the electronic musical instrument industry, Arturia's closest competitors in both the portable and affordable hardware synthesizer market and the portable and affordable analogue synthesizer market were identified. The Blue Ocean Strategy tools and frameworks were thereafter applied to Arturia's closest competitors. The outcome proved that competitors were competing on many of the same factors, and predominantly offering utility through the use of the instruments. Analysis of the closest competitors provided a substantial basis for Arturia to build their strategy on.

Having identified the market positioning and product strategy of the MiniBrute's closest competitors and the potential noncustomers of both above-mentioned markets, the creation of the MiniBrute's strategy curve was initiated. This involved scrutinizing and developing the factors that the EMI industry competed on, and analysing them in relation to the closest competitors. The result was a strategy with a strong focus and clear differentiation compared to the closest competitors. It was used to shape the development of the MiniBrute.

Findings reveal that the Blue Ocean Strategy tools and frameworks can help electronic musical instrument companies add value to their products and create new business markets. Given the results, companies should determine the value that certain factors can bring to a product, not only while using it, but during the whole user experience cycle. It is recommended that companies focus more on the emotional appeal of a product, rather than technical qualities, and that companies challenge traditional mindsets by eliminating factors that have been taken for granted in the industry.

Keywords: value innovation, technology, blue ocean strategy, new product development, electronic musical instruments, synthesizers

TABLE OF CONTENTS

INTRO-DUCTION

In this introductory chapter, the background to the research area of the thesis is provided along with the current trends in the EMI market. A brief introduction of Arturia is also provided along with its main milestones in recent years. The framing of the topic and its delimitations are also justified.

1.1 Background

Music plays a significant role in peoples' lives, whether for playing, creating, listening or bringing us together with others that share similar interests. It documents the history of social and cultural changes in society, and is in a state of perpetual evolution. Throughout the last 100 years we have seen significant changes in the development of musical instruments, in particular electronic musical instruments, a field very much driven by the advancement of technology. These changes have led to a crowded market and an increase in competition.

The Blue Ocean Strategy ("BOS") is however challenging companies to make competitors irrelevant. Instead of stealing market share from competitors and competing in "bloody red oceans", companies should create new untapped market space, "blue oceans" (Kim & Mauborgne, 2005). This theory is highly relevant in hypercompetitive environments such as the electronic music instruments industry.

1.2 Motivation

Music has always played a substantial part of my life since an early age. After having moved from one acoustic instrument to another, I finally came to realise that it was the creation of sounds that appealed more to me rather than the playing of the instrument itself. This realisation sparked my interest in synthesizers and sound design.

During the spring of 2009 I was asked to join Matti Luhtala (project leader) and Anna Salmi from the Media Lab in developing Music of the Spheres, an interactive musical instrument that stimulates the learning of music and sound for children. Music of the Spheres consists of a tabletop projection screen and different-sized geometrically shaped blocks that act as tangible interfaces and allow children to interact with the digital world, create kaleidoscopic geometrically shaped flowers and ex-

plore poly-rhythmic sound patterns with different musical scales. This project presented a great opportunity to explore the combination of music and product development. I became increasingly intrigued with the idea of developing innovative music production tools that open up new creative horizons for professional and amateur musicians alike.

In spring 2010 I approached Arturia about the possibility of an internship at their office in Grenoble, France. Arturia, a company that specialises in software musical instruments and hardware synthesizer, was interested in bringing me aboard a new project. I was given the initial briefing, which was to take the role as product manager in the development of a new analogue synthesizer. From the commencement of the project, I worked very closely with a dedicated team at Arturia which consisted of Frédéric Brun, Antoine Back, Noritaka Ubukata, Bruno Pillet, François Best, Richard Phan and Jean-Michel Blanchet with the addition of Yves Usson, analogue synthesizer guru and owner of the DIY synthesizer website yusynth.net. Over the course of a year we developed the synthesizer from initial concepts to a final commercial product.

1.3 Research Purpose

The purpose of this thesis is to discover how companies working in the electronic musical instruments ("EMI") industry can apply the analytical tools and frameworks of the BOS to make proactive changes that will bring value and new markets to the industry.

1.4 Research Question

How can EMI companies utilize innovation strategies to add value to their products and create new business markets beyond their core?

Objectives:

- To apply the analytical tools and frameworks of the BOS to Arturia's relative positioning in the current EMI market
- To successfully utilize the BOS for Arturia, and as a result create a new market
- To summarize and critically discuss my experiences at Arturia

1.5 Outline of the Thesis

Chapter 1 – Introduction

In this introductory chapter, the background to the research area of the thesis is provided along with the current trends in the EMI market. A brief introduction of Arturia is also provided along with its main milestones in recent years. The framing of the topic and its delimitations are also justified.

Chapter 2 – Theoretical Framework

This chapter can be divided into 2 parts. At first it presents the characteristics of the EMI industry and outlines the competitive strategies that can be adopted by EMI companies. Secondly, it introduces the reader to value innovation and emotional appeal by covering the relative BOS tools and frameworks.

Chapter 3 – Methodology

This chapter uses the theoretical framework and applies it to Arturia's closest competitors, and the company's relative positioning in the market. It continues by formulating a strategy that Arturia can deploy in order to create a new product in an uncontested market space.

Chapter 4 – Outcome and Findings

This chapter begins by documenting the product development process of the Arturia MiniBrute through utilising the BOS formulated in the previous chapter. It offers critical feedback of the initiation, development, and execution of the strategy.

Chapter 5 – Conclusion and Further Research

This chapter concludes the findings of the research in order to answer the main research question. Furthermore, it lists various recommendations that companies in the EMI industry can utilize to improve the process of creating a position of innovative leadership to further their growth and success.

1.6 Electronic Musical Instruments?

An EMI is an instrument that produces sounds by outputting an electrical audio signal that ultimately drives a loudspeaker. Electronic musical instruments are now widely used in most styles of music. The development of new electronic musical instruments continues to be a highly active and interdisciplinary field of research.

Throughout the last century there has been considerable development in the field of EMIs. As old instruments die, new instruments emerge to meet the changing needs and demands of everyday musicians. When examining companies operating in the field of EMIs, one can see that it is not the products that have come to fascinate the world that have continued to become successful, but rather those products that provided unparalleled value to its customers and were backed by a strong business model. Given the challenges and competition prevalent in the EMI industry, companies need to implement innovation strategies into their business models rather than retaining their existing theories. While there are many theories that discuss the implementation of innovation, this thesis sets out to prove that the BOS is viable in being able to sustain throughout the challenges faced in the industry. To enable deeper understanding of the topic of this thesis, the following section will provide an outline regarding the development of EMIs.

1.6.1 Early Electronic Musical Instruments

In the 18th Century, musicians and composers modified and hacked a number of acoustic instruments to integrate the recent discovery of electricity. This resulted in the first electronic musical instrument, the "Denis d'or" (Figure 1), invented by Czech theologian Václav Prokop Diviš in 1753 (Davies, 2009).

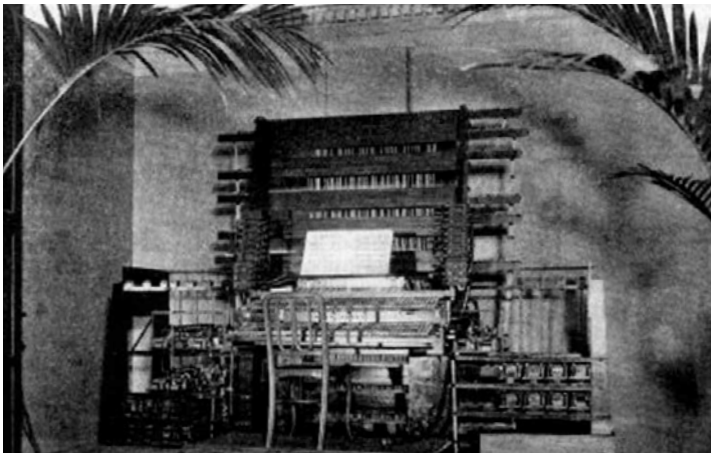


Figure 1 - Denis d'or

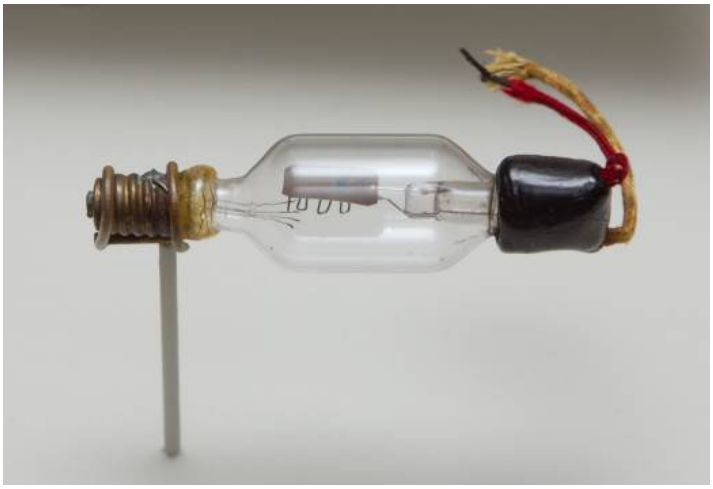


Figure 2 - Triode Audition

The first electronic synthesizer was invented in 1876 by Elisha Gray. Gray invented the "Musical Telegraph" by accident while working on a new telephone technology. He discovered the possibility of controlling sound from a self-vibrating electromagnetic circuit, and thereby invented a basic oscillator (Chadabe, 2000).

Another significant impact on the early development of EMIs was Lee DeForest's triode audition (Figure 2). This was the first vacuum tube invented in 1906, which led to the generation and amplification of electrical signals, radio broadcasting and electronic computation, amongst other things.

1.6.2 **Analogue Synthesizers**

An analogue synthesizer is a synthesizer that uses analogue circuit and computer techniques to generate sound electronically. Before the 1960s, synthesizers were still very expensive to produce since they were mostly designed and built by hobbyists and enthusiasts using manual manufacturing methods and expensive components. During the 1960s, analogue synthesizers were built with a variety of interactive elements, such as potentiometers, that allowed users to interact on a deeper level with the instrument by adjusting the traits of the sound that is produced. Between the 1960s and 1980s, analogue synthesizers became increasingly popular and, due to technological advancement, cheaper components and more efficient manufacturing processes, they became more accessible for musicians. Companies such as Korg, Roland and Yamaha recognised this as an opportunity to provide to the masses by introducing entry level synthesizers for a very cheap price. This run of events saw the potential of the synthesizer to become a truly commercial musical instrument.

Figure 3 - Yamaha DX7

1.6.3 Digital Synthesizers

From the mid-1970s onwards, it became possible to use digital signal processing (DSP) techniques to make sounds. The first digital synthesizers were also very expensive, such as the Yamaha GS-1 which originally sold for $16,000 (Roads, 1996). The cost of digital synthesizers fell rapidly in the 1980s. In 1983 Yamaha released the Yamaha DX7 (Figure 3), the first commercially successful digital synthesizer, and one of the most commercially successful synthesizers of all time (Holmes, 2008). It was priced at $2,000, putting it within range of a much larger number of musicians (Le Heron R, 2005).

Max Mathews had already been using the computer to generate and manipulate sound since 1957, but primarily for the purpose of research since computers were too expensive during this time. With the considerable drop in price of microprocessors in the 1980s, computers started becoming a viable platform on which to make music. However, it took until the mid-1990s for software synthesizers to become a real commercial success with the release of software such as Native Instruments' Generator, one of the first commercially successful fully modular software synthesizers. Since the mid-1990s, the market for software synthesizers has exploded as a result of numerous competitors continuing to enter the market. This was the result of both the digital signal processing ("DSP") capabilities becoming more powerful and affordable, and the personal computer being accepted as a genuine musical instrument.

1.6.4 Modern Electronic Musical Instruments

The increasing gain of computing power, combined with the standardisation of electronic music communication protocols (such as MIDI), has enabled the separation of EMIs into the music controller (the tangible hardware that the user physically interacts with) and the music synthesizer. In the future we will most likely see the trend in EMIs move towards immersive virtual instruments capable of providing musical

feedback not only in the form of audio, but also visual, tactile and haptic.

1.6.5 **Arturia**

Arturia is an EMI company located in Grenoble, France, and founded in 1999. The company's focus has been on the development of electronic music software and hardware instruments, primarily the emulation of famous vintage analogue synthesizers.

Over the last ten years, Arturia has gained great popularity in the software synthesizer market. Its software recreations of the most famous vintage synthesizers have served many professional and amateur musicians throughout the world. Their sound quality is reputable for being very close to the original, and their ergonomics and ease of use have been a key element to their success. Today the company is still perceived as a leader on the synthesizer-emulation plugin market.

The first major diversification of Arturia's product range came with the introduction of the Analog Factory Experience ("AFE") in 2006 (Figure 4). This hybrid product consists of a selection of Arturia's best vintage synthesizer recreations in a software interface that can be controlled by a dedicated midi keyboard. The AFE was targeted towards musicians who want to experience analogue sounds at a very reasonable price, even if the product's control and sound editing capabilities have been purposely limited.

Figure 4 - Analog Factory Experience

Figure 5 - Arturia Origin Keyboard

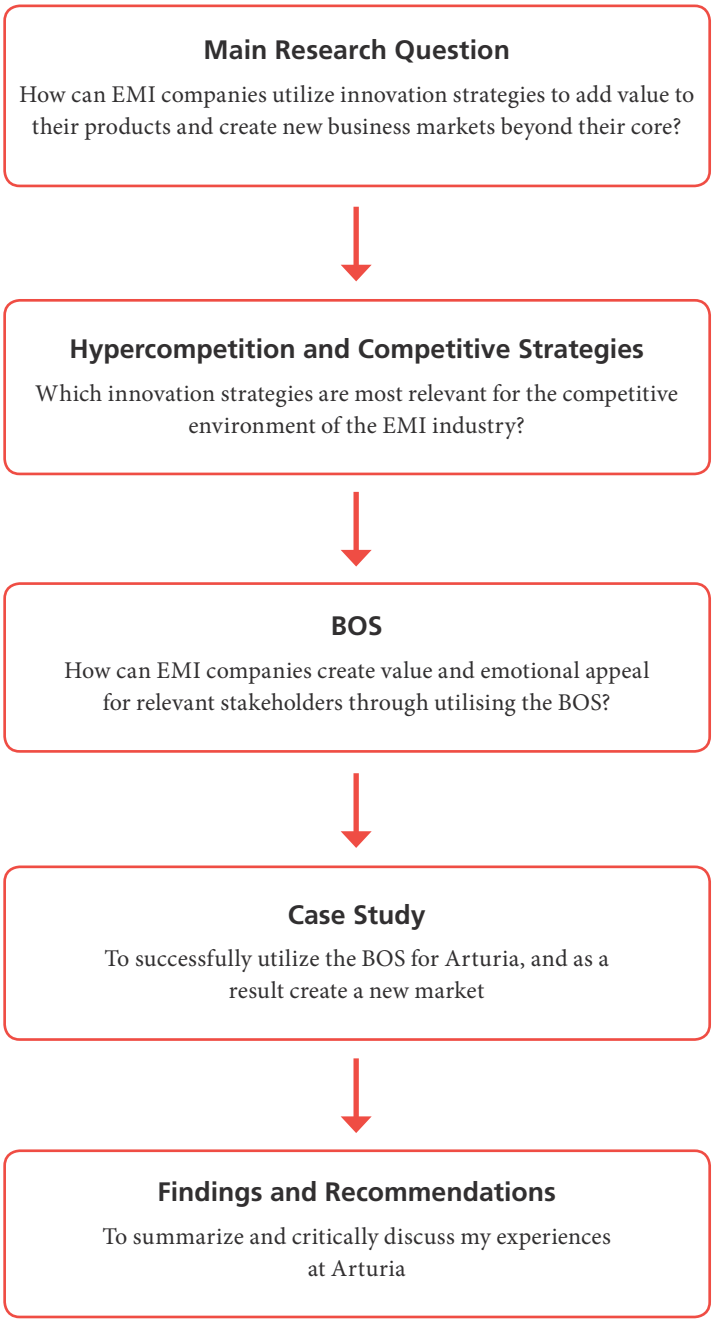
In 2007 Arturia made its entry into the hardware synthesizer market through the release of the Arturia Origin. Mixing the different modules of their software synthesizers into a sturdy and intuitive hardware package, Origin was definitely targeted towards professional musicians that want to synthesize sounds in a studio and live performance situation. This upper market product was critically acclaimed for its innovation and design. Following its success, Arturia decided to launch a keyboard version of the Origin (Figure 5) in order to serve the needs of live musicians who want an all-in-one product.

Since the release of the Origin, Arturia has devoted more resources to the development of hybrid (hardware/software) products, and as a result have released Arturia Spark, a hybrid drum instrument targeted towards the semi-professional market.

1.6.6 **Scope and limitations**

This thesis will specifically focus on Arturia in relation to leading EMI producers and therefore does not intend to cover the musical instrument industry as a whole. The decision for this was due to the limited quantitative data that was available, and because of the constraints of time. Since the quantitative data used in this research is based on the US market, any market outside of the US will not be taken into consideration. Finally, any quantitative analysis will lose its timeliness soon after the relevant data has been collected. This is due to manufacturing costs decreasing, therefore resulting in cheaper end products. Another reason is that the market is increasing at such a rapid rate, due to the hypercompetitive characteristics of the industry.

1.7 Research Model



THEO-RETICAL FRAME-WORK

This chapter can be divided into 2 parts. At first it presents the characteristics of the EMI industry and outlines the competitive strategies that can be adopted by EMI companies. Secondly, it introduces the reader to value innovation and emotional appeal by covering the relative BOS tools and frameworks.

2.1 Hypercompetition and Competitive Strategies

2.1.1 The Hypercompetitive Environment of the EMI Industry

In order to understand the strategies of EMI companies, it is vital to understand the characteristics of the industry and the competitive environments that companies are facing. A hypercompetitive environment is a market with an ever increasing level of competition. In the case of the EMI industry, it can be characterised by rapid changes in computing technologies, DSP processing capabilities, and the swift adoption and industry growth of music controllers. These rapid changes are a hindrance when trying to maintain a competitive edge for a prolonged period of time since they allow competition to enter the market (D'Aveni, 1995). Hypercompetition motivates companies to rethink their strategies, and experiment in new ways that go against traditional means. The stability of the market is threatened by short product life cycles, new technologies, newly entering firms, and radical shifts that occur through the development of new markets (D'Aveni, 1995).

2.2 Red Ocean vs Blue Ocean

The strategies that companies choose to utilize are highly dependent on the environment that they operate in. However, companies can chose a variety of approaches to help them overcome the hypercompetition faced in the industry. Kim and Mauborgne divide the market into two components, the blue and the red oceans. They define traditional competition-based industries with defined boundaries where companies need to outperform each other for a piece of the market segment as red oceans. Conventional logic and traditional competitive strategies such as Porter's Five Forces are considered red ocean strategies. The blue ocean, by contrast, is a large unknown market segment unaffected by competition which can be reached through creating new demands (Kim

& Mauborgne, Blue Ocean Strategy: How to Create Uncontested Market Space and Make Competition Irrelevant, 2005). Kim and Mauborgne state that:

To win in the future, companies must stop competing with each other. The only way to beat the competition is to stop trying to beat the competition (Kim & Mauborgne, 2005).

2.2.1 Compete in existing market space vs. Create uncontested market space

The red ocean approach to markets is to compete against the competition in a 'bloody battle'. Companies conduct market research to analyse their positioning in the market and try to identify the trends and strategies of their competitors. The company can then adapt their own strategies depending on their competitors' moves. Feedback is usually received from end users, and from this, incremental changes can be made to a product or service. Success is usually achieved through delivering either more value to customers, or reducing the costs of a product. Products are also developed by copying competitors' features, and as a result, customers from other companies can be stolen (Porter M. E., 1996).

As opposed to red oceans, blue oceans refer to all industries not existing today, the unknown and unexploited market space, with opportunities for vast profit and growth. Focus is placed on creating new markets, and therefore making any competition irrelevant. Companies can develop products and services that create new customer demands, which as a result can either create a completely new market, or shift the boundaries of the current industry. Customer demands must be exploited with disruptive services, which can be of high risk to develop, but can reap great rewards. By analysing the experience cycle of a product or service, complimentary value-enhancing products or services can often be identified (Kim & Mauborgne, 2005).

As a company Arturia has generally taken the red ocean path since being founded in 1999, with software emulations of classic vintage synthesizers being the first products released. Arturia found itself settling into an established market primarily dominated by the German music company Native Instruments. Instead of pushing to create a blue ocean, Arturia continued to fight in the existing market, developing one vintage synthesizer emulation after another. By 2005 the software synthesizer emulation market had become saturated with numerous competitors fighting for their share. Feeling the pressure, Arturia was forced to rethink its current strategy, and as a result, began the development of the Origin, a high-end modular hardware synthesizer.

2.2.2 **Beat the competition vs. Make the competition irrelevant**

The red ocean approach requires a company to look within its own industry to identify its closest competitors. The company will proceed to fight the competition on the basis of similar values and factors. The Blue Ocean Strategy opposes this approach by making the opposition irrelevant. This is done by looking across the six conventional boundaries of competition to open up commercially important blue oceans.

2.2.2.1 Look across alternative industries

Alternative industries represent products or services that have different forms, but the same general functionality, objective or utility. For example, cars and busses have different forms and exist in different industries, but both cars and busses provide the same core purpose, getting from one place to another. Alternative industries must not necessarily have the same core functions. For example, restaurants provide food and a social environment, and cinemas provide visual entertainment, however, both have the same objective: providing an enjoyable an evening out.

When trying to create uncontested market space, companies should strive to look across alternative industries instead of competing in the same industry. By focusing on the commonalities and key factors between alternative industries, while at the same time eliminating everything else, a company can create a blue ocean of unexplored market space (Kim & Mauborgne, 2005).

2.2.2.2 Look across strategic groups within industries

Strategic groups within industries refer to a group of companies within an industry that pursue a similar strategy. The groups can be identified through the bases of vertical integration, product platform, R&D expenditures, and further theoretical concepts (McGee, 1986). Strategic groups are generally ranked according to their price and performance with these two factors being relative to one another. Companies most commonly focus on improving their competitive position within these strategic groups. Take for example Mercedes, BMW and Jaguar who all focus on competing against each other in the luxury car segment, thus allowing for economic car companies to compete within their own segment (Kim & Mauborgne, 2005). When creating a new market, companies should look across strategic groups within their industries, and determine what the different offerings between these groups are.

2.2.2.3 Look across the chain of buyers

The chain of buyers refers to the various parties involved during a buying decision. Most commonly these are separated into three groups:

purchasers, users and influencers (John Pruitt, 2006). For example, a child would be the user of a gaming console, the gaming shop would be the influencer, and the purchaser could be the parent of the child. Most commonly an industry converges on a single buyer group. The gaming industry, for example, focuses heavily on children, i.e. the users. By challenging the conventional definition of the buyer chain and shifting the focus to another buyer group, companies can unlock new value and as a result reconstruct the market boundary.

2.2.2.4 Look across complementary product and service offerings

Complementary products and services complement one another by indirectly impacting the value a user receives. For example, a company selling vacuum cleaners is likely to complement the cleaners by also selling vacuum bags. Complementary products and services do not necessarily have to complement each other based on necessity, but also from the standpoint of the buyer experience. For example, babysitting assistance and parking facilities are two complementary services to movie theatres. By expanding one's attention to the holistic solution a product or service provides, and by looking at the whole user experience cycle of such product or service, companies can create a blue ocean of market space.

2.2.2.5 Look across the functional or emotional appeal to buyers

Functional appeal refers to the functional value that buyers receive from a product or service. This is most commonly based on the function price trade-off. Emotional appeal to buyers refers to the emotional value that is gained by using a product or service. Companies tend to converge to either push the emotional or the functional appeal of an offering. What companies need to do is question their current focus in relation to the focus of their industry. For example, emotionally oriented industries offer many extra emotional values that heavily increase the price and do little to provide more function. By removing these utilities, you may result in a fundamentally simpler and cheaper offering that customers would welcome. On the contrary, functional oriented companies can infuse their products or services with more value by adding emotional appeal, and as a result stimulate new demand.

2.2.2.6 Look across time

All industries are subject to ever-evolving external trends that heavily influence business over time. Think of the rapid technological evolution that has taken place over the last decade and how it has influenced and shaped the electronic music industry. By looking at these trends with the right perspective, companies can open blue ocean opportunities.

Kim and Mauborgne state that 'most companies adapt incrementally and somewhat passively as events unfold' (Kim & Mauborgne, 2001). Companies tend to focus on trying to identify the projection of a trend, for example, how it will evolve, how it will be adopted, and whether it will become scalable (Kim & Mauborgne, 2005). Companies should be focusing more on how trends will affect what customers actually value. By looking across time and trying to identify what values a market might deliver tomorrow, companies can open up new paths to blue oceans. Take for example Apple, who observed a growing network of illegal music sharing in the late 90's through the likes of people using software such as Napster, Kazaa and LimeWire. The trend of music playback was clearly moving from physical products, such as CDs and tapes, to digital music. This trend was emphasised through the high demand of portable music players, such as Apple's hit selling product the iPod. Apple took advantage of these well-defined moving trends by launching the iTunes music store in 2003.

2.2.3 Exploit exist demand vs. Create and capture new demand

Traditional strategies tend to focus on competing within a given industry, and as a result exploit existing demands. Even if the intention is to go beyond red oceans, companies need to ensure that the blue ocean will offer an abundance of new demands. To achieve this, companies must question two conventional practices. Firstly, instead of focusing on customers, they need to look to noncustomers. Secondly, instead of aiming to accommodate the different needs of customers, companies should build on the commonalities of what these noncustomers value (Kim & Mauborgne, 2005). This can be achieved through the application of the "Three Tiers of Noncustomers" tool, which is covered in the next chapter.

Think of Toontrack before the release of their hit software EZdrummer. While companies working in the drum software industry were fighting for a greater share of existing customers, Toontrack developed a blue ocean by questioning why musicians were not using software drums. The key commonalities that emerged were the fact that many musicians did not have the technical proficiency to operate the software as they generally found the user interfaces intimidating and difficult to use (Hersi & Aleksandrowicz, 2010). This understanding gave Toontrack an insight into how to create new demands for its products. The answer was EZdrummer, a drum software with a strong focus on usability and speed of workflow. EZdrummer managed to convert noncustomers of the industry, such as musicians who had little experience with music software, into future customers. Not only this, but EZdrummer also pleased users who were already using software drums due to its high quality offerings.

2.2.4 **Make the value-cost trade-off vs. Break the value-cost trade-off**

Traditional competitive theories, such as those developed by Porter, emphasise the importance of choosing one strategy for a company to implement in order to maintain a high level of focus, instead of combining multiple strategies (Porter M. E., 1985). Porter's three main competitive strategies are as follows. A cost-leadership can be achieved by selling a high volume of products at the lowest price possible (or at least the lowest price-to-value ratio). To succeed with the cost-leadership strategy, a company must be able to operate at a lower cost than its rivals. The differentiation strategy's aim is to produce a unique product of high value to a broad range of customers. Customers will pay a premium price for having their specific needs served through the added value of the product. Another type of differentiation strategy is the focus strategy. A company is able to create an effective advantage by focusing on the needs of a specific, or niche, market. This is usually done through product innovation and/or brand marketing, rather than performing more efficiently (Porter M. E., 1980).

The BOS opposes Porter's theory by arguing that competitive advantage can be gained by simultaneously pursuing differentiation and low cost. The BOS refers to this as Value Innovation, the result of cutting costs while at the same time raising the buyer value (Figure 6).

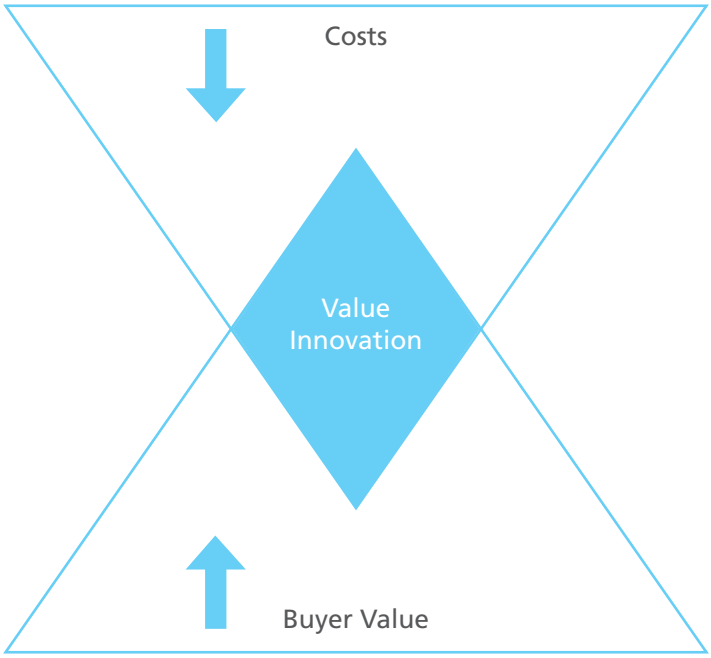


Figure 6 - Value Innovation (Kim & Mauborgne, 2005)

Cost savings are made by eliminating and reducing factors that do not offer added value for the end user. Differentiation can be achieved by raising factors beyond the industry's standards, or creating factors that have not been offered within the industry. Over time, costs can be reduced even further due to the high volume of sales that occur as a result of generated value (Kim & Mauborgne, 2005).

Arturia's approach to differentiation and low cost lacked definition. Their software synthesizers were not cheap enough to create buyer utility for the mass market, and they did not have enough added factors that would differentiate them from their competitors. Arturia counteracted by releasing various other software synthesizers, though unfortunately they too fell into a similar market segment as their previous products.

2.3 BOS Tools

2.3.1 The Strategy Canvas Model

The Strategy Canvas (Figure 7) is an analytical tool that is part of the Blue Ocean Strategy which allows companies to build a compelling strategy around a business concept. The horizontal axis depicts the factors that the industry competes on, and the vertical axis captures the level of offerings for each of these factors.

The strategy curve has two main purposes:

- Firstly, it provides an insight into the current state of the known market. This allows companies to understand where the competition is investing and what factors the competition currently competes on.
- Secondly, it drives you to differentiate yourself from competitors and reorient your focus from customers to non-customers.

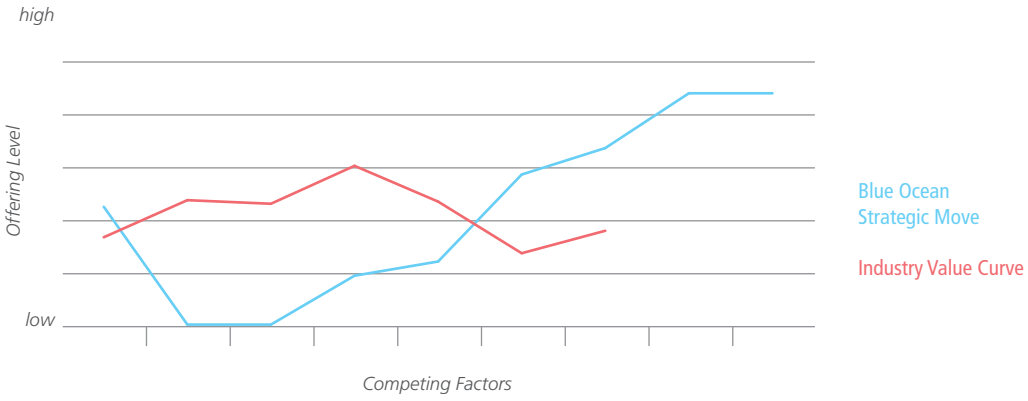


Figure 7 - The Strategy Canvas Model (Kim & Mauborgne, 2005)

By creating a Strategy Canvas, a company can determine how their own strategy compares to the industry they are competing in. When creating a new strategy in the EMI industry, a company can use technological innovations to provide value to its customers, therefore creating new factors to compete on.

2.3.2 Four Actions Framework (Eliminate-Reduce-Raise-Create Grid)

The Four Actions Framework (Figure 8) is a complimentary tool to the Strategy Canvas that drives companies to reconstruct the buyer values of a product, and as a result create a new value curve that breaks the differentiation/low cost trade-off. It forces companies to ask the following questions:

Which of the factors that the industry takes for granted should be eliminated? These are the factors that companies invest heavily into, but do not increase competitiveness and create little or no profit. The Framework also forces companies to eliminate factors that may have made more sense and provided more value in the past than they do today.

Which factors should be reduced well below the industry's standard? These factors refer to products and services that companies may have over-designed in order to beat the competition. Such factors bring too much baggage to the cost structure of a company, rendering any added value worthless.

Eliminate	Raise
Which factors can you eliminate that your industry has long competed on? • List those here...	Which factors should be raised well above the industry's standard? • List those here...
Reduce	**Create**
Which factors should be reduced well below the industry's standard? • List those here...	Which factors should be created that the industry has never offered? • List those here...

Figure 8 - ERRC Grid (Kim & Mauborgne, 2005)

Which factors should be raised well above the industry's standard? These are the factors that bring value to customers but until now have been ignored and compromised by the industry.

Which factors should be created that the industry has never offered? These are the factors that must be discovered to provide the buyer with new sources of value.

Hence, the first two questions address the cost-cutting side of the equation, whereas the second two questions address the differentiation side of the equation.

The Eliminate-Reduce-Raise-Create Grid ("ERRC") is a complimentary tool to the Four Actions Framework (Figure 9). It not only makes companies ask the four questions specified above, but drives them to act upon these questions. It is a very interactive and engaging tool that can easily be understood and used by managers at every level. The ERRC Grid is also a great tool for identifying companies that are only focusing on raising and creating value, and as a result increasing costs and over-engineering a product or service. This was the unfortunate case for Arturia with their Origin Synthesizer. Arturia was pushing towards a feature packed synthesizer, but the result turned out to be an expensive and over-engineered instrument that proved difficult to sell. Arturia acted on the assumption that leading-edge technology is relative to the utility you will be providing for buyers, this rarely being the case (Kim & Mauborgne, 2005).

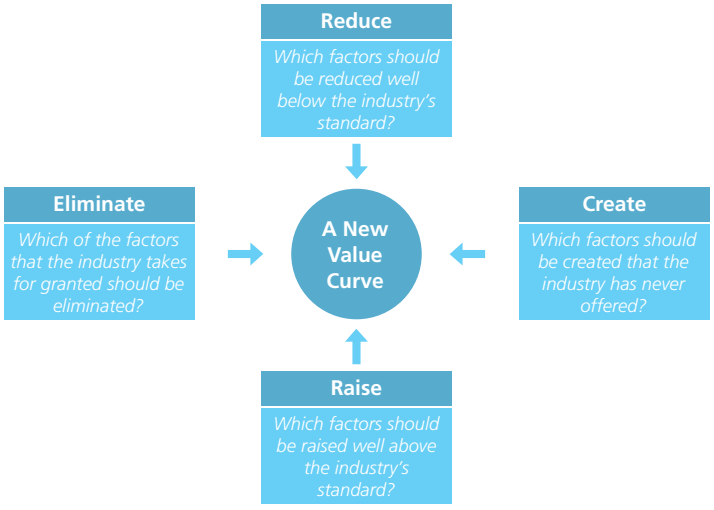


Figure 9 - 4 Actions Framework (Kim & Mauborgne, 2005)

2.3.3 Buyer Experience Cycle / Buyer Utility Map

The Buyer Utility Map (Figure 10) allows companies to identify the utility propositions of a product or service in relation to the product experience cycle of the user. The map vertically splits the user experience into six stages, from purchase to disposal of a product. Each stage of the user experience cycle is split into six utility levers. By locating a product on the buyer utility map, the utilities in which a product excels in can be identified and compared alongside the current industry in order to see the differentiation of focus between two companies.

In the EMI industry, one of the most important and commonly invested levers is customer productivity. This is understandable since an innovative instrument can increase productivity, therefore allowing users to get the desired results faster and in better ways. But all too often companies only focus on the same stage of the user experience cycle. In the case of the EMI industry, a lot of resources are pushed towards improving the use of a product, but often the other stages of the user experience cycle are overlooked.

	Purchase	Delivery	Use	Supplement	Maintenance	Disposal
Customer productivity			●			
Simplicity			●			
Convenience				●		
Risk						
Fun & image	●					
Environmental friendliness						

● Blue Ocean Offering ● Current Industry Focus

Figure 10 - Buyer Experience Cycle / Buyer Utility Map (Kim & Mauborgne, 2005)

2.3.4 Three Tiers of Noncustomers

Although every company has the potential to access a world of noncustomers, few companies have been able to identify who these noncustomers actually are, and how to convert them into future customers. There are three tiers of noncustomers that can be identified and transformed into potential customers, the difference being their relative distance from the relevant market (Figure 11).

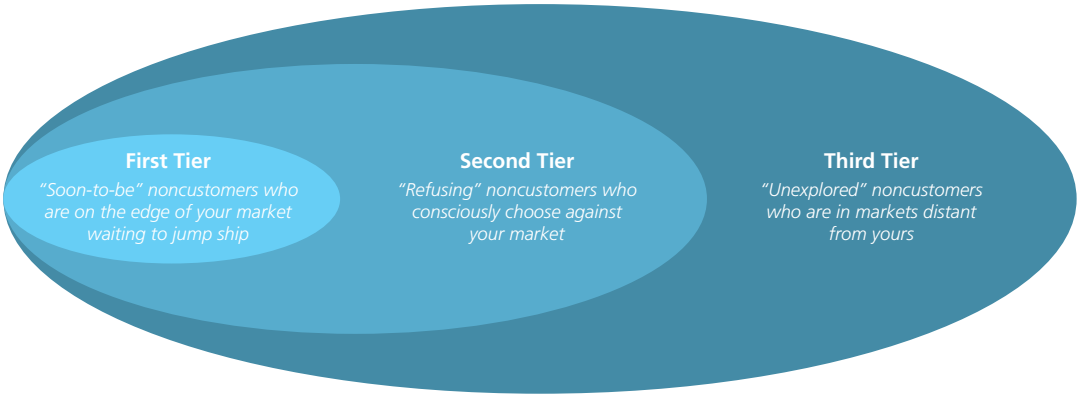


Figure 11 - Three Tiers of Noncustomers (Kim & Mauborgne, 2005)

The first tier of noncustomers is closest to your market purely out of necessity as they have no other choice. They are on the edge of the market, and given the opportunity, would jump ship to another product with better offerings. However, if given a product with better value offerings, they would not only stay, but also increase their frequency of purchases.

The second tier of noncustomers is people who are consciously choosing not to utilise your company's offerings either because they cannot afford them, or because they find them unacceptable. They are aware of your product or service, but would rather choose from another industry.

The third tier of noncustomers is in a market distant from yours. They have never considered or even heard of your company's offerings. They have also never been targeted by any companies within your industry because it has always been assumed that they belong to a different market altogether.

To get the largest catchment, companies need to identify the commonalities between the three tiers in order to convert noncustomers and draw them into their new market.

METHOD-OLOGY

This chapter applies the theoretical framework outlined in the previous chapter to Arturia's closest competitors, and the company's relative positioning in the market. It continues by formulating a strategy that Arturia can deploy in order to create a new product in an uncontested market space.

3.1 Research Approach

This chapter is based on the assumption that the reader has considerable knowledge of the analytical tools and frameworks of the BOS.

The quantitative data used for this research was taken from the MI SalesTrak first quarter report in 2010. During the development phase of Arturia's new synthesizer, this was the most up to date music industry market data available.

3.2 Selection of BOS Tools

During the initial development phase of the project, Arturia provided me with a convincing Product Requirements Document ("PRD") which covered everything from markets and customers, product evaluation, marketing, to sales. Arturia also had a very progressive method of implementing new product concepts into the existing company structure. Due to this, I felt that the most value could be provided by implementing the above-specified four Blue Ocean Strategy tools (3 Tiers of Non-customers, Strategy Canvas, ERRC Grid, and the Buyer Experience Cycle/Buyer Utility Map) into the product development process. These four tools have a very strong influence on shaping the direct outcome of a product or service. They are highly engaging and interactive, and can be used by any level of management and understood by employees.

3.3 Identifying the Closest Competitors

Arturia can be seen as competing in three different market segments within the EMI industry: Software Synthesizers, Hardware Synthesizers, and Hybrid Synthesizers. During the beginning of my work at Arturia, it was announced that there were plans to develop a new analogue hardware synthesizer. Little was known about this synthesizer, besides

the fact that it had to be compact, affordable, and have a 100% analogue signal path.

I decided to analyse the MiniBrute in relation to two different use cases. The first being customers who want to purchase a new portable and affordable hardware synthesizer, and secondly, customers who want to purchase a portable and affordable analogue synthesizer regardless of whether it is new or second hand. As expected, analysis of the MiniBrute was undertaken in relation to both the portable and affordable hardware synthesizer market, and the portable and affordable analogue synthesizer market.

It was necessary to analyse these markets separately due to that fact that customers are looking for very different factors when purchasing from either one of these markets. The two personas are as follows:

- Customers wanting to purchase analogue synthesizers commonly look in the second-hand synthesizer market because it is still very active, and analogue synthesizers are very much sought after these days. They will not only look on the mass and second-hand market, but will also tend to lean towards smaller boutique manufacturers and distributors. Analogue enthusiasts will weigh various factors, often technical features, in order to make the best purchase decision. However, resorting to a digital hardware synthesizer will very rarely be a valid compromise.
- Customers wanting to purchase a hardware synthesizer are usually more lenient. Their purchase decisions are most commonly driven by marketing, hype, and more apparent offerings. They generally purchase from large commercial music stores, such as Guitar Center or Thomann.

Furthermore, analysing the MiniBrute against these two markets resulted in a strategy that would prove to be strong and differentiate itself from both the portable and affordable hardware synthesizer market, and the portable and affordable analogue synthesizer market.

3.4 Selection of Samples

3.4.1 MI SalesTrak

Rapid shifts in technology and trends in the EMI industry make it more important than ever to be aware of market activity details. Companies are able to follow their own product sales, but what is more important is the ability to bring these figures into perspective and view them relatively to the competition (Johnson & Hirschberg, 2011).

Formed in 2002, MI SalesTrak is a retail sales reporting service for the musical products industry. Companies can use MI SalesTrak data for a variety of purposes. Firstly, it can be used to capture a definitive view of where a company is positioned in the market, with a focus anywhere from a general product category to a specific product sub-category. Secondly, it can be used to determine how many of the products that have been delivered to distributors have actually sold, therefore preventing

products from backing up at the retailers. Finally, it can be used as a tool to communicate and visualise the success of a product to a third party (Johnson & Hirschberg, 2011).

MI SalesTrak is able to provide this data by collecting and analysing retail sales data. Due to retail data limitations, MI SalesTrak is only able to provide an accurate overview of the US market.

3.4.2 **Samples**

Empirical data collected via MI SalesTrak shows the top 20 selling hardware synthesizers in the first quarter of 2010 (Figure 12). A surprising aspect is the number of synthesizers above US$1,000 that can be found on the list. Partly to blame is the way that MI SalesTrak distinguishes between different product categories, often placing products from a neighbouring category, such as keyboards and workstations, into the synthesizer category.

#	Company	Product	Dollar Sales	Unit Sales	Average Retail Price
1	Yamaha	S90ES	$2,535,856	1,348	$1,881
2	Korg	microKorg	$1,841,318	4,807	$383
3	Korg	X50	$1,184,158	1,853	$639
4	Yamaha	S08	$739,672	928	$797
5	Korg	R3	$723,065	1,212	$597
6	Roland	Juno-D	$711,784	1,517	$469
7	Clavia	Nord Stage 88	$492,468	169	$2,914
8	Clavia	Nord Electro 2 61	$437,085	348	$1,256
9	Dave Smith	Prophet '08	$333,916	184	$1,815
10	Moog	Little Phatty Stage	$294,932	262	$1,126
11	Alesis	Micron	$280,673	745	$677
12	Roland	SH201	$261,587	480	$545
13	Roland	V-Synth GT	$252,611	102	$2,477
14	Korg	microX	$240,427	414	$581
15	Kurzweil	PC3X	$185,133	74	$2,502
16	Korg	Radias	$171,991	162	$1,062
17	Access	Virus TI Polar	$163,725	69	$2,373
18	Access	Virus TI Keyboard	$163,703	71	$2,306
19	Clavia	Nord Lead 2X	$123,869	137	$904
20	Novation	XioSynth 25	$105,296	372	$283
				Average Price	**$1,279.35**

Figure 12 - MI SalesTrak Q1 2010 top 20 selling hardware synthesizers

3.4.3 Portable Hardware Synthesizers under US$1,000

The top grossing Hardware Synthesizers which were both affordable (under US$1,000) and had a compact form factor were extracted from the MI SalesTrak data. These were:

1. Korg MicroKorg
2. Alesis Micron
3. Novation XioSynth 25

3.4.4 Portable Analogue Synthesizers under US$1,000

During the first quarter of 2010, the most competitive compact analogue synthesizers below US$1,000 were the Dave Smith Instruments (DSI) Mopho Desktop, and the Doepfer Dark Energy. Popular second-hand analogue synthesizers, such as the Roland SH-101, can typically be found on online marketplaces such as eBay selling for a street price of US$750-1200. As a result, the three most popular solutions for a person wanting to purchase a portable analogue synthesizer under US$1,000 was:

1. DSI Mopho Desktop
2. Doepfer Dark Energy
3. Second-Hand Vintage Analogue Synthesizers

3.5 Strategic Profiling of Selected Samples

3.5.1 Portable Hardware Synthesizers under $1,000

3.5.1.1 Korg Microkorg $399

Figure 13 - Korg MicroKorg

The Korg Microkorg (Figure 13) has been the best-selling synthesizer since it was released in 2002 (Nagel, 2009). Its compact form factor, wooden side panels, and low cost make it a great choice as a first synthesizer, or for existing bands to add to their palette of sounds. Some serious performers may find the mini keyboard a weakness, but overall it provides to a large demographic of synthesizer users.

STRENGTHS	WEAKNESS
• Solid build • Battery-powered • Light weight • Appealing vintage design • Versatility • Easy editing of the main parameters • High quality 8-band vocoder • Simple patch editing software • Good MIDI controller capabilities	• Small keys (37) • Complicated patch editor • Mono-timbral • Poor user interface

3.5.1.2 Alesis Micron $399

The Alesis Micron (Figure 14) was released in 2005 in an attempt to leverage from the Microkorg's success. The price, form factor, and many of the features that can be found in the Microkorg are also evident in the Micron. The Micron is an eight-voice, three-octave virtual-analogue synthesizer. The 37-key instrument is compact, portable, and has a unique eye-catching design. Due to its multi-timbral sound engine, the potential sound palette is suitable for a wide range of genres and music-making contexts.

Figure 14 - Alesis Micron

STRENGTHS	WEAKNESS
• Versatility • Full-sized keys (37) • Easy editing of the main parameters • Multi-timbral • High quality filters	• Small keys (37) • Complicated patch editor • Mono-timbral • Poor user interface

3.5.1.3 Novation XioSynth 25 $299

The Novation XioSynth 25 (Figure 15) is a surprisingly flexible synthesizer, capable of warm textural sounds, all at a very affordable price. Although the feature set rates well, there have been several compromises made along the way such as the interface, which is small and cramped and could be confusing for new users. Many of the knobs and buttons have more than one function, and some features are only accessible after digging through the menu which is displayed on a tiny LCD screen. Some of the features also do not bring as much value as they potentially could, such as having two external audio inputs which cannot be processed through the very capable filter. While the XioSynth 25 might not be for everyone, it still offers a lot of value given the price.

Figure 15 - Novation XioSynth 25

STRENGTHS	WEAKNESS
• Low cost • Full-sized keys (25) • Many features • Light weight • Compact • X/Y touchpad	• Unsatisfactory sound • Poor build • Cheap looking • Cluttered interface

3.5.2 **Portable Analogue Synthesizers under $1,000**

3.5.2.1 DSI Mopho $499

The DSI Mopho (Figure 16) is a compact and affordable two oscillator monophonic analogue synthesizer. It is perfect for learning the basics of real analogue synthesis without having to spend a fortune. Unfortunately it lacks a hardware keyboard and therefore must be controlled by a host or an external MIDI controller. The user interface also suffers by being cluttered, which makes the learning curve rather steep. However, it is supplied with a software editor which allows control over every parameter via computer. The DSI Mopho builds upon the famous Dave Smith Instruments legacy, which makes it very appealing to DSI advocates.

Figure 16 - DSI Mopho

STRENGTHS	WEAKNESS
• Analogue • 2 Oscillators • Great sound • The 'Dave Smith' name • Many features • Compact	• Unappealing design • Poor user interface • No keyboard

3.5.2.2 Deopfer Dark Energy $599

After spending the better part of the last decade producing numerous Eurorack analogue synthesizer modules for the A-100 series, Doepfer turned towards the self-contained synthesizer market, by producing the Dark Energy (Figure 17). The result is a distinctive looking black box with wooden side panels and numerous switches and knobs which speak the language of quality. The Dark Energy is a monophonic analogue synthesizer with one oscillator, one filter, and two Low Frequency Oscillators ("LFO"). This may sound fairly basic, but with the cluster of patch connections available, users are encouraged to discover the world of modular possibilities. Its minimal design and odd box-like form may make it less approachable to some newcomers, although having a compact form factor definitely has advantages. With a good eye for price and a pallet of unique sounds, Doepfer has produced a synthesizer that could earn a niche in many studios and live setups.

Figure 17 - Doepfer Dark Energy

STRENGTHS	WEAKNESS
• Analogue • Aggressive sound • Compact • USB and CV connectivity • Vintage design	• Control panel is tightly packed • No keyboard

3.5.2.3 Second-Hand Vintage Analogue Synthesizer

Many users are heavily drawn towards the second-hand analogue synthesizer market for various reasons. Such synthesizers typically have very appealing vintage designs, wooden side panels, one control or switch for every parameter and, most importantly, are capable of producing those warm analogue sounds of last century. However, analogue synthesizers are not without their pitfalls. They are becoming increasingly expensive to purchase on the second-hand market due to their high demand. Often analogue synthesizers will require repair or maintenance due to the aging of components. Not only can these problems be costly, but often the required components are not produced anymore, entailing the buyer to resort to custom-made components which may even alter the characteristics of the sound.

Figure 18 - Roland SH-101

STRENGTHS	WEAKNESS
• Unique and novel • Full-sized keys • Solid build quality • Vintage look	• Vintage valued high price • Often requires repair or maintenance • Oscillators going out of tune • Not very portable

3.6 Application of BOS Tools and Frameworks to the Closest Competitors

The next development phase in building a successful strategy for the MiniBrute was the application of the BOS tools and frameworks to the closest competitors. This was done by questioning the team of colleagues working on the MiniBrute. Firstly, we began by scrutinizing all the factors that the current industries competed on, and applying a value to each of these factors. The results were two strategy curves, one for the portable hardware synthesizer market, and the other for the portable analogue synthesizer market. Secondly, we evaluated the utilities that buyers were receiving from the competitors' products, as well as the various stages of experiences they were exposed to. Lastly, we used the 3 Tiers of Noncustomers to identify industry noncustomers that could be converted into customers.

3.6.1 Portable Hardware Synthesizers under $1,000

3.6.1.1 Strategy Canvas of Current Competitors

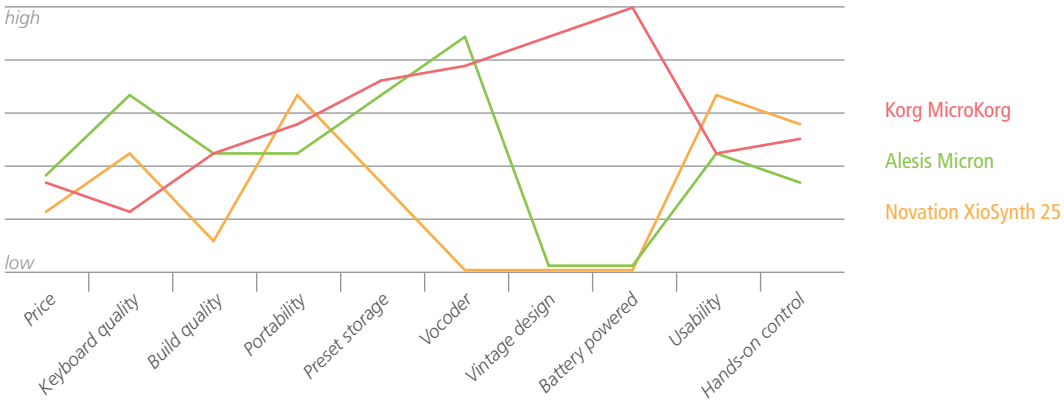


Figure 19 - Portable Hardware Synthesizers Strategy Canvas

Findings from the Portable Hardware Synthesizers Strategy Canvas (Figure 19) reveal that the current portable hardware synthesizer market is primarily relying on the same factors to compete on. All three synthesizers have a below-average keyboard and build quality. The portability is also very similar between the three synthesizers due to the comparable form factor. The Korg MicroKorg clearly differentiates itself from its competitors through its design. The combination of the wooden side panels, vintage-like control knobs and the awkward goose neck vocoder make the Korg MicroKorg a visual standout in comparison to its competitors. The Korg MicroKorg certainly brings the highest offerings to end users in relation to the price, hence its impressive sales figures. Besides this clear differentiation of the Korg MicroKorg, there is definitely a lack of focus in the curves.

3.6.1.2 Buyer Experience Cycle / Buyer Utility Map of Current Competitors

	Purchase	Delivery	Use	Supplement	Maintenance	Disposal
Customer productivity			● ● ●			
Simplicity						
Convenience						
Risk						
Fun & image	● ●					
Environmental friendliness						

● Korg MicroKorg ● Alesis Micron ● Novation XioSynth 25

Figure 20 - Portable Hardware Synthesizers BEC/BUM map

Findings from the Portable Hardware Synthesizers BEC/BUM map (Figure 20) reveal that current hardware synthesizers are heavily focussed on customer productivity from use of the product. Both the Alesis Micron and the Korg MicroKorg pack an impressive set of features that allow users to synthesize sounds in many different ways. Both instruments are also offered in different colour variations, which along with their vibrant designs make for a fun purchase experience. None of the three synthesizers offer any superior utility through the delivery, supplement, maintenance and disposal stages of the cycle. Most of the utilities in these stages have long ago been adopted by the industry and turned into standard features. Hence, they have been taken for granted by many of today's companies without further questioning.

3.6.1.3 3 Tiers of Noncustomers

There are three tiers of noncustomers that can be transformed into customers:

First Tier: "Soon-to-be" noncustomers who are on the edge of your market, waiting to jump ship:

- Customers wanting a portable hardware synthesizer under $1000

Second Tier: "Refusing" noncustomers who consciously choose against your market:

- Owners of analogue synthesizers
- Owners of software synthesizers
- Keyboard and organ players
- Owners of hardware sequencers
- Owners of samplers and groove boxes
- Guitarists using effect pedals
- DJs

Third Tier: "Unexplored" noncustomers who are in distant markets:

- Singers
- Musicians playing acoustic instruments

3.6.2 Portable Analogue Synthesizers under $1,000

3.6.2.1 Strategy Canvas of Current Competitors

Findings from the Portable Analogue Synthesizers Strategy Canvas (Figure 21) reveal that there are a variety of different value offerings from the current competitors in the analogue synthesizer market. What is remarkable when comparing the DSI Mopho directly with the Doepfer Dark Energy (Figure 22) is the extent to which their value curves differentiate from one another. There is almost no single factor that these two products compete on, hence, given no other competitors, they could fairly comfortably co-exist in the current market. However, what both products clearly lack is an integrated keyboard. By refusing to offer an all-in-one solution, DSI and Doepfer have decreased their chances at targeting a large segment of noncustomers, these primarily being synthesizer newcomers and musicians who need a complete solution such as singers or guitarists in a band. However, the lack of a keyboard does have its advantages, such as the possibility of providing a more compact and portable form factor.

3.6.2.2 Buyer Experience Cycle / Buyer Utility Map of Current Competitors

Findings from the Portable Analogue Synthesizer BEC/BUM Map (figure ##) communicate a very distinct differentiation of the user experience cycle between new and second-hand analogue synthesizers. There are considerably more risks involved when purchasing a second-hand analogue synthesizer. The oscillators are often out of tune, or certain components have aged, requiring an ordeal of ongoing maintenance. The sound produced by vintage synthesizers can also be affected by changes in room temperature and humidity to such degrees that many musicians refrain from using their vintage synthesizers outside of a stu-

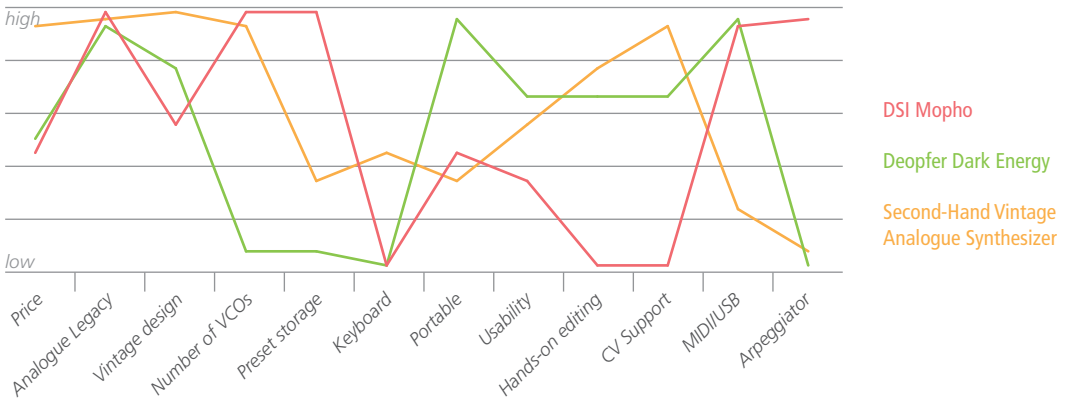


Figure 21 - Portable Analogue Synthesizers Strategy Canvas

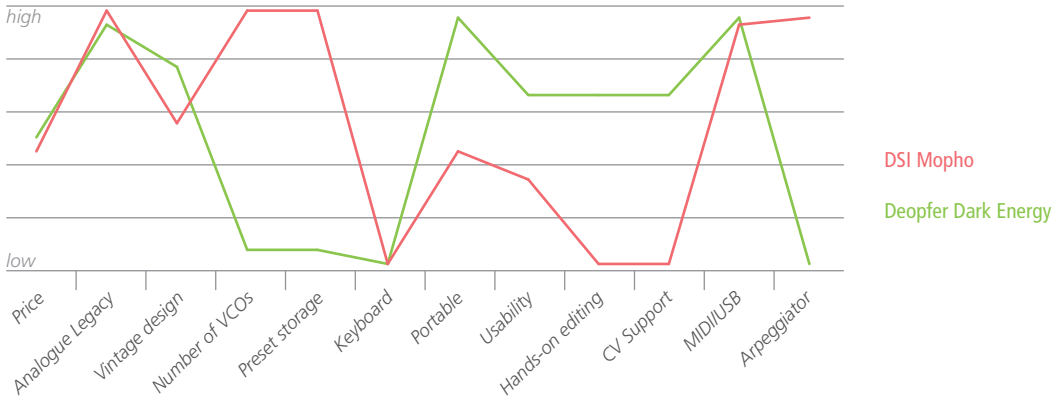


Figure 22 - DSI Mopho vs Doepfer Dark Energy Strategy Canvas

	Purchase	Delivery	Use	Supplement	Maintenance	Disposal
Customer productivity			● ●			
Simplicity			●			
Convenience						
Risk	●		●		●	
Fun & image			● ●			
Environmental friendliness	●					

● DSI Mopho ● Doepfer Dark Energy ● Second-Hand Synthesizers

Figure 23 - Portable Analogue Synthesizer BEC/BUM map

dio. Although both the DSI Mopho and the Doepfer Dark Energy heavily focus on the experience of using their products, there is definitely a clear distinction between the two. With its eye-catching yellow body and non-uniform user interface (with buttons such as those labelled "Push Me"), the Mopho comes across as being much more fun to use and more approachable for newcomers.

3.6.2.3 3 Tiers of Noncustomers

There are three tiers of noncustomers that can be transformed into customers:

First Tier: "Soon-to-be" noncustomers who are on the edge of your market, waiting to jump ship:

- Customers wanting a portable analogue synthesizer under $1000

Second Tier: "Refusing" non-customers who consciously choose against your market:

- Owners of digital hardware synthesizers
- Owners of modular synthesizers
- Owners of software synthesizers
- Circuit Benders and DIY guys
- DJs

Third Tier: "Unexplored" noncustomers who are in markets distant from yours:

- Keyboard players
- Singers
- Guitarists

OUTCOME AND FINDINGS

This chapter begins by documenting the product development process of the Arturia MiniBrute through utilising the BOS formulated in the previous chapter. It offers critical feedback of the initiation, development, and execution of the strategy.

4.1 Identifying Principal Factors

After identifying the market positioning and product strategy of the MiniBrute's closest competitors and the potential noncustomers of both these industries, it was time to build our own strategy curve. This involved working iteratively back and forwards between the ERRC Grid and the Strategy Canvas in order to build a compelling curve. The principal factors that emerged through this process are as follows:

4.1.1 100% Analogue

Today, too many musicians do not have the opportunity to own an analogue synthesizer due do the inflation of prices on the second-hand market. Analogue synthesizers of yester-year are highly sought after on the second-hand market for their warmth, fatness, slight instability, and their unmistakable sonic character. Digital synthesizers, for their part, offer more possibilities but sometimes tend to sound sterile and loose musicians in endless menus and unexciting sound conception processes. From the beginning of the project we knew this factor could not be compromised as it would be the primary differentiator between the MiniBrute and the Alesis Micron and Korg MicroKorg. To please real analogue enthusiasts, we urged to not only have an analogue oscillator, but to have the complete audio path 100% analogue.

4.1.2 Usability

With the aim of reaching out to the 3 tiers of non-customers, we knew it was important to design a very intuitive and user-friendly interface. This was achieved through the following factors:

4.1.2.1 Hands-On Interaction

In order to have real hands-on interaction, we strived to have only one function for each potentiometer, encoder, switch and slider. This would

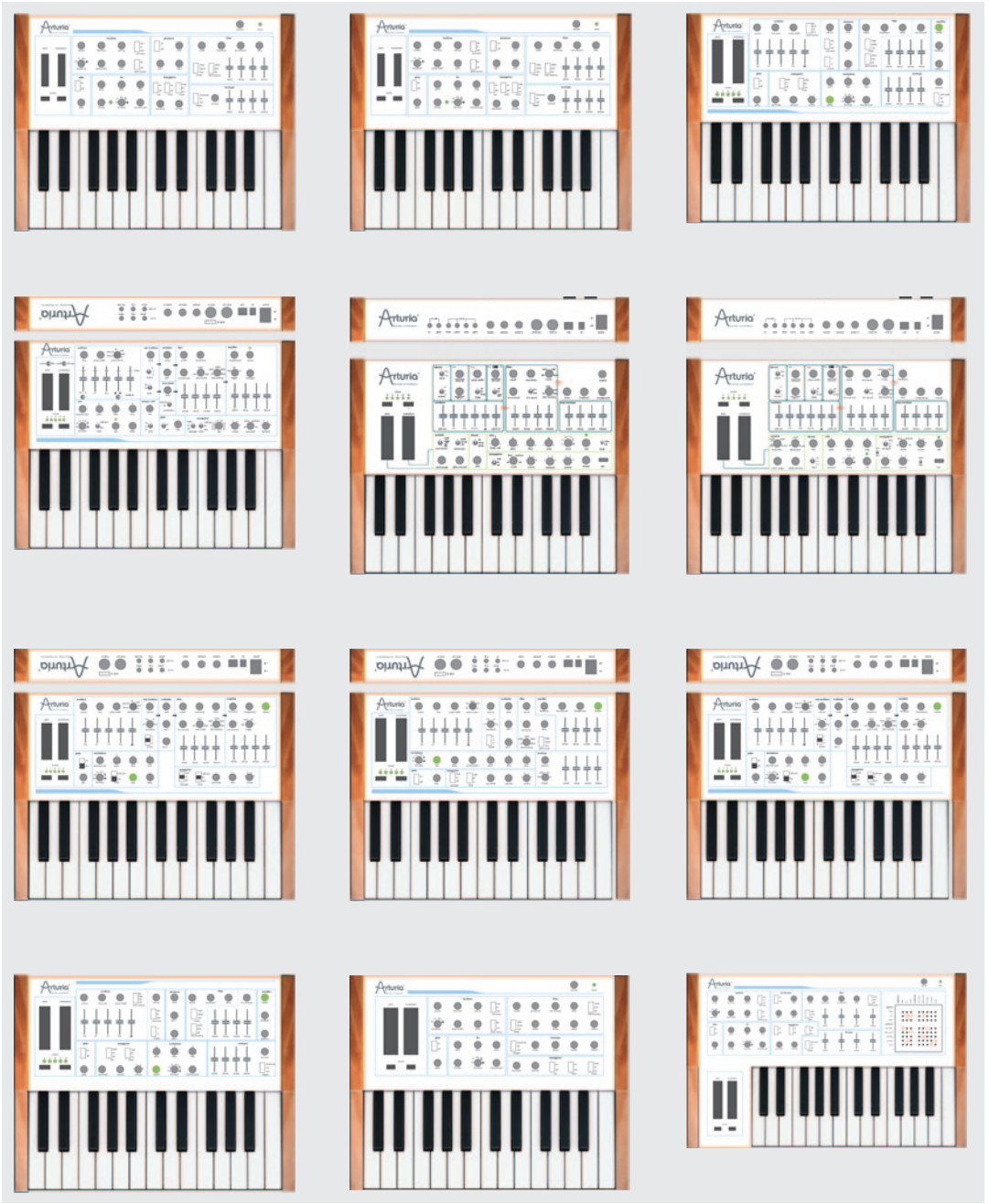


Figure 24 - A selection of the various MiniBrute UI prototypes developed

prevent users from having to dive through complex menu structures, and not limit them from being able to operate the synthesizer at a fast pace, for instance during live performances.

4.1.2.2 Comprehensive Layout

The user interface had to be laid out in a very comprehensive manner. This was achieved by arranging the components from left to right in relation to the audio signal path, and grouping parameters which correlated with one another. Many prototypes were developed and iterated (Figure 24) depending on the feedback received from specialist and beginner users at Arturia.

4.1.2.3 Visual Representation of Parameters

Sliders would be used very selectively in order to give more hands-on control where needed, or to be used as a visual representation of values. In our case, we used sliders for the waveform mixer as it would allow users to change the value of several sliders by using only one hand. In the case of the two envelopes, we decided to use sliders because they would result in a direct visual representation of the envelope curve (Figure 25).

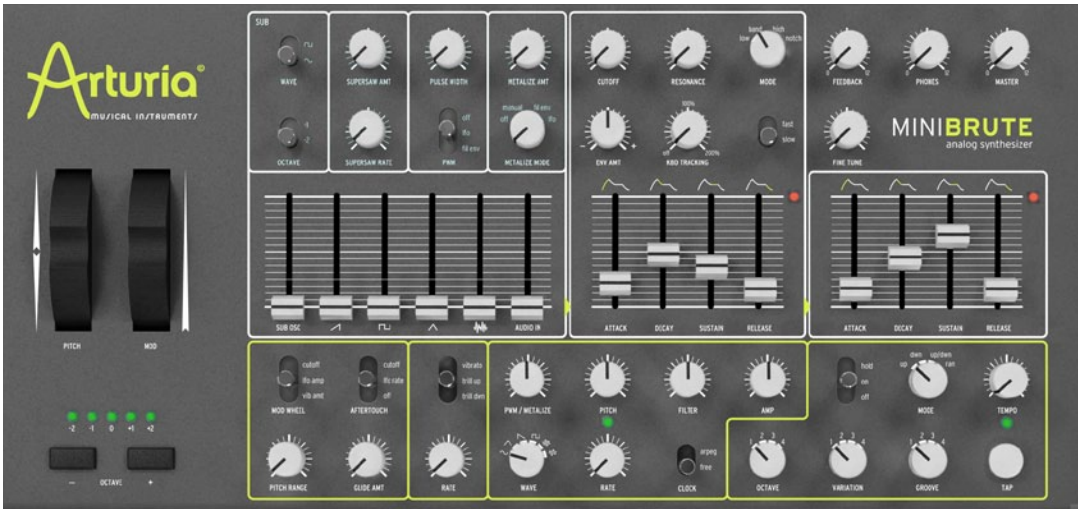


Figure 25 - MiniBrute UI in a late development phase

4.1.3 Effects

We decided to restrict the number of Voltage Controlled Oscillators ("VCO") to only one. Having two or more VCOs would have resulted in heavily increased costs due to additional components, and would have required having to maintain the oscillators to keep them in tune with each other. To counteract this limitation, we decided to add unique wave-shaping effects to the MiniBrute as these would be less expensive than adding a second oscillator, and would offer a multitude of sonic possibilities. After a prolonged research and testing phase, we decided to use the Ultrasaw (Saw Animator), Pulse Width Modulation (PWM), and the Metalizer (Wavefolder). The purpose of using a different name was to represent an effect according to its sound characteristics rather than its technical function, therefore making it easier to understand for beginners.

4.1.3.1 Ultrasaw

The Ultrasaw (Figure 26) provides shimmering sawtooth waveforms that considerably enrich the original tone. It builds two phase-shifted copies of the original sawtooth signal. These copies have independent and ever-evolving phase shifts with respect to each other, and are eventually mixed with the original sawtooth signal. This results in a lively, rich, and bright ensemble effect the character of which depends on the modulation rates of the phase-shifted copies. This effect had previously not been used in an analogue keyboard synthesizer.

4.1.3.2 Pulse Width Modulation

Pulse width modulation is a well-known effect for the square wave which provides a sound effect similar to a chorus, or slightly detuned oscillators playing simultaneously.

4.1.3.3 Metalizer

The Metalizer (Figure 27) takes the basic triangular waveform and "warps/folds" it to create very complex jagged waveforms that are rich in high harmonics. This results in "metallic" pitched sounds that are ideal for harpsichord and clavinet type tones. Dynamic modulation of the warp/folding parameters opens up a realm of "metalized" sounds that will cut nicely through a mix.

4.1.4 Sonic Possibilities

By implementing the above effects, we had to limit which control parameters would actually be available from the interface. For example, the wavefolder with its three parameters (shape, range, and control level) had to be reduced so it would function with only one control knob. This process involved scrutinizing every control parameter of each effect, and identifying which parameters would allow for the broadest

Figure 26 - Ultrasaw (Sawtooth Animator)

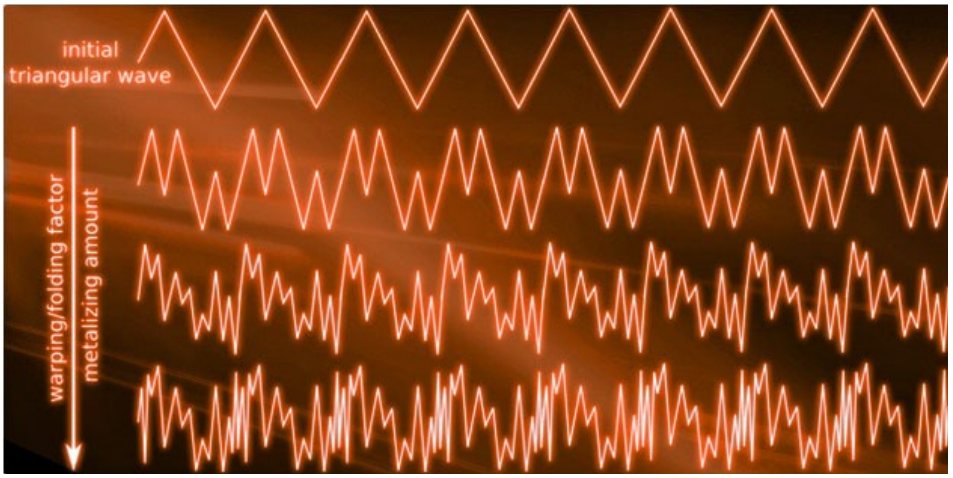


Figure 27 - Metalizer (Wave Folder)

sonic possibilities. In some cases the solution was to control both the effect and the dry/wet amount by using one control knob.

4.1.5 **Arpeggiator**

In order to appeal to noncustomers such as DJs, singers, guitarists and other musicians, we set out to develop an arpeggiator that would allow users to create complex melodic patterns without being a skilled keyboardist (Figure 28). Another reason for extending the feature set of the arpeggiator was to allow users to create a wide-ranging soundscape through the use of only 25 keys. The outcome was a full set of features covering octave range, play mode, tap tempo, step size, swing, and groove control. In addition, we developed the arpeggiator to be synchronisable with the MIDI input and the LFO. This would allow the MiniBrute to stay in sync with other synthesizers, drum machines, computers, and other MIDI capable musical equipment. A tap tempo button was also added to accommodate the possibility of synchronising with a live drummer.

Figure 28 - MiniBrute Arpeggiator

4.1.6 **Form factor**

To allow the MiniBrute to compete in the portable synthesizer market, we knew we had to keep the form factor small while at the same time differentiating ourselves from our nearest competitors. Various prototypes were developed in order to evaluate the form factor of the MiniBrute (Figure 29). Instead of going for a long and narrow form factor like the DSI Mopho, the Novation XioSynth 25, and most other hardware synthesizers and keyboards on the market today, we decided to go for a completely different form factor that would more closely resemble the likes of vintage analogue synthesizers such as the Korg MS-20. Having a more square-like form factor would also give the MiniBrute the same form factor as laptops and small suit cases, allowing it to be small enough to be taken as carry-on luggage on a flight.

4.1.7 **Quality Feel**

While developing the MiniBrute, we wanted to identify what positive factors would directly impact on the perceived quality of a hardware synthesizer, and how these factors could be provided without dramatically increasing the costs.

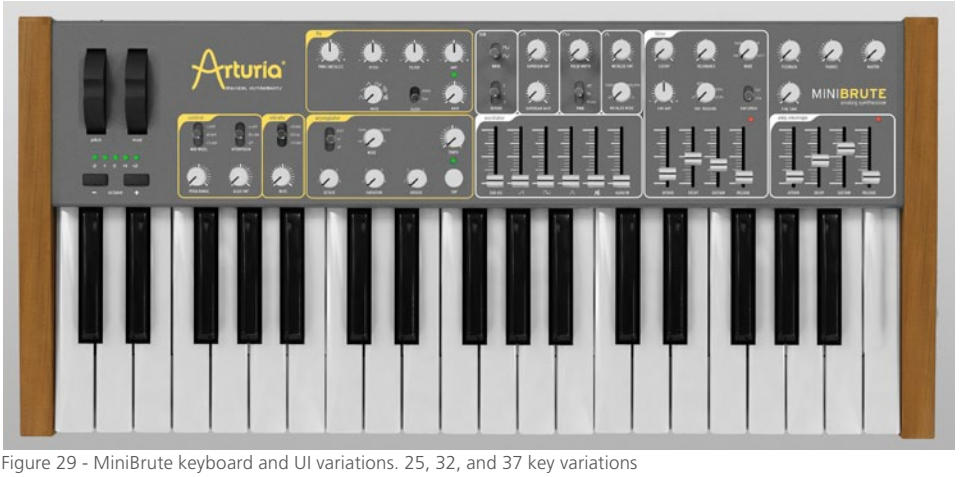


Figure 29 - MiniBrute keyboard and UI variations. 25, 32, and 37 key variations

4.1.7.1 Casing

The casing of the MiniBrute had to be sturdy and rugged to be able to resist heavy transport and live use. Initially we planned on adapting the AFE casing for the MiniBrute (Figure 30), but due to the fact that we wanted to differentiate the MiniBrute from Arturia's current product platform the idea was dropped soon after. However, we did decided to approach the manufacturing process of the MiniBrute in a similar way to the AFE. By extruding aluminium (Figure 31), we were able to achieve a solid casing at a fairly low price. A major benefit of using extruded aluminium was the tooling costs, which are extremely low compared to the tooling costs of injection mouldings.

4.1.7.2 Switches, Knobs and Sliders

A large part of the overall perceived quality stems from the quality of the tangible elements that users interact with. We decided to use toggle switches and sliders from ALPS, a leading manufacturer of electromechanical components. The components which conducted the audio signal had to be of especially high quality in order to prevent static noise from entering the signal path. Another important factor was deciding between surface-mount and through-hole components. Through-hole potentiometers are much more durable since they can be attached directly to the casing. The downside is the increased cost due to component prices and the longer assembly process. The disassembly process time also needs to be taken into consideration for the purpose of repairing or maintaining the product. We decided to use surface-mount components, but in order to improve the quality of the tactile feedback we made sure to keep the tolerance between the potentiometer shaft and casing, and the potentiometer cap and casing, to a very minimum. This eliminated the sideways wobble that often occurs on cheap consumer electronics.

4.1.7.3 Side Panel

The side panels of a hardware synthesizer have a strong impact on the overall design and aesthetics of the product. Several companies, such as Korg and Doepfer, have opted to use wooden side panels in order to resemble the likes of vintage synthesizers. Arturia's AFE keyboards were shipped with faux wood side panels. Although several classic synthesizers, such as the Roland JUNO-6, were also shipped with faux wood side panels, the AFE's side panels were not well received. Our reason for not using wooden side panels was because we wanted to differentiate the design from the MiniBrute's closest competitors. We wanted to give it a modern edge that would communicate the idea that the MiniBrute is a 21st century synthesizer, not a vintage.

Figure 30 - An early concept based on the Analogue Factory Experience housing

Figure 31 - Analog Factory Experience Casing

4.1.8 Colour Variations

We initially planned on having the MiniBrute be available in various colours in order to target the individual sub categories of customers (Figure 33). By comparing the MiniBrute's value curve with its competitors we were able to identify that it would be competing on the same factor as the Micron and the Microkorg, since they are both already available in various colours. As a result, the plan of having various colours was dropped. Offering a product in various colours would also mean raised costs, and greater difficulties in maintaining stocks for both Arturia and its distributors.

4.1.9 Preset Sheets

One factor that many synthesizer companies have blindly competed on is the function for storing the settings for a sound in a preset menu. We decided to eliminate this factor for the following reasons.

4.1.9.1 Price

The components required for building a preset storage are expensive. It is not only about the extra components that are needed for the storage bank itself, but also the many existing components such as all the rotary and linear potentiometers that would need to be changed. Unless you are heavily investing into a preset manager, the end result will at best

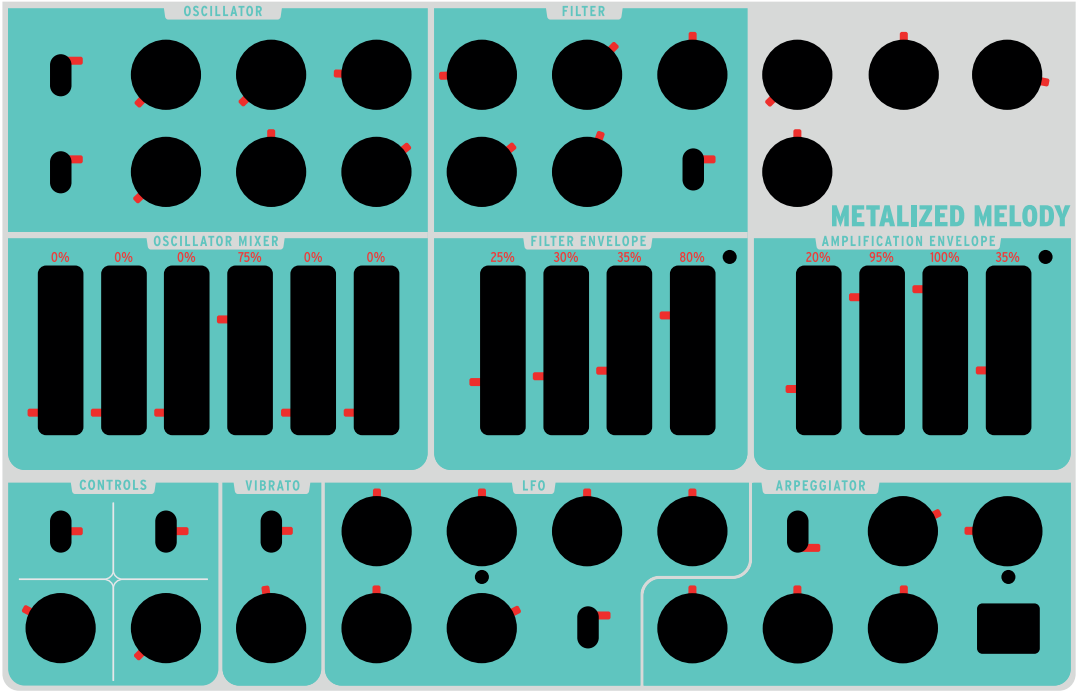


Figure 32 - A MiniBrute Preset Sheets

Figure 33 - Early colour variations

most likely be a small LCD screen which will require complex navigation and a good understanding of preset management to use correctly.

4.1.9.2 Supplementary Features

By eliminating the preset storage, we are able to provide supplementary offerings such as preset sheets/templates (Figure 32). By placing the laminated preset sheets over the controls, the user is able to save the sound by placing marks on the sheet beside each control. This would also allow for additional services or products to be developed, for example an iPhone app that would allow users to take a snapshot of chosen settings and share them with a greater community.

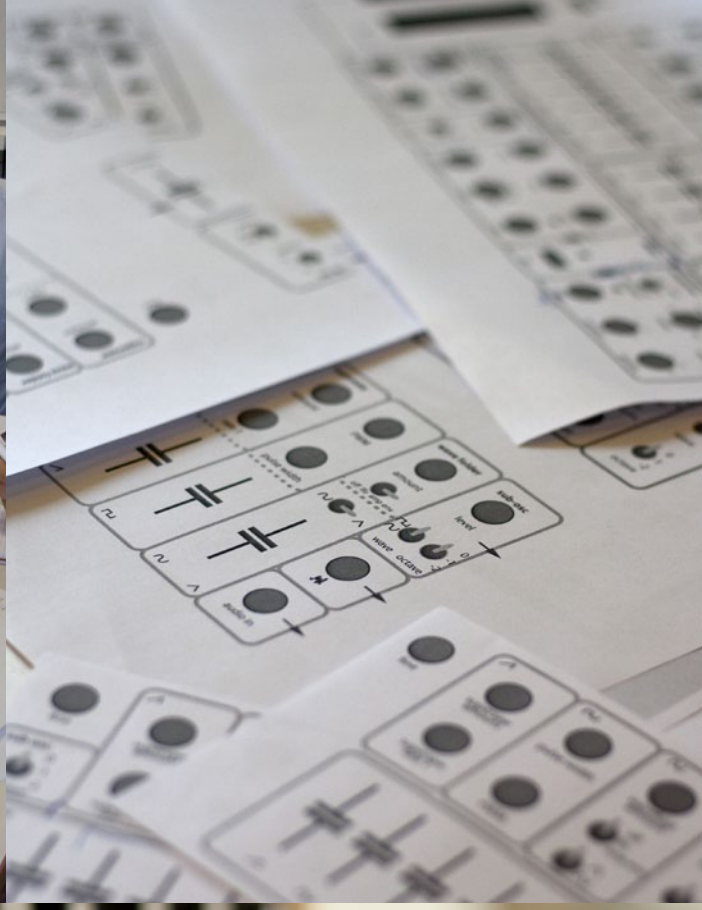
4.1.9.3 Learning Sound Synthesis

We believe that preset storage may in fact be hindering users from learning about sound synthesis. After purchasing a synthesizer, the first thing users commonly do is toggle through a large catalogue of factory-made presets. Many users will continue to surf the preset banks and twiddle knobs aimlessly, rather than getting to know their synthesizer better. With an intuitive interface and a small learning curve, the Mini-Brute aims to be the ideal synthesizer to teach new users about the basics of subtractive synthesis.

4.1.10 **All-in-one package**

The initial plan was to eliminate the keyboard and offer the synthesizer as a desktop module (Figure 34). Seeing as this would hinder our possibilities to target non-customers such as guitarists, singers or DJs who require an all-in-one solution, the idea was dropped soon after and replaced by a 25-note full-size keyboard with aftertouch.

Figure 34 - Arturia MiniBrute desktop module concept



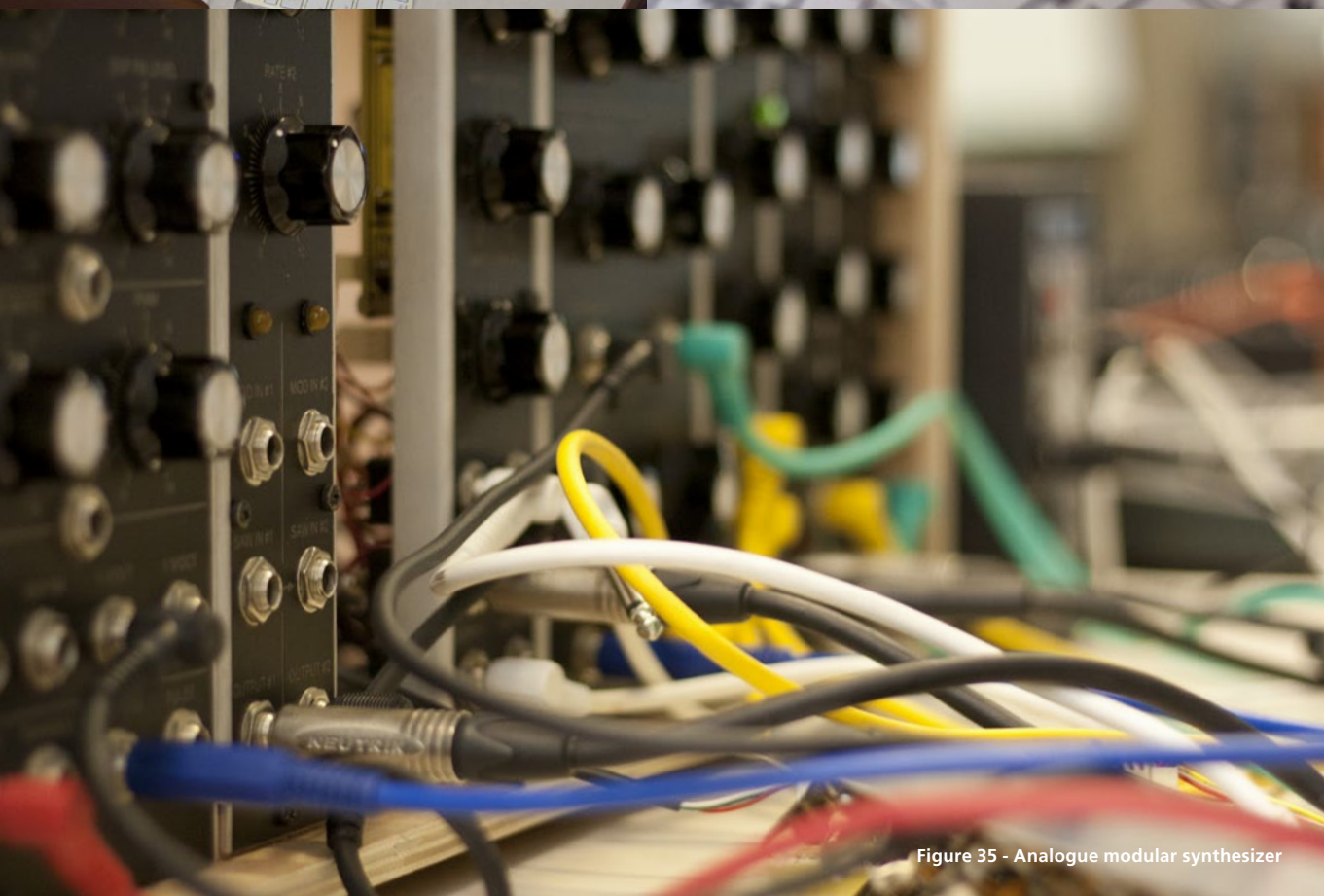


Figure 35 - Analogue modular synthesizer

Figure 36 - MiniBrute back panel

4.1.11 **Connectivity**

Alongside regular connectivity options such as MIDI and USB, we pushed the idea of implementing a plethora of Control Voltage ("CV") input and output connections (Figure 36). This allows the possibility of connecting the MiniBrute to other analogue synthesizers. By using the CV output, the user can control another analogue synthesizer either through the MiniBrute or the host/sequencer that the MiniBrute is plugged into. As MIDI to CV converters are fairly expensive, this feature alone would make the MiniBrute a viable investment.

4.1.12 **Boutique filter**

When developing the filter, we questioned how we could get the maximum range of sonic possibilities using the fewest functions, and what would be the best way of implementing each of these functions. We had to limit ourselves to one filter, and it was clear that a multi-mode designed filter would allow for the widest range of sonic possibilities. We decided to implement an existing filter due to the high development resources required to develop a custom filter. Existing filters can be categorised into two groups; firstly the 24dB per octave filters commonly used by American and Japanese manufacturers, and secondly the 12dB per octave filters designed by Russian, English, and other less-known manufacturers. The 12dB per octave filters are less stable, resulting in a more aggressive and unpredictable sound. We chose not to use the 24dB Moog ladder filter or the Russian and English filters because they are too characteristic of the original synthesizers. Other filters were also rejected for various reasons, leaving us with the Steiner-Parker filter, which embodies a good compromise between versatility and aggressive edge. The Steiner-Parker filter is not implemented in any other modern synthesizer, therefore the MiniBrute will sonically differentiate itself from all other synthesizers available today.

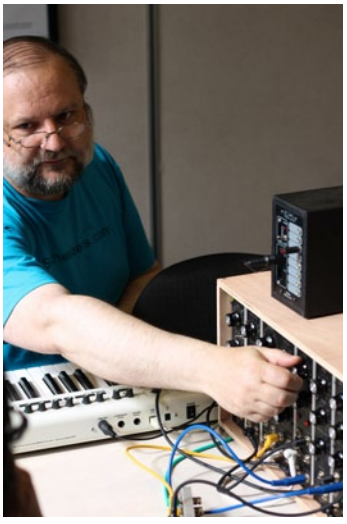


Figure 37 - Yves demoing various filters

Figure 38 - Brute Factor™

4.1.13 **Brute Factor™**

The Brute Factor™ (Figure 38)was inspired by a patch made on a famous vintage synthesizer by connecting the headphone output to the external audio input. This patch has been adapted and implemented internally into the MiniBrute. The result is a feedback loop that can create a variety of sounds. On low settings, the distortion is smooth and gentle, and when turned above 75% the MiniBrute will produce raw, gritty and unpredictable feedback sounds. The combination of the boutique Steiner-Parker filter and the characteristics obtained by applying the Brute Factor™ result in a very unique sonic palette.

Figure 39 - The MiniBrute team discussing principal factors

4.2 Relative Positioning of the Arturia MiniBrute Synthesizer

4.2.1 Relative Positioning to Portable Hardware Synthesizers under $1,000

4.2.1.1 ERRC Grid of the MiniBrute

The Eliminate-Reduce-Raise-Create Grid for the MiniBrute relative to portable hardware synthesizers below $1,000, provides a snapshot of the tool and reveals its findings (Figure 40). Those factors that the industry has taken for granted and can be eliminated and reduced are especially worth pointing out.

4.2.1.2 Strategy Canvas

The value curve of the MiniBrute in relation to portable hardware synthesizers (Figures 41-43) differs distinctively from those of its competitors. Its strategic profile is a typical example of a compelling blue ocean strategy as it has focus, divergence, and a compelling tagline.

Eliminate	Raise
Which factors can you eliminate that your industry has long competed on? • Preset storage • Requirement of technical proficiency • Multiple functions per knob/slider • Vintage Design • Vocoder	Which factors should be raised well above the industry's standard? • Usability • Hands-on control • Keyboard quality • Build quality • Portability • Compatibility with analogue instruments (MIDI/CV conversion) • Sonic possibilities through unique wave shaping control
Reduce	**Create**
Which factors should be reduced well below the industry's standard? • Price • Number of keys	Which factors should be created that the industry has never offered? • Preset sheet (template) • Aftertouch support • Multiple waveform mixer • Brute Factor™

Figure 40 - ERRC Grid of the MiniBrute relative to portable hardware synthesizers

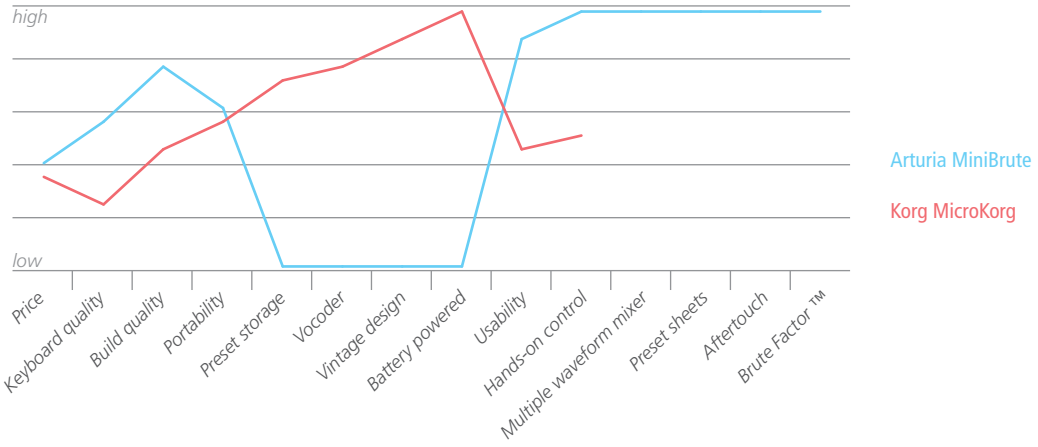


Figure 41 - Strategy Canvas of the MicroKorg vs. MiniBrute

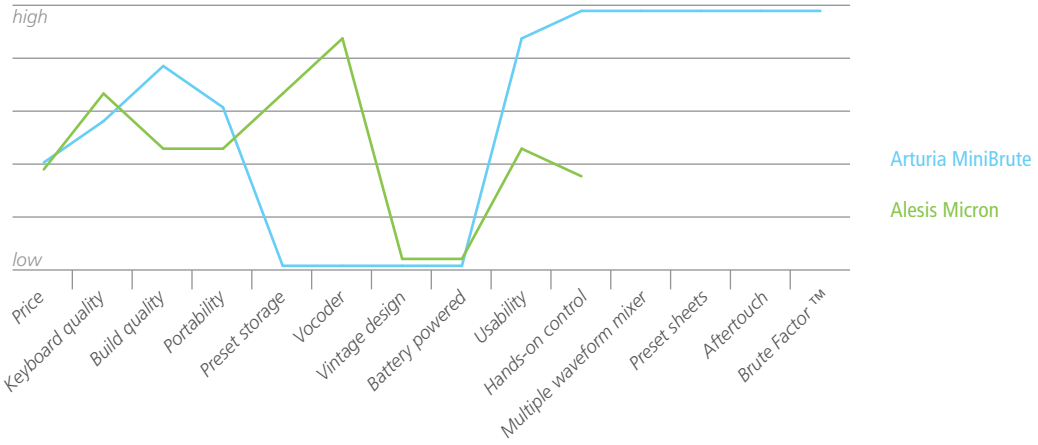


Figure 42 - Strategy Canvas of the Micron vs. MiniBrute

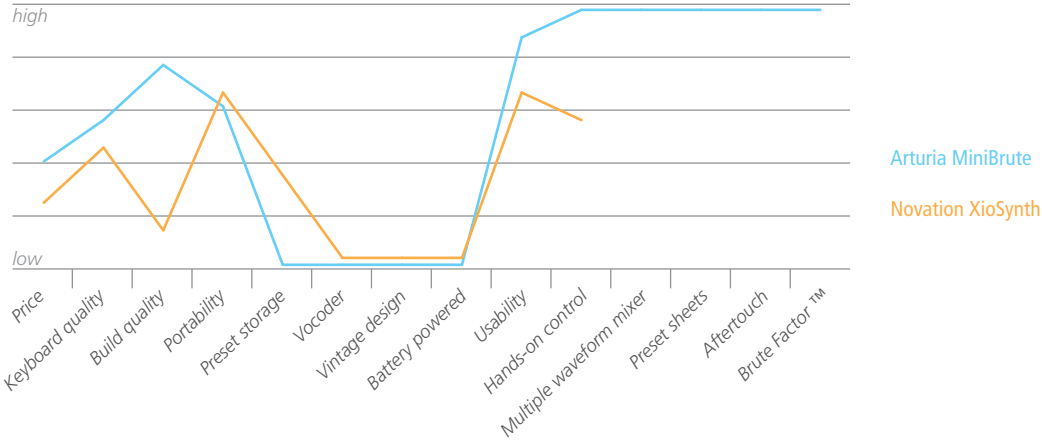


Figure 43 - Strategy Canvas of the XioSynth 25 vs. MiniBrute

Focus: Every great strategy needs to have focus. This should be clearly represented in the strategy canvas. By looking at the MiniBrute's profile, we can see three factors that are clearly emphasised: build quality, usability, and sonic possibilities. By focusing in this way, the Minibrute does not need to rely on investing on all the industry's competitive factors, allowing it to keep costs down.

Divergence: When companies compete with one another by stealing or building on top of rival products, the result is often a strategy curve with very similar traits to that of its competitors. Consider the similarities between the strategy curves of the Korg MicroKorg, the Novation XioSynth 25, and the Alesis Micron. By applying the ERRC grid, we were able to differentiate the MiniBrute from its industry competitors.

Compelling Tagline: A good strategy needs to have a clear and compelling tagline. "A world of sonic possibilities, within hand's reach of every musician" could well be the MiniBrute's tagline. How would industry competitors react to this? A good tagline must be able to deliver a message clearly and honestly, otherwise customers will lose trust and interest in the product (Kim & Mauborgne, 2005).

4.2.1.3 Buyer Experience Cycle / Buyer Utility Map

As can be seen from Figure 44, the MiniBrute differentiates itself from competitors by providing significant utility in other areas of the map. Instead of investing resources into developing a synthesizer that is highly productive and lavish, we created the MiniBrute to be simple to use, fun and flexible.

	Purchase	Delivery	Use	Supplement	Maintenance	Disposal
Customer productivity						
Simplicity						
Convenienve						
Risk						
Fun & image						
Environmental friendliness						

Korg MicroKorg Alesis Micron Novation XioSynth 25 Arturia MiniBrute

Figure 44 - BEC/BUM of Portable Hardware Synthesizers

4.2.2 **Relative Positioning to Portable Analogue Synthesizers under $1,000**

4.2.2.1 ERRC Grid of the MiniBrute

The Eliminate-Reduce-Raise-Create Grid for the MiniBrute relative to portable analogue synthesizers below $1,000, provides a snapshot of the tool and reveals its findings (Figure 45). Those factors that the industry has taken for granted and can be raised and created are especially worth pointing out.

4.2.2.2 Strategy Canvas

The value curve of the MiniBrute (Figures 46-48) distinguishes itself immensely from competitors in the portable hardware synthesizer industry, thus indicating a high likelihood of creating a blue ocean. The differentiation is even greater when comparing it to the portable hardware synthesizer canvas (Figures 41-43).

As shown in the strategy canvas, the value curve has focus due to various industry standard factors that have been eliminated, such as preset storage and vintage design. Although these factors have been eliminated, the curve conveys that the MiniBrute has gained an advantage by simultaneously pursuing differentiation and low cost, therefore creating value innovation. An important factor that tends to have negative impacts on a company's cost structure is the delivery of multiple VCOs. By only delivering one VCO, the MiniBrute has been able to keep its cost structure to a minimum. Factors that have been ignored or compromised by the industry, such as usability, CV support and arpeggiator features, have been increased well above the industry standard. Additionally, the value curve indicates that the MiniBrute introduces several new offerings that have never before been seen in the industry. These supplementary offerings provide the buyer with new sources of value.

A compelling tagline for the MiniBrute in relation to portable analogue synthesizers could be "An all-in-one easy to use analogue synthesizer, at an unbeatable price". All current industry competitors would have difficulties reducing their conventional offerings of multiple VCOs, preset storage, analogue legacy and vintage design into a more memorable tagline.

4.2.2.3 4.2.1.2 Buyer Experience Cycle / Buyer Utility Map

Although the MiniBrute provides significant utility in several of the same areas of the cycle as its competitors, the overall utility can clearly be distinguished (Figure 49). The Doepfer Dark Energy and DSI Mopho focus heavily on productivity, fun and image while using the instrument, whereas the MiniBrute emphasises the simplicity of using and supplementing the instrument.

Eliminate	Raise
Which factors can you eliminate that your industry has long competed on? • Preset storage • Requirement of technical proficiency • Multiple functions per knob/slider • Vintage design	Which factors should be raised well above the industry's standard? • Usability • Hands-on control • Build quality • Portability • Compatibility with analogue instruments (MIDI/CV conversion) • Sonic possibilities through unique wave shaping control
Reduce	**Create**
Which factors should be reduced well below the industry's standard? • Price • VCOs (Oscillators) • Number of keys	Which factors should be created that the industry has never offered? • Preset sheet (template) • Keyboard (all in one package) • Boutique filter • Multiple waveform mixer • Brute Factor™

Figure 45 - ERRC Grid of the MiniBrute relative to portable analogue synthesizers

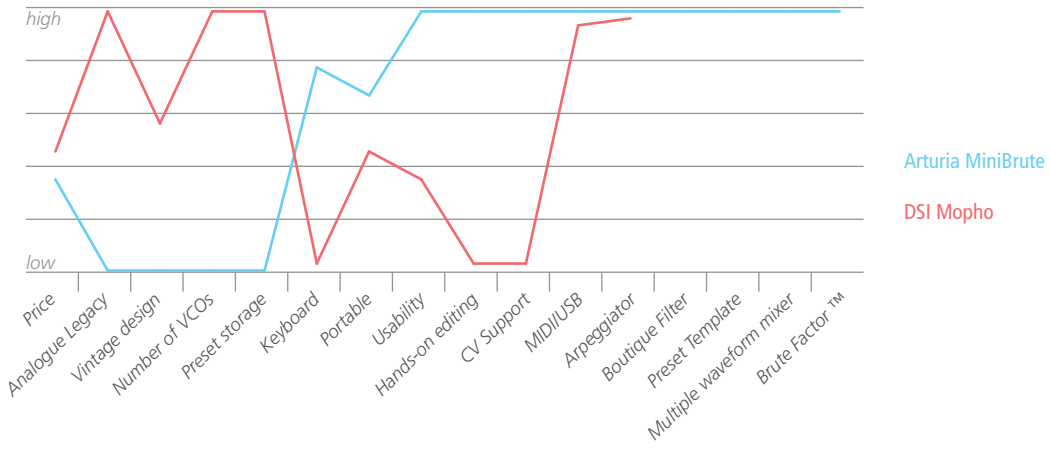


Figure 46 - Strategy Canvas of the Mopho vs. MiniBrute

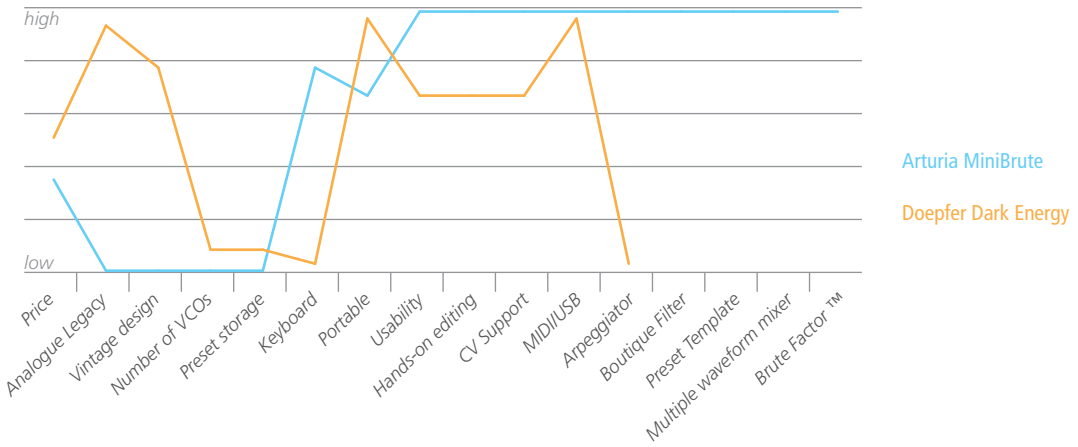


Figure 47 - Strategy Canvas of the Dark Energy vs. MiniBrute

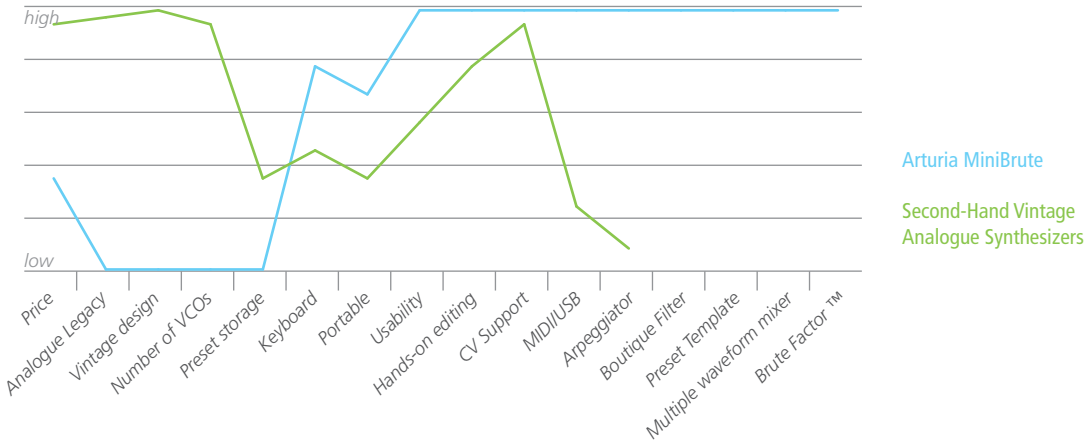


Figure 48 - Strategy Canvas of second-hand analogue synthesizers vs. MiniBrute

	Purchase	Delivery	Use	Supplement	Maintenance	Disposal
Customer productivity			● ●			
Simplicity			● ●	●		
Convenience				●		
Risk	●		●		●	
Fun & image			● ● ●			
Environmental friendliness	●					

● DSI Mopho ● Doepfer Dark Energy ● Second-Hand Synthesizers ● Arturia MiniBrute

Figure 49 - BEC/BUM of Portable Analogue Synthesizers

4.3 The Arturia MiniBrute


MINIBRUTE

Main Features

- Monophonic synthesizer
- 100% Analog Audio Signal Path
- Steiner-Parker Multimode Filter (LP, BP, HP and Notch)
- Voltage Controlled Oscillator with Sub-Osc
- Oscillator Mixer (Sub, Sawtooth, Square, Triangle, White Noise, Audio In)
- LFO1 with 6 waveforms and bi-polar modulation destinations
- LFO2 with 3 vibrato modes
- Brute Factor™ delivering saturation and rich harmonics
- Ultrasaw generating shimmering sawtooth waveforms
- Metalizer bringing extreme triangle harmonics
- Two ADSR Envelope Generators
- 25 note Keyboard with Aftertouch
- Rugged Aluminium Enclosure
- External Analog Audio Input
- CV In/Out controls: Pitch, Gate, Filter, Amp
- MIDI In/Out with 5-Pin DIN connectors
- USB MIDI In/Out
- 1/4" Audio Output and 1/4" Headphone Output
- Gate Source Selection: Audio Input, Hold, Keyboard
- Arpeggiator:
  - 4 Modes of Arpeggiation
  - 4 Octave Range Control
  - 6 Time Divisions
  - Swing Control


OSCILLATOR
Ultrasaw Amt
Pulse Width
Metalizer
Ultrasaw Rate
ENV Amt
ENV Amt
FILTER
Cutoff
Resonance
Mode
ENV Amt
KBD Tracking
ENV Speed
Brute Factor
Phones
Master Volume
Fine Tune
MINIBRUTE
ANALOG SYNTHESIZER
OSCILLATOR MIXER
Audio In
FILTER ENVELOPE
Attack
Decay
Sustain
Release
AMPLIFICATION ENVELOPE
Attack
Decay
Sustain
Release
CONTROLS
Wheel
Aftertouch
Range
Glide
VIBRATO
Rate
LFO
PWM & Metalizer
Pitch
Filter
Amp
Wave
Rate
Clock
Octave
ARPEGGIATOR
Step
Tempo
Mode
Swing
Tap

CON-
CLU-
SION

This chapter concludes the findings of the research in order to answer the main research question. Furthermore, it lists various recommendations that companies in the EMI industry can utilize to improve the process of creating a position of innovative leadership to further their growth and success.

5.1 Conclusion

How can EMI companies utilize innovation strategies to add value to their products and create new business markets beyond their core?

How can companies working in the EMI industry apply the analytical tools and frameworks of the BOS to make proactive changes that will bring value and new markets to the industry?

At first, Arturia's closest competitors were identified using quantitative data from MI SalesTrak. A selection of BOS analytical tools and frameworks were applied to these competitors in order to identify their relative positioning. The results suggest that portable hardware synthesizers primarily compete on the same factors, as opposed to portable analogue synthesizers which show a lot of differences between competitors. One reason for this may be that portable hardware synthesizers are targeted more towards the mainstream market, whereas portable analogue synthesizers are targeted towards niche markets. Secondly, based on the outcomes of the strategic profiling, the BOS tools were utilized to create a strategy and market for Arturia in the EMI industry. Thirdly, the principal competing factors of the Arturia MiniBrute were identified, and to validate the strategy, the MiniBrute was analysed in relation to its closest competitors. The next chapter lists recommendations that can be used by EMI companies to add value to their products and create blue oceans of unexplored markets.

5.2 Recommendations

5.2.1 Refrain from Benchmarking

Today's EMI companies do not have a strong mind-set to value innovate. Due to the competitive environment, companies feel most confident benchmarking competitors to a high degree in order to identify the right price and position in the market. This benchmarking may distract companies and hinder their own performance and creation of value innovation. EMI companies try too hard to hold onto their customers by adapting their products specifically for the current market. Seeing as the EMI industry shows hyper-competition as a strong characteristic, relying on current customers is not a sustainable strategy. Therefore, in order to value innovate, companies must break the strong link between them and their customers.

5.2.2 Emotional Appeal

EMI companies have commonly focused on the technical qualities of their innovations, determining their success through technical performance and new features rather than by lifestyle or emotional appeal. In order to reach the second and third tier of customers, it is recom-

mended to have a stronger focus on emotional appeal since these users are home to another industry and therefore not as familiar with technical terms compared to first-tier industry users. The music we create and consume is, in essence, a lifestyle choice that affects us every day and therefore it should be marketed as a lifestyle, rather than as something practical or functional.

5.2.3 **User Experience Cycle**

By using the BEC/BUM map we were able to find that most EMI industry competitors heavily focus on the use of their products. EMI companies should use the BEC/BUM map in order to identify areas of the user experience cycle that could be improved.

5.2.4 **Small Company Advantage**

Small companies such as Arturia have the advantage of being able to radically innovate without the common hurdles larger companies inevitably face. Large companies simply cannot compete with small companies on a cost and organisational basis since organisational hierarchies slow down the decision-making process. Large companies also have well established product platforms and are therefore more limited when developing new products as they need to integrate well into their existing ecosystem. In Arturia's case, there were no integration hurdles when developing the MiniBrute since it was only the company's fourth hardware product, and the first analogue product to be released. As a small company, Arturia also has the ability to quickly adjust focus according to changing market conditions and customer preferences. However, the mistake small EMI companies often make is innovating without value, consequently resulting in technology-driven and futuristic instruments. These companies need to maintain a balance between value and innovation in order to avoid creating a product buyers are not ready to accept and pay for.

5.2.5 **Perception of Value**

EMI companies often assume that technological innovation is relative to the value received by users. It is recommended that EMI companies first determine the value that the individual technological innovation can provide to the product, and how it can complement the factors of competition to increase the appeal to customers.

5.2.6 **Eliminate Factors**

EMI companies need to challenge their traditional mind-set in order to create a new value curve that differentiates itself from the competition. Unfortunately EMI companies rarely reduce factors below industry standards, and only a minority eliminate factors that are taken

for granted. This indicates that they tend to hold on to old behaviours, which in turn hinders their chances to value innovate in the future.

5.2.7 **BOS Tools**

It is recommended that EMI companies use the strategy canvas to evaluate the current state of the market. EMI companies should also use the strategy canvas to create a value curve during the NPD process.

EMI companies should use the ERRC grid (Four Actions Framework) whenever they are in the process of creating new value curves. Through the four stages of eliminating, reducing, raising and creating, companies can create a new value curve with a focus that differentiates itself from the competition.

The buyer utility map should be used by companies in order to identify and improve the utility propositions of a product or service in relation to the product experience cycle of the user.

The three tiers of noncustomers should be used by EMI companies to identify potential noncustomers of the industry. To achieve the largest catchment of noncustomers, EMI companies need to identify the commonalities between the three tiers in order to convert noncustomers and draw them into their new market.

5.2.8 **EMI Industry Characteristics**

In an industry that shows characteristics of hyper-competition and rapid technological advancement, it is crucial to have a wide perspective of potential competitors. In the case of the EMI industry, it is suggested that companies also consider other industries as potential threats. Yet again, the Three Tiers of Noncustomers can be used to identify these industries.

5.2.9 **Integration into Product Requirement Document**

It is suggested that the BOS tools are used in the early stages of the NPD process. They should not replace a company's existing process, but rather complement it. For example, they could be implemented into the Product Requirement Document. The tools could also be used independently to spark new ideas when inspiration is needed.

5.2.10 **Involve a Designer**

Having a designer involved in the early development and strategic planning phase of a new product was uncommon for Arturia prior to this project. As the only member of the team with a design background I felt a certain responsibility of aligning the project with the developed

strategy. I often found myself in the position of eliminating certain factors, and driving against the implementation of new technical features, whereas colleagues coming from a technical background were often pushing for more features. In order to value innovate it is recommended that EMI companies involve designers from an early stage of a product development process.

5.3 Synthesizing a Blue Ocean

The BOS tools proposed in this thesis are highly recommended for EMI companies finding themselves competing in an overcrowded market. This is not to say that using the strategies will remove all competition. As blue oceans are created, competing companies will migrate and settle in the newly created market. When competitors' value curves converge towards your, it is suggested that companies continue to value innovate and create another blue oceans. Hence, by intermittently comparing your competitors' value curve versus your own, the level of convergence will become evident. This thesis aims to help EMI companies in formulating and executing a blue ocean strategy to add value to their products and create new business markets beyond their core.

REFER-ENCES

Bibliography

Chadabe, J. (2000, February). The Electronic Century Part I: Beginnings, Electronic Musician. Retrieved from http://emusician.com/tutorials/electronic_century1/.

D'Aveni, R. A. (1995). Hypercompetitive Rivalries. Free Press.

Davies, H. (2009, October). Grove Music Online. Retrieved from Oxford Music Online.

Hersi, A., & Aleksandrowicz, M. (2010). Case studies exploring environmental influence on SMEs international expansion. Broadening the horizon whilst using ones environment.

Holmes, T. (2008). "Early Computer Music". Electronic and Experimental Music: Technology, Music, and Culture. Taylor & Francis.

John Pruitt, T. A. (2006). The persona lifecycle: keeping people in mind throughout product design. Morgan Kaufmann.

Johnson, C., & Hirschberg, J. (2011). MI SalesTrak. Retrieved January 16, 2012, from MI SalesTrak: http://www.misalestrak.com/

Kim, W. C., & Mauborgne, R. (2001). Creating New Market Space. In M. O. Clayton M. Christensen, Harvard Business review on innovation (p. 222). Harvard Business Press.

Kim, W. C., & Mauborgne, R. (2005). Blue Ocean Strategy: How to Create Uncontested Market Space and Make Competition Irrelevant. Harvard Business Press.

Le Heron R, H. J. (2005). New Economic Spaces: New Economic Geographies. Ashgate Publishing.

McGee, J. a. (1986). Strategic groups: Theory, research and taxonomy. Strat. Mgmt. J.

Nagel, P. (2009, July). Sound On Sound. Retrieved 2011, from http://www.soundonsound.com/sos/jul09/articles/korgmicrokorgxl.htm.

Porter, M. E. (1980). Competitive Strategy: Techniques for Analyzing Industries and Competitors. Free Press.

Porter, M. E. (1985). Competitive Advantage: Creating and Sustaining Superior Performance. New York: Free Press.

Porter, M. E. (1996). What is Strategy? Harvard Business review.

Roads, C. (1996). The Computer Music Tutorial. MIT Press, 226.

Varèse, E. (1996). In D. J. Kostelanetz R, Classic Essays on Twentieth-Century Music: A Continuing Symposium (p. 404). Wadsworth Publishing Co Inc.

Table of Figures