

Business Innovation Observatory



Innovative Business Models for Competitiveness

“Soft” business models

Case study 23

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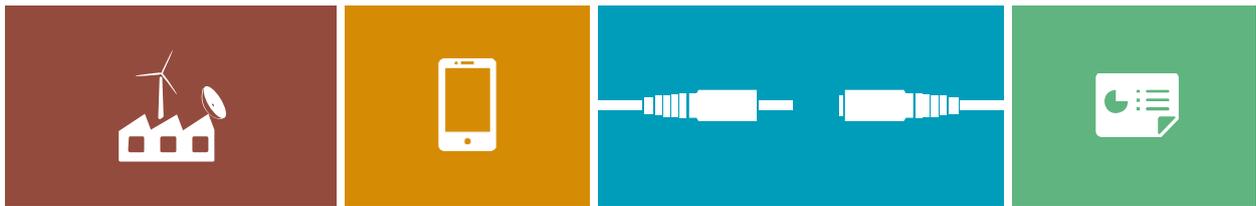
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1. Executive summary

“Soft” business models represent a trend that has already had a profound effect on the European economy. With “soft” business models, we imply companies as science or technology based companies whose business model is to provide services, such as R&D and technical consulting, to other companies. Although admittedly it has existed for over a few decades, the world-famous technology clusters particularly owe their existence to the concept.

What is new, however, is the way “soft” business models are being employed worldwide. Historically, “soft” business models were regarded as part of a transition process, where companies started out as service companies and gradually transitioned to “hard” companies that sell a standardised product. However, many companies nowadays choose not to pursue this transitioning process, preferring to stay operating as a “soft” company.

“Soft” companies have a profound effect on the economy. They generate revenue and create jobs, are among the most R&D intensive companies in Europe, create spill overs, increase the efficiency and resource allocation of sectors, generate Intellectual Property (IP), and are pivotal in the establishment of “hard” companies.

Furthermore, “soft” companies can serve different purposes during a company’s lifecycle. They have been found to be beneficial as a start-up model, a growth-model, as a platform for transitioning into products, and as a mechanism for exploring applications.¹

Companies employing “soft” business models, however, also face a number of challenges. Although customer-funded R&D contracts were found to be a key driver of innovation, companies sometimes have a hard time acquiring these in the private sector. In the public sector, this instrument appears to be widely underused, providing further potential for policy making.

Another challenge has a direct relationship to the size of the companies. As “soft” companies are generally small to medium sized companies, they face particular challenges in accessing finance at the European level. In terms of public funding, applying for European funding is regarded as challenging due to the high level of bureaucracy, long timelines, high requirements, and the obligation to share their intellectual property in joint tender procedures. Moreover, managing intellectual property also posed to be challenging and time consuming for SMEs.

In order to bridge the gap between “soft” companies and public policy, a number of recommendations have been formulated. First of all, public policy further needs to explore the option of providing customer-funded R&D contracts through public procurement. By acting as a lead customer, public bodies can drive innovation in the private sector. A mechanism for this can be found in further exploring and expanding the the Small Business Innovation Research (SBIR)-type programmes already implemented in Europe.

In addition, we support existing research on the recommendation that public policy should seek to stimulate bilateral R&D contracts between private parties.² This can be facilitated by providing grants for this type of contracts, acting as a facilitator for bilateral contracting between the two parties.

Finally, more support for intellectual property management may be needed for SMEs. While the IP SME Corner of the IPR Helpdesk already provides this, it could be that SMEs are not fully aware of its existence. It is therefore recommended to bring the IP SME Corner further under the attention of SMEs, e.g. by providing information packages to Chambers of Commerce, or by disseminating information to universities and research institution.



2. Understanding “soft” business models

In an era of technology, outsourcing, specialisation and globalisation, the existence of companies with a “soft” business model is a natural progression. The quest for ever more efficiency has led the way for these “soft” business models to emerge instead of the traditional “hard” business models.

Admittedly, the concept of “soft” business models is not entirely new. The phrase was first coined in the literature by Bullock (1983), who made a distinction between two types of business models: “soft” companies and “hard” companies”. Its application and usage, however, has changed.

Although “soft” business models have a rich history in the establishment of the prominent technology clusters all over the world, its application has gradually shifted over time. Whereas historically “soft” companies tended to transition to “hard” companies, increasingly more companies choose not to pursue such a transition anymore.

With “soft” companies, Matthew Bullock, a Barclays Bank manager, identified companies selling highly analysed technical solutions for specific problems. “Hard” companies, in contrast, are companies selling mostly standardised and relatively simplified products to a general market.³ Put differently, “soft” companies are engaged in providing services, writing software, conducting R&D and providing consultancy.⁴

Bullock (1983) described a “hardening” process of the companies. He noticed a trend where companies start “soft” and gradually transition to “hard”, i.e. they start out as companies providing services and transition to companies providing rather standardised products.

Nowadays, this transition does not necessarily hold. Many small high-tech companies prefer a business model based on carrying out R&D contracts for customers (the so-called ‘soft’ model) rather than developing standardised products (the ‘hard’ model). For this case study, we therefore follow the recent literature in defining a “soft” company as “a science or technology based company whose business model is to provide R&D based services (e.g. technical consulting, contract R&D) and which draws on its expertise and/or proprietary technologies to provide bespoke offerings for a range of customers and applications”.⁵

The “soft” model enables both SMEs and clients to explore new techniques and solutions in a low-risk environment. “Soft” companies can tailor their offer to meet a wide range of customer needs in different industries, based on their expertise. This model provides much greater flexibility and a

wider choice of customers compared to the strategy of ‘hard’ companies with a narrow range of standard products.

As follows from the above description, companies employing “soft” business models are active in a wide range of sectors and employ a wide range of activities. Innovative examples mostly tailor to a market demand for highly innovative, specialised and efficient R&D. These examples include companies specialised in pharmaceutical research, engineering and technical consultancy.

The innovative companies have reacted to a specific demand on the market, namely a demand for outsourcing R&D and product development. Clients of companies with “soft” business models need to develop increasingly more complex solutions, for which they often do not have the knowledge, expertise or available resources within the company. The highly specialised work is, as a result, outsourced to an external company.

For example, AudioCure Pharma, a company included in this case study, is specialised in R&D for the prevention and treatment of a range of hearing disorders. With their knowledge and expertise, they can conduct R&D work for other companies in this field. Furthermore, companies like Systematic and ATEEDA, also included in this case study, engineer highly advanced solutions for their clients, whereas Achilles Design not only engineers the solutions, but also designs products and provides business consulting.

Firms employing a “soft” business model are typically small sized, typically numbering 200-300 employees. The absence of any mass manufacturing activity contributes to a relatively small size these firms.

Furthermore, the “soft” business model is not associated with large economies of scale, because firms depend almost entirely on brain power. Project-driven work conducted within constantly reforming teams provides the flexibility to incubate new technologies and respond to new market opportunities in a way that typically highly focused, venture capital-backed businesses cannot. This provides a real advantage over the traditional “hard” companies. As their flexibility allows them to better adapt to different markets, they can offer cross-sectoral services, maximising their market potential.

Resources can also be allocated to different parts of the business and flow of contracts. As a result, business divisions are regularly reconfigured, reflecting new opportunities and market pull. The ability to evaluate and manage high risk, rapid product development is a key skill of



such firms. It also provides these companies a wider choice of early customers compared with the traditional “hard” companies, which need to employ a rather fixed product placement strategy.⁶

“Soft” business models also help to overcome the heavy capital demands of developing proprietary technology. Although venture capital has proven highly successful for Silicon Valley, earlier research has widely discussed the weak European market for venture capital. Furthermore, research shows that venture capital plays only a small role in financing small and medium-sized enterprises (SMEs).⁷

Instead of venture capital, companies with “soft” business models typically rely on personal savings, sometimes with modest investments from family and friends. This is supplemented by customer consultancy work and occasionally by local bank lending. By not relying on venture capital, firms remain in greater control of their destiny and can adapt their business model to suit changing circumstances. “Soft” business models are not bound to specific industries. As they are highly adaptable, small variations occur between various industries. The stance in

the literature is that “soft” business models can be relatively easily applied to technology development consultancy firms, but become more complex when considering e.g. R&D companies in the electronics sector. The latter has faces vast more challenges, such as longer development scales, higher scientific complexity and higher capital requirements.

As a result, different forms of the “soft” business model can be identified for different industries. This ranges from a highly transient model (mostly occurring in the software industry) through a ‘classical’ technology consultancy-style model, to long-term science-oriented work.⁸

The described “soft” business models showcase high potential for the European economy. The many technology clusters in Europe that are light on manufacturing facilities, such as the Cambridge cluster (UK), Silicon South West (UK) and DSP Valley (Belgium and the Netherlands) are some of the many examples that can be found in Europe. The lack of literature, however, highlights the need to further explore the potential of this trend.

3. Socio-Economic Relevance

Over the past decades, “soft” business models have had a profound influence on the economy. The trend is still not fully explored, as traditionally these “soft” companies have transcended to “hard” companies. It has, however, become clear that the “soft” companies need not transition to add continuous value to the economy. This chapter will further explore the socio-economic relevance of the trend.

3.1. The market size and potential of the trend

Measuring the market potential of “soft” business models is difficult due to the transcending nature of the phenomenon across various sectors and industries. Moreover, the literature on “soft” business models is strongly underdeveloped. Existing research, however, supports the claim that it is impossible at the time to quantify the overall contributions of “soft” business models and the market size in a systematic way.⁹

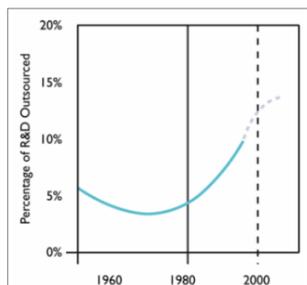
The only existing attempt in the literature aimed to quantify the overall contribution of selected “soft” companies in the region of East of England. Based on selected individually held companies in the region, it has been estimated that “soft” companies contributed over EUR 500 million in revenues in 2008, employing over 3,525 people in the region.¹⁰

This estimation, however, greatly understates the overall contribution. As they have only focused on individually held companies, the effects are ignored when companies are acquired by larger industry players. It seems unlikely though that after acquisition, all activities are halted. These activities, however, cannot be distilled from the data. Moreover, the contribution cannot be extrapolated to the EU level, shedding little light on the overall market size and potential for Europe as a whole.

Nevertheless, a few attempts have been undertaken to estimate the trend in outsourcing R&D, one of the key determinants of the market “soft” companies cater to. Historically, we can observe an inverted U shape of outsourcing R&D. Prior to the 1970s, companies started to undertake more R&D in-house every year. However, since the 1970s, companies have started outsourcing R&D again, and at an exponential rate. Figure 1 on page 5 displays this trend.

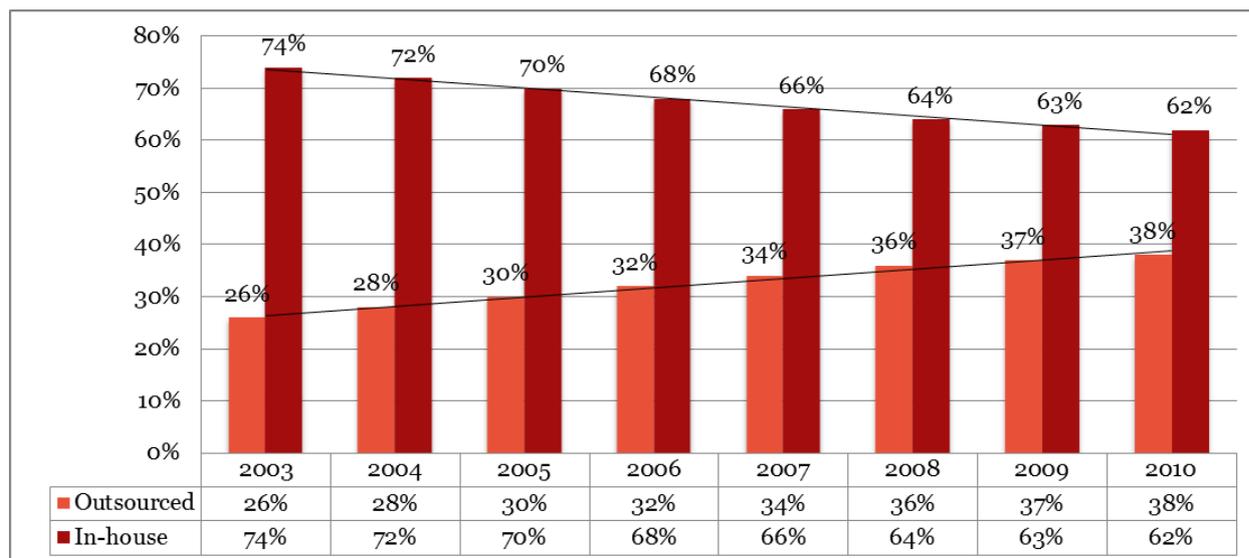


Figure 1: Outsourced R&D over time¹¹



Furthermore, there is some global data available on the proportion of outsourced R&D expenditures in the pharmaceutical sector. Between 2003 and 2010, in-house R&D expenditures fell from 74% of total R&D expenditures to 62% of total R&D expenditures, while the share of outsourced R&D rose from 26% till 38% in the same period. Figure 2 shows this trend graphically.

Figure 2: Portion of global pharmaceutical R&D expenditures outsourced, 2003-2010 over time¹²



The trend provides unique growth opportunities for companies. The companies selected in this case study evidence the market potential in the various niches they

operate in. Employing a “soft” business model enables them to pursue these opportunities. Table 1 provides an overview of the selected company cases.

Table 1: Overview of the company cases referred to in this case study

Company	Location	Business innovation	Success signals
AudioCure GmbH	Pharma Germany	Novel neuropharmaceutical therapies for the prevention and treatment of a range of hearing disorders. In addition to the in-house R&D in this field, they offer services that range from advice and training for new projects to the complete planning, execution and analysis of a full research and development project.	Backed by venture capital; patented lead components; successful initial financing round with High-Tech-Gründerfonds; Research Award from TH Wildau, September 2013; planned clinical trials on ground-breaking drug.
ATEEDA	United Kingdom	ATEEDA helps microchip companies reduce costs even as the complexity of their products increases.	ATEEDA has won many awards (including recognition in the EE Times Silicon 60), and has received several rounds of venture capital funding.
Coast Consulting	Technology Italy	Providing technical consulting to achieve Customer Efficiency Improvements in the fields of e.g. innovation, quality improvement, fast go to market, faster response time, and shorter delivery cycles.	Born from the initiative of professionals with extensive experience in corporate and international expertise, the company avails itself of the collaboration of a network of qualified national Partner Companies and University Institutions, what made possible the realization of an ecosystem that makes CTC a company leader in its field.



SystematIC	Netherlands	SystematIC offers the full breadth of analogue- and mixed-signal design expertise but also the mathematical and model experience	Their designs contribute to products on a broad market range, from consumer to automotive and from industrial to scientific. Customers are semiconductor manufacturers as well as SME's and based in Europe, Japan and the USA.
Achilles Design	Belgium	Achilles Design helps companies and governments to design, engineer and bring to market smart products, brands & services.	Achilles Design has worked for established industry players, such as Veolia and Opel, in various industries. Their projects have awarded over 3 reddot and 11iF product design awards.

The market potential of the niche markets the selected companies operate in, exemplify the business potential of employing “soft” business models. For instance, AudioCure Pharma estimates that, as of 2013, approximately 360 million people worldwide are affected by disabling hearing loss. By 2015, it is expected that there will be over 700 million people with a significant loss of hearing. Moreover, there is a steady increase in the prevalence of hearing loss among the aged population. Approximately 35% of people aged 65 to 74 years and over 45% of those over 75 years suffer from hearing loss. The potential market for their business innovation is therefore enormous.

Such examples, however, do not contribute much to drawing the overall picture of the potential of the trend. The remainder of this chapter will therefore focus on the benefits of “soft” business models and the role of the specific innovative solutions proposed by the companies to tackle current challenges.

3.2. The (socio-)economic impact of “soft” business models

The benefits of “soft” business models can be discussed from different angles. On the one hand we can look at the (socio-)economic advantages, while on the other hand we can analyse the benefits for companies adopting “soft” business models. The former will be discussed in this section and the latter in section 3.3 below.

“Soft” companies have a profound effect on the economy. Although there is no indicator available that measures the contribution to revenue and employment, the literature is in agreement on the positive effects of “soft” companies. These positive effects are also evidenced by the high number of success stories in innovation clusters all around Europe, including key industry players such as ARM in the Cambridge cluster.

Companies employing a “soft” business model provide various (socio-)economic benefits. “Soft” companies add value in the following ways¹³:

- they generate revenue and create jobs;
- they are among the most R&D intensive companies in Europe and as a result generate significant spill overs, bringing about a multiplier effect;
- they increase efficiency and resource allocation by offering a highly specialised skill to the market;
- they often generate Intellectual Property and radical new solutions as a “by-product” of their R&D;
- they are pivotal in the establishment of “hard” companies by spinning out Intellectual Property successfully.

As follows from these benefits, not only do “soft” companies add value by themselves, but they also create considerable spill overs. This is particularly evident in the role they play in the establishment of “hard” companies.

Although Intellectual Property can spin out of the company, it is important to note that the “soft” company may also be acquired by a “hard” company. This is, for instance, a rather common phenomenon in the pharmaceutical sector, where large corporations acquire smaller “soft” companies after they have fully developed a working solution. It has therefore become a strategy of some “soft” companies to focus on R&D and let an established party takeover for manufacturing, distribution and sales.

3.3. The benefits of “soft” business models at different stages of their development

Another interesting point of view is to look at the benefits for companies adopting “soft” business models. As the benefits are plentiful, recent work has attempted to categorise the benefits of “soft” business models in the various stages of the development of a company.

In the literature, it has been argued that “soft” business models have various uses. “Soft” business models provide the following uses and corresponding benefits¹⁴:



- As a start-up model: “soft” business models are capital light and are relatively easy to manage. They are regarded to be relatively risk-free, as no high amounts of capital are invested and as they provide a means of accessing a wide range of potential customers.
- As a growth model: “soft” business models allow for a gradual build-up of the company as the people working for the company accumulate expertise and market understanding through contracted work. Some cases have been identified in which contracted R&D work or contracted services have helped finance some of the core R&D activities of the company, eventually leading to proprietary Intellectual Property. For instance, HyGear, a company featured in our previous case study on Advanced Manufacturing – Smart Value Chain, partially funded their company by carrying out commercial contracts.
- As a platform for transition into product: the transitioning phenomenon has already been touched upon in this case study and provides an important benefit. As “soft” companies are continuously carrying out specialised work, they gather a constant stream of market intelligence. This allows them to better design and position a product of their own and transcend from a “soft” company to a “hard” company.
- As a mechanism for exploring applications of platform technologies: as “soft” companies are “asset light”, meaning that they do not own manufacturing facilities, they are not exposed to the risks of up-scaling at an early stage of the company. The “soft” business model allows them to explore the various options and test solutions with a wide group of customers, gaining valuable knowledge for developing a product of their own.

3.4. The role of “soft” business models in solving existing problems

“Soft” business models have the potential to tackle a wide range of existing problems, amongst others due to their inherent high flexibility. The companies described in this case study are exemplary for this. The challenges below have given rise to profitable business solutions, which are detailed below. They underline the potential of the companies in the niche markets they operate in.

Problem 1 – Increasingly more cases of hearing loss are being identified and by 2015, it is expected that there will be over 700 million people with a significant loss of hearing, up from an estimated 360 million worldwide in 2013. This requires highly advanced and specialised research. Increasingly more companies, however, lack the degree of specialisation or the available resources to conduct this type of research next to their daily operations.

Innovative solution 1 – AudioCure Pharma is developing a portfolio of novel neuropharmaceutical therapies for the prevention and treatment of a range of hearing disorders. Firstly, they are developing a treatment for acute and chronic noise-induced hearing loss; a disorder that is increasingly common as the world around us becomes noisier. Secondly, they are developing a preventive and a therapeutic drug for hearing loss caused by chemicals and medications, a condition known as “drug-induced ototoxicity”. With more than 300 known ototoxic medications (prescription and over-the-counter) on the market today, this is an important and under-studied area of research.¹⁵

As a result of their internal R&D, they have a patented lead compound, referred to as AC-002. This compound is an easy to synthesise small molecule and has already undergone comprehensive research. The primary focus of AudioCure’s development is ototoxicity and noise-induced hearing loss.

In addition, AudioCure Pharma offers services to external clients, ranging from advice and training for new projects to the complete planning, execution and analysis of a full research and development project.



Problem 2 – As the complexity of microchip products increases, companies face increasing difficulty in designing a solution in an efficient way.

Innovative solution 2 – ATEEDA helps microchip companies reduce costs even as the complexity of their products increases.

Modern microchips are made with an increasing number of digital blocks and analog blocks, each of which must be tested at several stages of manufacture. Analog blocks currently require expensive analog testers, and many connections to the chip are needed. Moreover, connections are scarce and expensive. ATEEDA’s products and services eliminate the need for expensive analog testers and the corresponding connections.

The way their key innovation works is by adding a tiny block to the microchip that enables the analog components to test themselves. Moreover, their proprietary LinBIST software tool customises this to reflect the customer’s requirements, and fits in well with existing design practices.¹⁶



Currently they help semiconductor companies to adopt the technology. They have adoption programs running with several semiconductor manufacturers worldwide to deploy the technology into high volume production lines.



Problem 3 – Integrated circuit design has become an increasingly complex domain and significant expertise is required to deliver high quality solutions to customers. Companies struggle to conduct this type of research due to a lack of specialisation, knowledge and resource availability.

Innovative solution 3 – To keep customers on the leading edge in product innovation and development, SystematIC provides fundamental knowledge of electronics and physics in combination with a vast expertise in design and integration projects. SystematIC is committed to provide customers with the best value in both quality of design and in design time.

The design activities of SystematIC concentrate on the fields of power conversion and power management, sensor readout and RF technologies. However, they also extend to other areas. SystematIC designs contribute to products on a broad market range, from consumer to automotive and from industrial to scientific. Key customers of the company include semiconductor manufacturers and SMEs in various fields. Their customers are based in Europe, Japan and the USA.

Although circuit design is an important aspect of their business, SystematIC also provides custom solutions with a competitive advantage. Moreover, they participate in several national and international research projects to stay on the forefront of technology.¹⁷



Problem 4 – There is a demand for Customer Efficiency Improvements in a wide range of fields, including innovation, quality improvement, response time and time-to-market.

Innovative Solution 4 – Coast Technology Consulting offers various services to meet customer demand in Customer Efficiency Improvements. Their services include business consulting, temporary and crisis management, project management and management of third parties.

Born from the initiative of professionals with extensive experience in corporate and international expertise, the company avails itself of the collaboration of a network of qualified national Partner Companies and University Institutions. This heritage lies at the core of the realisation of an ecosystem that makes Coast Technology Consulting a company leader in its field.

The services offered by Coast Technology Consulting are integrated with a line of innovative products targeted at management and business development. The solutions include a platform for Enterprise Social Collaboration and two advanced platforms for Hospitality services within Telecom and Healthcare.¹⁸



Problem 5 – Companies face challenges in the complete strategic design of products, turning product ideas into concepts and translating these to production ready parts.

Innovative Solution 5 – Achilles Design is a Belgian design company specialised in strategic design for a broad range of industries. The unique value proposition of Achilles Design relates to the fact that they have in-depth knowledge of both the technical and “soft” sides of product design.

This means that they both (technically) engineer new solutions for clients as well as design them in an innovative way to maximise the user experience. Moreover, Achilles Design is not only focused on delivering an end-product to their client, but is also able to offer services in strategy, product placement and brand management.

For product design, Achilles Design offers a complete development package to their customers. This ranges from the initial generation of product ideas and concepts, to product engineering, to delivery of production drawings and initial production follow-up. Their main expertise is engineering (mechanical, electronic, manufacturing, assembly), prototyping, CMF (colour, material & finish), user-centred design and user interface design. In addition, Achilles Design offers comprehensive services in brand and service design.¹⁹





3.5. Client side drivers for the uptake

Client side barriers to driver here relate to the barriers that have a positive influence on the uptake of “soft” business models. With client we therefore do not mean the customers of “soft” business models, but focus on the uptake of the “soft” business model itself.

Customer-funded R&D contracts have the potential to catapult “soft” companies into success. Customer-funded R&D helps “soft” companies gain market intelligence, provide a source of income, and helps create practical and innovative solutions for their clients. It also gives rise to a potential “snowball” effect. Customer-funded R&D help firms focus on the actual customer requirements and provide endorsement for subsequent customers and investors.²⁰

Another driver for the uptake of “soft” business models is that they are relatively capital light. Depending on the business they are in, the assets they require during start-up can be fairly limited. This especially holds for companies who carry out paid research or technical consulting. The relatively low initial capital requirements make it less demanding from a financial perspective during start-up.

3.6. Client side barriers to uptake

Client side barriers to uptake here relate to the barriers that hamper the uptake of “soft” business models.

One of the key barriers is finding highly skilled employees. This especially holds for attracting young talent to this type of organisations. This may be contrary to the common perception of these business models, as the Silicon Valley model for example has shown us that some of the most innovative “soft” start-ups (e.g. Facebook) were created by young visionaries.

The flipside of the coin, however, is that when these young innovators do not start up the company, they are generally difficult to attract to a small “soft” business, especially in the start-up face. Young talent increasingly values learning and development, something large corporations offer to the fullest extent. Fresh out of university, top talent is typically drawn to the larger industry players.

“Soft” business models also require an entrepreneurial mindset, especially at its early stages. Founders need to have the expertise in the specific R&D skills, but also manage the company, deal with funding, manage their Intellectual Property, and engage in business development. In practice, we often see that at least one of these turns out to be a challenge. Although this does not necessarily halt market uptake, it impedes quick market uptake.

Finally, the challenges related to acquiring customer-funded R&D contracts can have a substantial impact on the uptake of “soft” business models. Customer-funded R&D projects provide a lifeline for these companies. If they cannot secure these contracts at an early stage of the company, they have to look for other types of funding, which bring about different challenges.

4. Drivers and obstacles

“Soft” companies deal with a number of obstacles when going through their lifecycles. Most of these obstacles become apparent during the early stages of the company and are mainly concerned with complexity, a competitive business environment, and managing the company.

Some key drivers, however, can also be identified. One of the most profound influences can be found in customer-funded R&D contracts. While they bring about challenges of their own, especially in acquiring them, they can catapult “soft” companies into success. Flexibility and motivation of employees was also regarded as a key driver for the success of the companies.

This chapter further describes some of the key observations we found across the selected company cases.

4.1. “Soft” companies tend to use a mix of private and public funding

Although “soft” companies are relatively capital light, they still require funding at times. Typically, successful “soft” companies use a combination of private and public funding, consisting of customer-funded R&D, seed capital, venture capital, bank loans, private savings and/or public funding (mostly national/regional).

Of these funding sources, the key sources are customer-funded (R&D) contracts and public funding. Moreover, some companies in our sample have successfully raised capital in venture capital rounds to fund their own research.



Customer-funded R&D is an important source of funding for technology companies, especially for SMEs. They provide a stable source of income and in many cases allow the companies to build up expertise or carry out part of the research they want to conduct under contract of an external party.

The role of customer-funded R&D varies among the “soft” companies. Whereas some use it as a means of funding and surviving, i.e. to be able to conduct their own research, others have fully exploited it as their business.

For SystematIC, customer-funded R&D is one of the main sources of revenue. In contrast, AudioCure Pharma has funded their activities mostly through government funding and venture capital. While they offer R&D services, they currently have no running project with an external client.

4.2. Customer-funded R&D contracts can be challenging to acquire

Although customer-funded R&D is a key source of funding for many “soft” companies, it also poses some challenges of its own. For one, they can be difficult to acquire and require companies to market their expertise and services in a highly competitive environment.

The case of AudioCure Pharma, which at the time of writing had no customer-funded R&D project running, underlines this challenge in the business of customer-funded R&D. The market is highly competitive and with companies cutting costs across the board in the aftermath of the crisis, they can be hard to come by.

Moreover, despite the notion that these SMEs have the relevant expertise, it can be challenging to raise awareness of their services among their potential customer base. As their resources are limited in the first place and as they have an expertise in specific services, such as R&D, it can be challenging for them to undertake these activities. It is, however, key for companies to engage in these activities if they want to carry out customer-funded R&D.

Having said that, we observed a snowball effect for some of the company cases. Both ATEEDA and SystematIC, for example, have been able to carry out more and more customer contracts over time. Experience and knowledge from previous contracts, as well as returning customers and increasing awareness in the industry as they were developing client solutions, has allowed them to leverage their position successfully.

4.3. SMEs face significant barriers in acquiring funding at the European level

It is no secret that SMEs in general have been vocal on the administrative burden of applying for European funding. Nevertheless, it is one of the key challenges companies employing “soft” business models face, as the typical “soft” company is characterised as an SME.

Typically, the companies conducting customer-funded R&D have little interest in applying for European funding. Apart from the fact that eligibility is a concern in that case, the R&D is financed by an external party, eliminating the need for public funding.

European funding applications then particularly pose challenges to “soft” companies that intend to develop their proprietary Intellectual Property. The funding programme applications are regarded as bureaucratic and pose high administrative burdens. In addition, it is infeasible for SMEs to apply for funding alone. Applying as a consortium, however, forces them to give up their Intellectual Property.

This is a real concern for companies that never intend to transition to a “hard” company. AudioCure Pharma, for example, has no ambition at this point to install manufacturing facilities, carry the risk of up-scaling, set-up distribution channels and market their proprietary IP. Instead, they intend to maximise the value of their Intellectual Property and e.g. let large established corporations take over the end-market. In other words, they are only interested in carrying out the R&D, whether it is customer-funded, privately funded or publicly funded.

The requirements of European funding have strongly limited the extent to which it has been useful for such companies. As a possible alternative, these companies can, however, apply for related fields with a consortium, carrying out a different kind of research that has synergies with its proprietary IP. Moreover, Horizon 2020’s SME instrument may provide these companies a new source of funding.

4.4. Managing Intellectual Property is challenging for soft business models

Unsurprisingly, the generally small size of the companies employing a soft business model poses a challenge in managing Intellectual Property.



Intellectual Property is key for “soft” companies to spin-out radically new innovations. Moreover, for some “soft” companies, Intellectual Property is their “life line” for generating future profits, e.g. by selling or licencing it, or by selling the company as a whole.

Filing for patents, however, was considered to be costly and complicated. Moreover, patent applications take a long time and require specific expertise and company resources.

For larger corporations, this often poses relatively less challenges. These companies usually have a legal department in place and specialists on board that manage their Intellectual Property.

For SMEs, however, this is entirely different, especially for those employing a soft business model, Managing Intellectual Property is regarded as yet another aspect that needs to be considered when running the company, carrying out the R&D and finding customers for their services. Their high dependence on Intellectual Property makes them particularly vulnerable for this.

4.5. Flexibility and motivation of employees are key drivers of innovation

The company cases underlined the motivation of employees as one of the key drivers for success. Furthermore, flexibility of employees to work on a number of different projects was also identified as key for the success of the company.

The claim that motivation is an important driver for innovation has often been made in the literature. Due to the inherent nature of “soft” business models, motivation is a pivotal driver in the process.

“Soft” companies are often faced by challenging demands of their customers, the business environment or their potential

market. Moreover, they often combine customer-funded R&D with their own R&D. On top of that, the business needs to be managed. Due to the small size “soft” companies tend to have, many of these things need to be carried out by a select number of individuals.

In order to be successful, both in managing the company and in carrying out (customer-funded) R&D, employees need to be intrinsically motivated to get the best out of it. One of the company representatives stressed the aspect of motivation by mentioning that his key advice to start-ups would be to only go for it when you really want to.

Another key driver is flexibility of employees. Whether a company is solely carrying out customer-funded research, its own research, or a combination of the two, employees need to be flexible enough to work on different projects, often at the same time.

Customer-funded R&D contracts are often a rather volatile and unpredictable business. As they strongly depend on the needs of (potential) clients, customers expect “soft” companies to be reactive in their approach. This could mean that different customer contracts are initiated and that the company resources need to be distributed in a flexible manner.

Flexibility especially plays a role when companies are carrying out their own research as well. At times when customer deadlines are strict, employees need to be prepared to be flexible in the amount of work they put into their own research as opposed to the time they planned to put in contracted research.

In addition, managing a small to medium sized company requires management to be flexible in managing the business. The business environment adds to that. For example, in times when no customer-funded R&D is being carried out, companies may need to be flexible enough to develop solutions of their own.

5. Policy recommendations

“Soft” business models make up an interesting trend in business model innovation. Both in the literature as well as in our selected company cases, however, a number of policy areas can be distilled that may require further attention. This chapter focuses on the policy gaps that have been identified and poses a set of recommendations

5.1. Policy gap analysis

A number of policies have been identified that are already helping “soft” companies in their operations. These policy measures particularly relate to financing, R&D incentives, and managing Intellectual Property.



Measures that help reduce R&D costs, particularly of R&D personnel, are considered to be highly beneficial by companies. This mainly concerns R&D tax incentives, which are offered in the majority of the EU member states. In some EU member states, however, existing measures have been reported to be limited. For instance the Dutch WBSO (law on support for R&D activities) helps to alleviate the burden of R&D related personnel costs for companies, but does not provide enough support to hire additional employees.

The view of companies towards public funding varies per instrument. The R&D tax incentives are regarded to be beneficial and relatively accessible, and so is regional and national public funding. European funding, however, was labelled as bureaucratic and complex. As a result, the latter is widely underused for this trend.

The challenges “soft” companies face in receiving European funding mostly concern the application process for the Framework Programmes. SMEs often do not have the resources for writing a sound proposal and are not eligible in the first place to apply for the funding alone. This means that they need to apply with a consortium. Under current regulation, this means that they need to share (some of) their Intellectual Property. As Intellectual Property is one of the, if not the, key asset of “soft” companies, they are unwilling to do so.

The European Commission has identified the need for accommodating SMEs in applying for European funding. The SME Instrument, which will be implemented in Horizon 2020, aims to address the challenges SMEs are facing in acquiring European funding.

Another challenge that was raised concerned the complexity of managing Intellectual Property in Europe, particularly for SMEs. Although companies identified a need for further support, especially for SMEs, an existing European wide initiative already exists. The European IPR Helpdesk has a special IP SME Corner, which aims to help SMEs on Intellectual Property related challenges. It may, however, be the case that many SMEs are not fully aware of the initiative at this point.

Whereas customer-funded R&D contracts was identified as a key driver for “soft” companies, government procurement is virtually absent in the trend. Earlier research has indicated that there is a potential for Europe to leverage on this, especially when comparing the current situation to e.g. the United States. The Small Business Innovation Research programme (SBIR) may provide inspiration for this.²¹

Several SBIR equivalents exist in Europe. Examples include the SBRI programme in the UK and the SBIR programme in the Netherlands. Moreover, other European countries have adopted an SBIR-type programme, including Sweden and Finland²², while Austria, Spain, Ireland and France have

shown an interest in starting their own SBIR-like initiatives. However the European equivalents are reported to be less successful for a number of reasons. These include a lack of participation from government departments²³, a too short time period, and a too small scale to judge on the impact. Moreover, the available funds in Europe are more modest than in the United States, further reducing its impact.²⁴

5.2. Policy recommendations

The core of the policy recommendations provided here lies at the notion that customer-funded R&D contracts have a substantial effect on the efficiency of innovation. However, acquiring these contracts can be challenging.

Public policy can help bridge this gap. One possibility is that they can engage in similar type of contracts with innovative SMEs. Existing research has already identified the potential for public bodies to engage in such contracts.²⁵ Through public procurement, governments can provide particularly SMEs with a contract-based type of funding. This fosters the benefits of contract-based research, while adding security for SMEs and reducing the barrier for acquiring customer-funded R&D contracts.

The SBIR-type programmes provide a potential mechanism to fully explore this. By expanding the SBIR-type programmes, SMEs can be contracted at a larger scale for carrying out R&D.

At this moment, the evidence suggests that existing SBIR-type programmes are not highly successful in Europe as compared to the United States. However, this is not believed to be because of the idea itself, but because of the way it is implemented across Europe. Rather than implementing similar national schemes in other European countries, earlier research has called for exploring an integrated European-level SBIR programme with strong coordination mechanisms and competitive budgets.²⁶ On the shorter term, however, existing SBIR-type initiatives could be expanded and extended to bring support to these types of SMEs.²⁷ Moreover, the SME Instrument that is to be implemented in Horizon 2020 is expected to provide further support for SMEs.

Another possibility within the public policy framework is to stimulate bilateral R&D contracts between private companies. Earlier research has indicated that not all private companies are used to placing R&D contracts with other companies. Moreover, this case study has confirmed that some companies face challenges in acquiring private R&D contracts. Public bodies could make this practice more widespread through the use of grants. More specifically, we support the recommendation made by the Centre for Business Research (2010) that more of these bilateral contracts between customers and suppliers, especially where the suppliers are relatively small and innovative companies, should be funded.²⁸



Another point of concern is managing Intellectual Property rights for SMEs. Although arguments can be made for the advantages and disadvantages of the European patent system compared to the United States and Asia, the challenge here mostly concerns a need for information and support.

While an existing initiative in Europe, the IPR Helpdesk, provides help specifically to SMEs, these companies may not

be fully aware of the services offered by the IPR Helpdesk. As a result, it is recommended to bring the IP SME Corner further under the attention of SMEs, e.g. by providing information packages to Chambers of Commerce that can be handed out to start-up companies, or by disseminating information to universities and research institutions.



6. Appendix

6.1. Interviews

Company	Interviewee	Position
AudioCure Pharma GmbH	Dr. Ulrich G. Traugott	COO
ATEEDA	David Hamilton	CEO
Coast Technology Consulting	Francesco Cuoco	Managing director
SystematIC	Richard Visée	CEO
Achilles Design	Jürgen Oskamp	CEO

6.2. Websites

AudioCure Pharma GmbH	www.audiocure.de
ATEEDA	www.ateeda.com
Coast Technology Consulting	www.ctconsultingsrl.com
SystematIC	www.systematic.nl
Achilles Design	www.achilles.be

6.3. References

- ¹ Connell, D. and J. Probert, (2010), "Exploding the Myths of UK Innovation Policy: How "Soft Companies" and R&D Contracts for Customers Drive the Growth of the Hi-Tech Economy", Centre for Business Research, University of Cambridge.
- ² *Ibid.*
- ³ Bullock, M. (1983), "Academic Enterprise, Industrial Innovation and the Development of High Technology Financing in the United States.", London: Brand Brothers and Co.
- ⁴ Westhead, P., S. Batstone, and F. Martin. (2000). "Technology-Based Firms Located on Science Parks: The Applicability of Bullock's 'Soft-Hard' Model." *Enterprise and Innovation Management Studies* 1.2 (2000): 107-139.
- ⁵ Connell, D. and J. Probert, (2010), "Exploding the Myths of UK Innovation Policy: How "Soft Companies" and R&D Contracts for Customers Drive the Growth of the Hi-Tech Economy", Centre for Business Research, University of Cambridge.
- ⁶ *Ibid.*
- ⁷ Balling, M., B. Bernet and E. Gnan, (2009). "Financing SMEs in Europe: Some stylized facts", SUERF – The European Money and Finance Forum, Vienna 2009
- ⁸ Connell, D. and J. Probert, (2010), "Exploding the Myths of UK Innovation Policy: How "Soft Companies" and R&D Contracts for Customers Drive the Growth of the Hi-Tech Economy", Centre for Business Research, University of Cambridge.
- ⁹ *Ibid.*
- ¹⁰ *Ibid.*
- ¹¹ HM Treasury, DTI and DfES (2004), "Science & innovation investment framework 2004-2014", London.
- ¹² Aldrich, S. (2012), "Clinical Trial Outsourcing Report: Where are the opportunities in the USD 36.6 billion market for outsourcing clinical trials?", retrieved on 05-12-2013 from http://www.contractpharma.com/issues/2012-03/view_features/clinical-trial-outsourcing-report/
- ¹³ Connell, D. and J. Probert, (2010), "Exploding the Myths of UK Innovation Policy: How "Soft Companies" and R&D Contracts for Customers Drive the Growth of the Hi-Tech Economy", Centre for Business Research, University of Cambridge.
- ¹⁴ *Ibid.*



- ¹⁵ <http://www.audiocure.de>
- ¹⁶ <http://www.ateeda.com/>
- ¹⁷ http://www.systematic.nl/company/5-about_us.html
- ¹⁸ <http://www.ctconsultingsrl.com/>
- ¹⁹ *ibid.*
- ²⁰ ESRC, (2010), "Hi-tech start-ups and innovation myths", Evidence Briefing.
- ²¹ *ibid.*
- ²² SBTC, (2008), "The SBIR Program – Is it Working?", retrieved on 05-12-2013 from http://www.nsba.biz/docs/the_sbir_program_-_it_is_working.pdf
- ²³ OECD, (2010). "Public Procurement Programmes for Small Firms: SBIR-type Programmes", available at <http://www.oecd.org/innovation/policyplatform/48136807.pdf>
- ²⁴ PwC, (2013), "Comparison of European and non-European regional clusters in KETs: The case of semiconductors", a study carried out for European Commission, DG Communications Networks, Content & Technology.
- ²⁵ ESRC, (2010), "Hi-tech start-ups and innovation myths", Evidence Briefing.
- ²⁶ PwC, (2013), "Comparison of European and non-European regional clusters in KETs: The case of semiconductors", a study carried out for European Commission, DG Communications Networks, Content & Technology.
- ²⁷ ESRC, (2010), "Hi-tech start-ups and innovation myths", Evidence Briefing.
- ²⁸ Connell, D. and J. Probert, (2010), "Exploding the Myths of UK Innovation Policy: How "Soft Companies" and R&D Contracts for Customers Drive the Growth of the Hi-Tech Economy", Centre for Business Research, University of Cambridge.