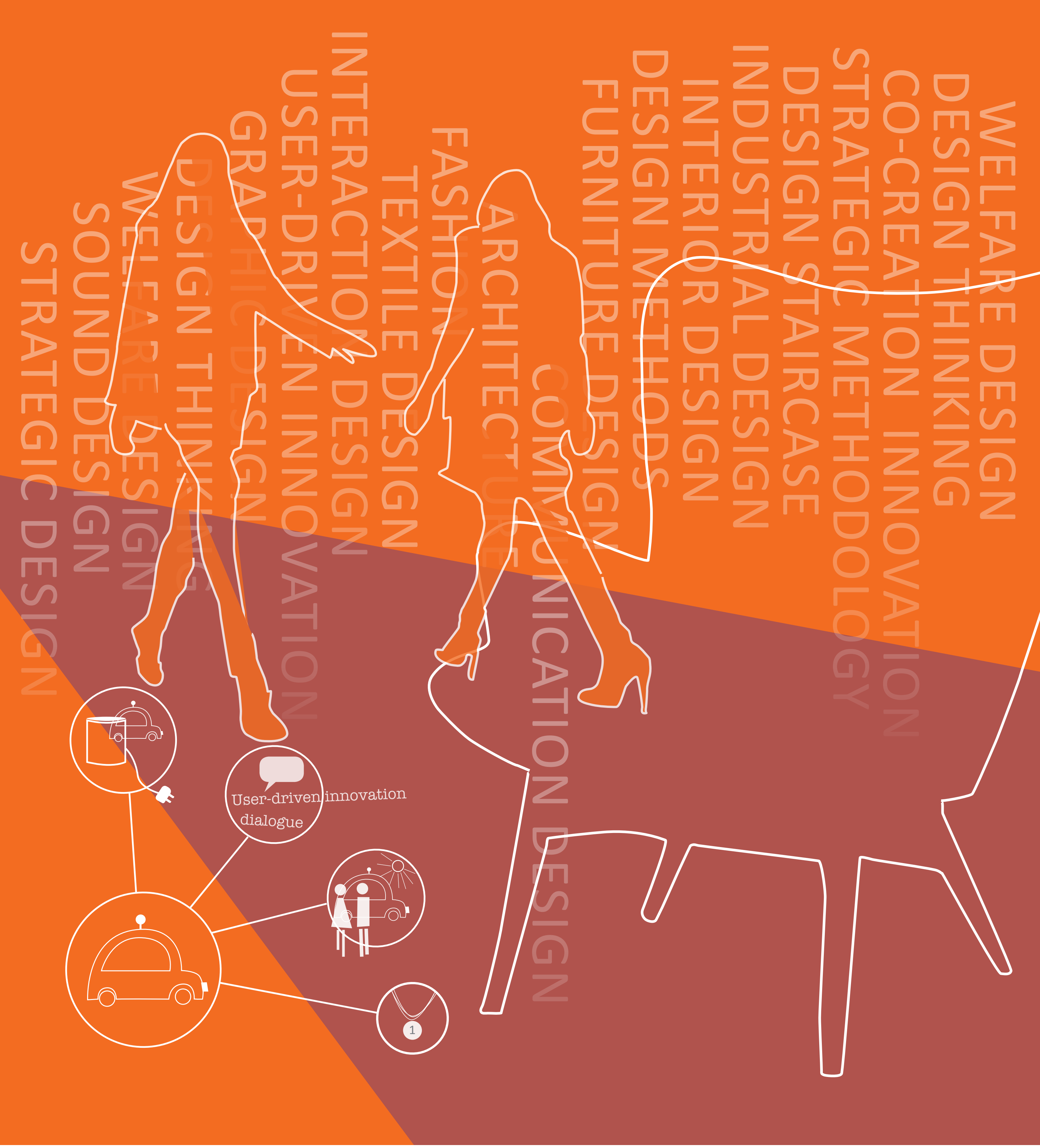

THE DESIGN AND CREATIVE INDUSTRIES ECOSYSTEM IN THE REGION OF SOUTHERN DENMARK

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REG X

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Idea & layout: Trine Vu, www.hungogvu.com

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FOREWORD

Clusters are growth engines and – under the right circumstances – can stimulate innovation, entrepreneurship and employment. A cluster is made up of dynamic ecosystems with dynamic partnerships between individual cluster participants. It is, e.g. the existence of cooperative companies and their networks to other companies, growth entrepreneurs, knowledge actors, investors and consultants that creates a strong ecosystem.

"The purpose of this analysis is to examine the strengths and development potentials in the ecosystem surrounding the emerging design and creative industries cluster in the Region of Southern Denmark and use them as a basis, to present a number of policy recommendations for the development of the cluster and its ecosystem.

The purpose of this analysis is to examine the strengths and development potentials in the ecosystem surrounding the emerging design and creative industries cluster in the Region of Southern Denmark and use them as a basis, to present a number of policy recommendations for the development of the cluster and its ecosystem.

The analysis is based on qualitative interviews with 47 central players in the ecosystem. The analysis work has been done prior to and concurrently with new and ongoing developments among cluster players and has already, prior to publication, been used as an input in the strategic work in the emerging design and creative industries cluster.

The analysis is intended for the cluster participants in the emerging design and creative industries cluster in the Region of Southern Denmark, but the model and the analysis results can also be used for cluster development in other clusters at the same or other development stages.

The model is also used for analysing the ecosystem of the welfare technology, energy efficiency and offshore clusters in the Region of Southern Denmark[1].

The analysis has been prepared by REG X (the Danish Cluster Academy) on behalf of the Region of Southern Denmark.

REG X

Region of Southern Denmark

1: For the analysis of the welfare technology ecosystem, visit:
http://www.regx.dk/fileadmin/user_upload/regx/filer/REG_X_analyser/OEkosystemet_i_den_velfaerdsteknologiske_klynge.pdf

SUMMARY

The Region of Southern Denmark aspires to generate more growth and employment in the companies in the region. Design and creative competencies can be a tool for this, and the Region therefore has a special focus in this area.

Design and creative components create growth. Analyses have shown that creative industries, including design, have had a higher economic growth than other industries in the last decade[2]. Design and creative competencies are also important parameters for a company's innovative potential. Companies using design as an integrated part of their innovation and business processes generate more value than companies that primarily use design as an aesthetic "add-on" at the very end of the innovation process[3].

To make it possible for the design and creative industries to contribute to realising the growth vision of the Region of Southern Denmark, the Region has to reinforce the emerging design and creative industries cluster in several important areas.

One of the emerging cluster's greatest strengths is the presence of knowledge actors in the area. The Kolding School of Design is one of the cluster's guiding lights. The emerging cluster is also characterised by the existence of a number of large, well-established companies that demand and use design competencies at a local, national and international level. However, these companies do not necessarily consider themselves to be design companies or to belong to a local design and creative industries cluster.

There are also entrepreneurs and small enterprises offering different types of design and creative competencies. These companies exist in many places in the region, and there seem to be regional hubs for, in particular, the creative industries in and around, e.g. Kolding, Vejle and Svendborg.

Different initiatives targeting different parts of the emerging design and creative industries cluster have been launched. Spinderihallerne (the Spinning Mill), Designandelen (Designers' Cooperation), Fremtidsfabrikken (the Future Factory) and others work, in particular, to support providers of design and creative competencies. Design2innovate (D2i) is established, e.g. in order to reinforce the use of design in companies in other industries as well as create synergy between them.

However, it is exactly the providers of design and creative competencies that should play a more central role in the emerging cluster. This applies to both companies offering design and creative products directly to consumers (B2C) and companies offering design as a strategic method for innovation and business development in other companies or in the public sector (B2B and B2P). In particular, B2B and B2P are essential for the cluster's development as a strong unit as design methods can contribute to creating growth by solving more complex problems, i.e. major global and social challenges.

Work on improving the use of design in the Region's companies should be continued and supported. Demand for design and creative competencies among the Region's companies in other industries has grown in recent years. Nevertheless, there is still a large potential for additionally increasing design use in companies in and outside the Region. At the same time, when it comes to demand for design and creative competencies, the emerging cluster should see the potential in the public sector. The public sector is namely facing challenges that cannot be solved by the public sector alone and that require making room and creating possibilities for using design and creative competencies for solving major and complex challenges.

The analysis also examines internal relationships in the emerging cluster's ecosystem. The conclusion is that the ecosystem's many participants need to cooperate more closely to achieve synergies and avoid internal rivalry in the cluster's development. Cluster participants have certain experience in cooperating on cluster development, but there is a need for a strong push when it comes to the emerging cluster's strategic development. A strong cluster organisation should lead the way of uniting the cluster participants and formulating a joint profile based on the cluster's unique resources when it comes to design and creative industries. The cluster's knowledge institutions also need to take better advantage of the potential in high geographic concentration and develop jointly a clear common identity regarding the cluster's cutting-edge design expertise.

2: Creative Economy Report, 2010, UNCTAD, Richard Florida, 2011.
3: Tether, 2005; Erhvervsstyrelsen, 2008; FORA, 2011, Jensen, 2013

RECOMMENDATIONS

The recommendations for creating a strong design and creative industries cluster have been formulated on the basis of an analysis that is primarily based on interviews with more than 40 players who have a relationship with this area. Based on this, it can be pointed out that there are three main challenges the recommendations are supposed to solve and should be considered in the context of:

- The design and creative industries cluster is an emerging cluster facing the challenge of uniting and streamlining the ecosystem's many participants and strengthening cooperation between them.

- It is still necessary to show and disclose the value of design, design processes and creative competencies concurrently with the cluster development activities that take place within the cluster.

- The cluster is considered to be an organisation driven by knowledge actors. In this connection, the role of companies needs to be strengthened and the cluster to become more of a company-driven cluster where, in particular, providers of design and creative competencies (entrepreneurs and small innovative companies) take part in shaping up the cluster.

Recommendation 1:
Reinforce cooperation in the cluster's ecosystem
If the design and creative industries are to have a substantial contribution to the Region of Southern Denmark's vision of creating economic welfare, the Region needs to reinforce the development of the emerging design and creative industries cluster. This requires close cooperation between the participants in the cluster's ecosystem, a common approach in the work on cluster development and cooperation with other relevant clusters.

Recommendations:

A Implement an involving cluster development strategy process for players in the whole ecosystem and use it as a basis for forming a smaller group of central, local and regional players who will take on the strategic leadership of all subsequent development in the emerging cluster.

B Establish an actual cluster organisation aimed at supporting the emerging cluster's development and uniting all participants in the cluster. Just like other cluster organisations, the cluster organisation must work on cluster development on behalf of the whole cluster, including, e.g. on strategy development, fundraising, national and international marketing and development of a strong cluster profile, internationalisation, matchmaking/facilitation of cluster cooperation between participants within and outside the cluster, effect measurements, etc.

C Strengthen cooperation with other relevant clusters – also across regions.

Recommendation 2:
Continue the effort on promoting design use in other industries
The continued development of the cluster's market is decisive for the cluster's growth and development ambitions.

Det anbefales at:

A Gather the newest and most successful experiences from other regions and countries which have worked on the development of initiatives for promoting use of design in companies.

B Develop and implement an updated model for how the cluster will address design use in companies in the future. The model is based on the efforts made hitherto in the region and on experiences from other regions and countries. The parties should consider the development of an actual design exchange and the extended use of a design coupon in the work on promoting design use in other industries.

C Put together strong new company-powered teams of successful regional, national and international design providers who can provide highly qualified level of design consulting and contribute to the development of design use in other industries.

Recommendation 3:
Strenghten the role of design and creative entrepreneurs in the emerging cluster
The emerging cluster needs stronger corporate participation. The providers of design and creative competencies and entrepreneurs should have a more central and active role as strategic cooperation partners, innovation actors and role models in the cluster.

Recommendations:

A Increase the visibility of the cluster's successful designers and creative entrepreneurs and their products and solutions. One way for this to happen is by means of an annual "award" for designers and creative growth entrepreneurs in the cluster.

B Strengthen the competence development of the cluster's design and creative entrepreneurs, in particular, when it comes to strategic growth-based growth partnerships with other companies, use of design methods for solving more complex tasks and general competence development in the area of professional business development.

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C Examine the possibility for establishing new forms of financing of the cluster's entrepreneurs in the design and creative industries – e.g. crowd funding or venture capital. Players are recommended to search for inspiration in other places, e.g. in the Copenhagen Municipality, which is working with new forms of financing of the creative industries.

Recommendation 4.
Build on the knowledge institutions and strengthen cooperation between them

One of the cluster's strengths is its concentration of knowledge institutions. There are many related knowledge actors present in the cluster and they often link together the ecosystem's many participants through diverse cooperation projects. The parties should build on the future efforts to develop the cluster.

Recommendations:

A Visualise the unique competencies and professional knowledge of knowledge actors at both national and international level. Strengthen cooperation between knowledge actors in the cluster and establish strong relevant strategic alliances with national and international knowledge institutions with the purpose of developing new relevant knowledge. Visualising the new knowledge to the surrounding world and disclosing it within the cluster for the benefit of the cluster's companies is decisive for the cluster's development.

B Strengthen the existing design educations so that they support the cluster's needs for knowledge and competencies. This must happen in close cooperation with the cluster's providers and the market, i.e. the business and the public sector.

C Extend the role of students in the cluster and develop a strong alumni environment around the cluster's knowledge institutions, including, e.g. enter into cooperation with the surrounding business environment on for instance higher employment rate of students. Former students can become ambassadors for the cluster and an innovative student environment can be established in close cooperation with the business.

Recommendation 5.
Take advantage of the emerging cluster's unique knowledge and competencies as a means for developing new solutions to major, complex challenges

The cluster's knowledge and competencies in the design and creative industries can be used as a means for developing new solutions to major, complex and far-reaching challenges in the private and the public sector. This way, in addition to contributing to greater design use in other industries (recommendation 2), the cluster's companies can also act as innovation partners to larger clusters of companies facing complex common challenges or to the public sector.

Recommendations:

A Map the newest knowledge on how design methods can develop innovation processes that can be used for the development of new solutions for major, complex challenges that are common for several companies in a cluster or in the public sector. The parties should incorporate experiences from, e.g. the Copenhagen Cleantech Cluster, the Health Innovation Centre of Southern Denmark and possible international experiences from, e.g. NESTA and the Helsinki Design Lab.

B Identify some major, complex challenges in close cooperation with other clusters (within or outside the region) and develop an experimental model for developing new solutions.

C Implement one or more experiments/pilot projects focusing on the development of new solutions and involve the cluster's design and creative competencies in the development of the solutions together with several other companies from other business areas or the public sector.

> **"The cluster's knowledge and competencies in the design and creative industries can be used as a means for developing new solutions to major, complex and far-reaching challenges in the private and the public sector. This way (…), the cluster's companies can also act as innovation partners to larger clusters of companies facing complex common challenges or to the public sector.**

INTRODUCTION

DESIGN EVERYWHERE

The design and creative industries are one of the strongholds of Denmark and form a significant part of the Danish economy. The creative industries employed around 108,000 persons and had a turnover of more than DKK 200 billion in both service and production in 2013[4]. The creative industries thereby stand for approx. 6 to 7 per cent of the Danish economy's overall turnover and employment. The sector is also an important exporter. Furniture, design, fashion and architecture stands for a significant part of the overall Danish exports and amounted to DKK 75 billion in 2012[5].

Design has traditionally been linked to the shaping and styling of products, and Denmark has a long and proud tradition, e.g. in furniture and industrial design. However, the use of design has developed significantly over the course of the last decades. Design has become a tool that is used in the companies' innovation processes. This has also brought about a wider understanding for and use of design. Design today spans over many disciplines, for example, industrial design, graphic design, interior decoration design, fashion and textile design, acoustic design, digital design, interaction design, communication design and service design.

Design and creative competencies create growth and innovation

Design differs from other art forms in that it has direct and specific importance for a company's growth and competitiveness. Design and creative competencies can contribute to greater growth, and the creative industries, including design, have experienced greater growth rates and have weathered the global financial crisis much better than other industries[6].

The sector's large growth potential is well understood in Denmark[7]. Design and creative competencies have proven to generate growth, and the advanced use of design is an important parameter for a company's innovative potential. Companies using design as an integrated part of their innovation and business processes generate more value than companies that primarily use design as an aesthetic "add-on" at the very end of the innovation process Companies that take advantage of advanced design methods such as, e.g. user-driven innovation and design-integrated business development and that have an actual design policy are more innovative than corresponding companies which do not engage in design activities. This means that, in particular, more advanced design methods contribute to greater innovation in the companies using them.

Companies can therefore use design at different levels in their work. The concept of "Design Ladder" is used in this connection (see box 1 for a detailed description of the Design Ladder)[8].

There are many ways to describe design. This report refers to "design" as processes and activities placed on all the steps of the Design Ladder. When we refer to design that is exclusively characterised by processes at the top level of the Design Ladder, we refer to "strategic use of design" or "design methods". The concept of "design use" is used to describe a company or a public organisation's use of design.

Design in both the private and public sector

In line with the companies' quest for answers as to "what" should be produced and not just "how", the share of companies using design strategically is steadily growing. Nowadays, there are many exciting examples of the different use of design methods in a company's innovation and business processes.

Companies like ECCO, LEGO, Grundfos and Coloplast in Denmark are famous for using design for more than just "aesthetic finish". A design-based company like ECCO has always used designers, but now also uses design competencies for finding new ways to position their concepts on the market. In a similar fashion, LEGO has long used designers for designing new versions of already existing models. However, in recent years, LEGO has made considerable efforts to build up solid user understanding as a basis for understanding better LEGO's products and for the development of completely new concepts.

Design can also create value and innovation in the public sector where demand for design is on the rise in both

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4: Kreative Erhverv og Design, Regional Udviklingsplan, Region Syddanmark, 2014. 5: Udenrigsministeriet.

6: Creative Economy Report, 2010, UNCTAD, Richard Florida, 2011.

7: Tether, 2005; Erhvervsstyrelsen, 2008; FORA, 2011, Jensen, 2013

8: The Danish Design Centre developed the Design Ladder in 2002. In connection with their involvement in D2i, SDU has worked on further refining the Design Ladder. More info is available on på www.cdcm.dk.

Box 1

WHAT ARE CREATIVE INDUSTRIES AND DESIGN?

There is no joint, international definition of "creative industries" yet, and "creative industries" does not exist as a concept in official statistical publications. The first country to systematically work with defining "creative industries" was the UK in the 1990s.

In 2002, Richard Florida defined "the Creative Class" as painters, authors, film directors, actors, musicians, dancers, photographers, etc. However, this definition is often extended to also include IT and media people, technologists, architects, teachers, natural scientists, corporate managers, financial and legal experts as well as doctors. Many people in Denmark have since worked to define and map "the creative industries", e.g. FORA, the Danish Business Authority and the Danish Building and Property Agency.

In The Creative Class Revisited from 2013, Richard Florida concludes that many of the workplaces lost in production in the USA have been replaced by creative workplaces and that creative workplaces and ways of organisation are decisive for a company's growth.

There is agreement today that the following 11 industries comprise "the creative industries": Architecture, books & publishing, design, film & video, content production & IT, arts & crafts, music, fashion & clothing, furniture & interior decoration, radio & TV and advertising. What the 11 industries have in common is that a copyright is associated with the finished product.

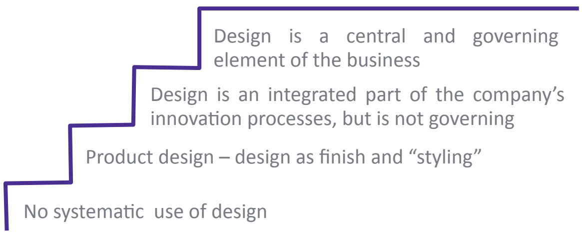
Design is part of the "creative industries", but the design concept could be difficult to define more closely. The multitude of proposals and suggestions for what design is may hamper the common understanding of the importance of design for companies.

Many people have worked on the development of the design concept. The Danish Design Centre (DDC) was established in 1978 to act as the surrounding world's access portal to industrial design in Denmark. In 2000, DDC changed its focus to also consider design as a tool for the general development of society and business. They opened a discussion that led to a radical change in the design concept. Design could no longer be considered to be exclusively a final result or a ready product created through a symbiosis of art and industry. It was just as important to focus on the process. This led to a new and broader design concept that also comprised system design, service design, co-creation and user-driven innovation.

Product development is turning more and more into a product of advanced user involvement, and developing new products and services in close cooperation with the users is paying off better and better. User and lead user involvement requires special processes that have developed to become a special part of the design industry. Specialisation in user-driven processes has gradually developed into the concept of "design thinking" where design and design processes are a central part of a company's form of management, strategy and manner of business development. Design thinking therefore refers to the way a company – in cooperation with designers within or outside the organisation – works strategically with design.

The design concept today therefore covers both the traditional understanding of design and the more advanced use where design is a sort of a development tool. This has led to the development of the "Design Ladder" (see figure below). It has four steps, and companies can find themselves on different steps depending on how systematically and at what level they use design.

The Design Ladder



SOURCE: DANISH DESIGN CENTRE, 2002.

Companies at the bottom level make no systematic use of design. Design at level two is used at the very end of the innovation process as an aesthetic "finish". Companies at level three use design as an integrated part of the whole innovation process, but design is not governing for the company. Companies at the top level use design in the whole innovation process, and design is governing and of strategic importance for the company.

The use of design as a strategic instrument for reinforcing a company's innovative and growth potential is therefore a question of moving up the Design Ladder. The development over the last many years in the area of design has not rendered superfluous the traditional use of design. Quite the reverse, the development shows that companies are gradually climbing up to higher levels after they first try out the Design Ladder's bottom step.

SOURCE: INPUT FROM, E.G. POUL RIND, UNIVERSITY OF SOUTHERN DENMARK.

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Denmark and abroad. Design methods can be used for solving more or less complex social challenges. Areas where the public sector has had solutions developed using design methods – in several countries – include climate and the environment, urbanisation, elderly people's eating habits and hospital violence. Design is also used as a method and tool for policy development[9].

The future requires more design and creative competencies

Nothing indicates that demand for design and creative methods will wane. Quite the reverse, society continues to experience a steady rise in the use of design. The development of new technology will allow changes, but this alone cannot be expected to be able to keep competitors at bay. The major global and social challenges will have decisive importance for business development and for companies' use of design. This concerns both the climate and resource challenge and the rapid population development, but also a large number of problems faced by the welfare state in our part of the world.

Companies can adapt to this development by implementing the necessary changes necessitated by global competition and government regulations. They can also view challenges as new business opportunities and use radical innovations to create new solutions. The use of design as a method is expected to come to play a decisive role in the development of new, complex solutions through new and more open innovative partnerships between companies across clusters.

A growth strategy for design and creativity in the Region of Southern Denmark

Design is also on the Region of Southern Denmark's agenda. The Growth Forum of Southern Denmark has formulated an ambitious vision of economic growth until 2020. The strategic objective is to reach a productivity level that exceeds OECD average by 10 per cent and an employment rate on a par with OECD's top 5, which corresponds to a position for the Region among OECD's 20 leading regions.[10]

The design and creative industries can contribute to realising Southern Denmark's vision of generating economic welfare. The Region has a large untapped potential

when it comes to design and the creative industries. There are strong design-related knowledge institutions headquartered in the Region, and the Growth Forum has launched a number of initiatives aimed at promoting design as innovation and growth driver and at increasing turnover in the creative industries. Such initiatives include, e.g. D2i, Designandelen (Designers' Cooperation) and Fremtidsfabrikken (the Future Factory).

At the same time, the Region of Southern Denmark is also confronted with challenges in this area. Despite growing demand, Southern Denmark has too few companies using design for strategic and business development. At present, 2/3 of the companies in Southern Denmark are seeking competencies in the area of design[11]. This figure was significantly lower only a couple of years ago. Southern Denmark is also the region in the country where the share of the creative industries in the economy is second to last among all other Danish regions[12].

This analysis

The purpose of this analysis is to examine the strength of the emerging design and creative industries cluster in the Region of Southern Denmark and to map out opportunities for developing the cluster's ecosystem. This is aimed at contributing to the cluster's ability to develop its position from an emerging to mature design and creative industries cluster. Yet another objective is to contribute to realising Southern Denmark's vision of generating growth and employment.

The analysis has been conducted based on a model for cluster ecosystems that, in turn, is based on studies of successful ecosystems in, e.g. the USA, including in Boulder, Chicago, the Silicone Valley, North Carolina, Austin and Seattle[13]. The strength of an ecosystem manifests itself in a close network and cooperation between the participants in the ecosystem who consider each other to be part of the same food chain.

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"Nothing indicates that demand for design and creative methods will wane. Quite the reverse, society continues to experience a steady rise in the use of design. The development of new technology will allow changes, but this alone cannot be expected to be able to keep competitors at bay.

9: Design for Public Good, 2013.

10: Erhvervsudviklingsstrategien 2012-20, Region of Southern Denmark.

11: Kreative Erhverv og Design, Regional Udviklingsplan, Region Syddanmark, 2014.

12: Handlingsplan 2012-13, Region Syddanmark.

13: Napier & Rosted, 2012.

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The strength of and challenges to the ecosystem for the design and creative industries cluster in Southern Denmark have been mapped using qualitative interviews with participants in the ecosystem, including private companies, public players, knowledge institutions, consultants, investors and others. In this context, we have conducted 46 interviews with key players in the ecosystem in 2013 and 2014.

The analysis work has been done prior to and simultaneously with new developments in the cluster and has already, prior to publication, been used as an input in the strategic work in the emerging design and creative industry cluster. The players met for the first time in the autumn of 2013 and have since attended together a number of workshops to discuss and further develop the cluster's potential.

The analysis model: An ecosystem
An ecosystem is the existence of diverse players in a cluster – all of whom support growth across the cluster's companies. The ecosystem reflects the network and cooperation among participants in the cluster, including companies, educational institutions, knowledge actors, public institutions and authorities, investors and consultants[14].

A cluster's ecosystem
According to the ecosystem's model (cf. figure 1), strong clusters have an ecosystem comprising:

- A market for the cluster's products and services. A cluster's market is driven by private or public demand or by both.
- Major cooperative companies that act as flagships, cooperate and reinvest their success into the cluster This contributes to involving other companies in possible growth developments.
- Entrepreneurs and small innovative companies who generate renewal in the cluster and contribute with new knowledge and innovation in various ways.
- Relevant knowledge actors who bring new knowledge to the cluster for the benefit of companies in the cluster.
- Investors who invest risk capital into the companies in the cluster. There should preferably be strong involvement of private venture investors.

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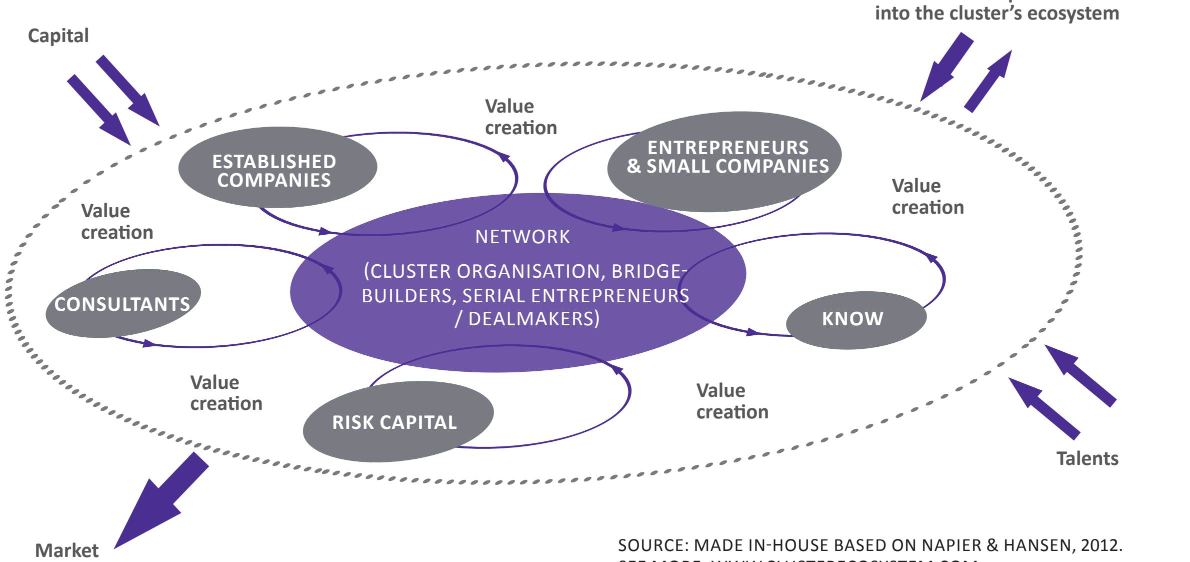
FIGURE 1 A CLUSTER'S ECOSYSTEM
Value created in a cluster



SOURCE: MADE IN-HOUSE BASED ON NAPIER & HANSEN, 2012.
SEE MORE: WWW.CLUSTERECOSYSTEM.COM

14: Napier & Hansen, Ecosystems for Scalable Firms, 2012.

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- Consultants who support the companies in their development and cooperate on innovation. Consultants in Denmark are often lawyers, auditors, authorised technological service institutes (GTS institutes), business development centres, etc.

- Strong network between the participants in the ecosystem. The network can be facilitated by different private and public players. Private players include, e.g. serial entrepreneurs and dealmakers, whereas the public players are often cluster organisations and different types of network organisations.

The work with the cluster's ecosystems assumes that the greater the insight the cluster's players have in each other and their respective roles and incentives in the cluster, the greater the potential for further development of the cluster's strengths and challenges. All participants in the ecosystem contribute in different ways to generating growth in the companies. However, what is most important is the network and cooperation between them. Participants in the ecosystem have been weighted the same even if some of the players – e.g. large, established companies and entrepreneurs – are decisive for the strength of the cluster and can therefore be devoted more attention in the analysis. The ecosystem's model has been developed based on studies in the USA after customisation to Danish conditions. For example, unlike Denmark, there is not a particularly strong public involvement in the development of clusters and growth companies in the USA.

> **"The epicentre is often a city or a region, but this is not defining in any way. An epicentre may be anchored in one city, yet the cluster itself can work with and attract companies from all over the country and from abroad. A strong cluster is open, cooperates and has development relations with clusters and markets in the rest of the world.**

Important cluster concepts

A cluster
A cluster is a concentrated group of companies situated close to each other by choice and working on a strategic level with other companies, public authorities and knowledge institutions because this renders competitive advantages which the individual company cannot obtain on its own[15]. A cluster's strength may vary. We can therefore not talk about a strong cluster just because its companies are situated close to each other. It is first when the participants in a cluster create, develop and take advantage of the value chain's potential together that we can describe a cluster as strong.

The geographic concentration of the participants in the ecosystem (companies, knowledge actors and others) can be described as the cluster's epicentre. The epicentre is often a city or a region, but this is not defining in any way. An epicentre may be anchored in one city, yet the cluster itself can work with and attract companies from all over the country and from abroad. A strong cluster is open, cooperates, and has development relations with clusters and markets in the rest of the world.

Cluster organisation
A cluster organisation facilitates cooperation between the participants in the cluster's ecosystem in order to strengthen and take advantage of the existing synergies among the participants. Many clusters have a cluster organisation the different participants in the cluster can become a member of. A cluster organisation defines the cluster's profile and visualises the cluster's cutting-edge competencies as well as industry- and knowledge specialisation. Cluster organisations also cultivate new business possibilities and cooperate for the benefit of the participants in the cluster.

15: REG X' cluster definition.

A MARKET FOR THE CLUSTER'S PRODUCTS AND SERVICES

All clusters are characterised by demand which serves as a driver for the development of the cluster's products and services. A competitive cluster usually targets global demand. A solid understanding of the cluster's market is decisive for the realisation of the cluster's growth potential, the development of its ecosystem and its positioning with regard to the surrounding world.

Based on interviews with a large number of different buyers of products and services of the design and creative industries cluster in the Region of Southern Denmark, the design and creative industries cluster is assessed to be driven by demand from three main target groups:

Private consumers (B2C)
The design and creative industries cluster in the Region of Southern Denmark includes a number of designers and creative companies that offer different forms of creative products and services in the area of clothes design, media and art. What is common for these companies is that their market is driven by demand from private consumers in and outside Denmark. The B2C market constitutes an important part of the cluster's market.

Companies (B2B)
Another group of the cluster's customers is made up of large companies or small and medium enterprises (SMEs), e.g. Lego, ECCO, FLEXA and Easy Food. These partnerships are known as B2B relations as design providers cooperate directly with the customers on design use.

Large and medium companies use the cluster's knowledge of design methods and thinking to generate innovation, product development and other forms of business development (a more detailed description of the major companies in the cluster is available below). The introduction to design methods has been a decisive factor for the commercial survival of some of the companies. The company FLEXA in Hornsyld is an example of a company in Southern Denmark that has made a successful turnaround through its close cooperation with a Swedish design firm. FLEXA's focus on design methods as a competitive parameter has transformed it from a company near bankruptcy to a global success (cf. box 2 on p. 14).

Since design methods can reinforce a company's work with innovation and renewal, interested parties have launched initiatives which are supposed to reinforce demand for design methods and thinking in companies across different industries in the Region of Southern Denmark. Specific, publicly financed programmes offered via, e.g. D2i

"Interviews with design providers indicate they take a strong interest in being involved in the activities for propagation of design methods and design thinking in companies in other industries. Design providers have an obvious opportunity to bring their main competencies and experiences into play and simultaneously get in touch with potential customers.

and Designandelen are aimed at promoting design use in companies and thereby reinforce their innovative potential and growth. The objective has been toinspire companies in Southern Denmark to move up the "design ladder" by taking advantage of design, while simultaneously increasing the strategic use of design.

Based on interviews with companies which have used the programmes, these are assessed to have contributed to a greater understanding among companies in Southern Denmark of how design methods can strengthen them and improve their growth opportunities. There is a number of good examples of companies which have improved the understanding of their markets, developed new solutions or adapted existing products and services by means of design methods. The good examples are typically young companies with management that is open to embrace changes brought about by the use of design[16].

The growth of the importance of innovation and design for companies' competitiveness is also reflected in corporate organisation and the competencies necessary in the companies' management. There are good examples of companies where the use of design methods has become an integral part of the company's innovation processes and the companies focus on upgrading their employees' competencies so that they can use design methods for solving different problems. Some companies have began to hire designers and appoint design teams in their development and innovation departments, and more companies are under way with or are getting ready for work with multidisciplinary innovation teams.

An example of such a company is Easy Food, which is Denmark's largest producer of convenience foods. The company, which is headquartered in Kolding, has 110 employees.

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16: Interview with Povl Rind, SDU. Former Head of Research of the Kolding School of Design and representative of SDU in Design2Innovate.

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Easy Food has used design methods to rethink its products and map out a course for the company's strategic development and its position in the value chain.

Another example is Viking, a company that develops maritime and offshore rescue equipment for safety at sea. The company has 1800 employees, 350 of whom work at the headquarters in Esbjerg. Viking has started to use design methods for the development and customisation of its products.

Design is also being incorporated more and more into the companies' strategic management where design methods have become an important factor. Large companies have begun to appoint Chief Design Officers (CDO) on their top management teams.

The transformation of innovation and more radical innovations into important competition parameters is scarcely a fleeting phenomenon, but rather a condition that has come to stay. Seen in this light, it is still necessary to work on reinforcing demand for design method and design thinking among companies in the Region of Southern Denmark. Barriers to the spread of design as a method include, for example, lack of insight at the company's management as to what design is and how design can contribute to innovation and growth in the company. This is often a problem in companies that have many years under their belt and companies where the management has no understanding for the opportunities offered by strategic design.

The continuation and further development of the efforts for reinforcing design use in the companies in the region has a lot of potential. This is possible by means of closer cooperation with design providers from within and outside the cluster. Interviews with design providers indicate that they take a strong interest in being involved in the activities for propagation of design methods and design thinking in companies in other industries. Design providers have an obvious opportunity to bring their main competencies and experiences into play and simultaneously get in touch with potential customers. There is also a positive effect for the cluster as a whole in appointing design providers to be "design ambassadors" as the design providers may come to subscribe to the cluster and influence its development more this way. This can be complemented by a simultaneous reinforcement of the competence level of the cluster's members in Southern Denmark and supplemented by design providers and design firms outside the region.

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"Design is also being incorporated more and more into the companies' strategic management where design methods have become an important factor. Large companies have begun to appoint *Chief Design Officers* (CDO) on their top management teams.

Box 2

STRATEGIC USE OF DESIGN LEADS TO DECISIVE TURNAROUND FOR A FAMILY-OWNED DANISH FURNITURE COMPANY

After going bankrupt, Danish children's furniture maker FLEXA launched a strategic design process at the beginning of 2012 as an important part of the company's turnaround strategy. The process proved to be decisive for the company's first growth after six consecutive years of falling revenues in 2013.

FLEXA was established in 1972 as a traditional children's furniture producer in Hornsyld outside Horsens. FLEXA developed well until 2007 when it was affected by the global financial crisis. According to Carsten Dan Madsen, who was appointed company CEO in February 2012, the original design was instrumental in the company's success, but year-long neglect of product development caused the company to come under substantial pressure in 2007.

Strategic designers changed FLEXA's business mindset

FLEXA started cooperation with a design firm from Sweden, BAS, which launched the strategic design process that would eventually lead to FLEXA's turnaround. BAS was selected as FLEXA's cooperation partner because of its enormous success and experience with similar jobs done for major retail chains in Sweden, including IKEA.

BAS introduced a strategic change process and a new mindset in the company. All employees were invited to take part in the process. For example, BAS organised a workshop with, e.g. designers, pedagogues and nurses who met to generate ideas for FLEXA's product range. As a result of the process, the core of FLEXA's products nowadays is currently described as a modern, Scandinavian design, and product development and innovation are decisive for the company's development. A secondary effect of this was the addition of a baby collection to FLEXA's product range.

FLEXA realised that product development and continuous focus on innovation mean everything for the company's success. The new strategy has therefore comprised the involvement of external designers into product development. Cooperation with external designers has resulted, for example, in an award-winning FLEXA Baby high chair, which was awarded a Red Dot Design Award and has contributed to opening new doors for FLEXA in both Denmark and abroad. For example, FLEXA's new collection has been exhibited in BabySam and Illums Bolighus.

Extensive strategy process

In addition to the notable redevelopment of its product range, FLEXA's strategy development also focused on adapting the organisation to the tougher international competition. The company shut down its factories in Asia, and all production was concentrated in Estonia. This has strengthened FLEXA's position on the Chinese market as the fact that all of FLEXA's furniture is now assembled in Europe has led to a seal of approval among Chinese consumers.

FLEXA has also made some new and fresh appointments on its HQ management team. The new CEO, Carsten Dan Madsen, came to FLEXA in 2012 after occupying executive positions at both Tvilum and KOMPAN. FLEXA has also rearmed itself with a new Product Development Manager (Kristine Schmidt, from LEGO), a new Marketing Manager (Louise Witting, from KOMPAN), a new Retail Manager (Kevin Chan, from 7eleven) and a new Sales Manager (Lars Dalsgaard, from Innovation). The company has also appointed new managers of the factories in Estonia (Jens Gammelby, from Tvilum) and of the sales organisation in Asia (Brian Tuson who comes from a position as CEO of IKEA Hong Kong).

The design process FLEX implemented by FLEXA has been an eye-opener for the company. According to Louise Witting, the strategic design process has made FLEXA aware of who they are and what they should focus on. It has been of decisive importance for the company's turnaround. By introducing design methods at all levels, FLEXA has gained a completely new mindset, which has been decisive for improving the company's innovative potential and competitiveness.

At present, FLEXA has 375 employees, 60 of which in Denmark. Production Manager Kristine Schmidt has cooperated, for example, with Designandelen on finding designers for the work on the new strategy – and Marketing Manager Louise Witting has subsequently taken part in D2i's "Design Introduction".

SOURCE: INTERVIEW WITH FLEXA'S CEO CARSTEN DAN MADSEN AND MARKETING MANAGER LOUISE WITTING.

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The public sector (B2P)
The public sector has also transformed into an important part of the market for design solutions in many places throughout Denmark – and also in many of the Danish regions, including the Region of Southern Denmark. There is more and more demand for and use of design methods and design thinking by players in the public sector, e.g. municipalities and regions. As a result, some of the cluster's design providers are about to specialise in partnerships with the public sector. Such partnerships can be designed as B2P (Business to Public).

The reason for the growing demand for design in the public sector is that the public sector is facing major challenges that require the development of completely new solutions in areas such as welfare, environment, climate, and food. The welfare state nowadays is under pressure from, e.g. an ageing population, new and expensive treatment options, growing requirements for individual and tailored services, and challenges to the financing of the public part of the welfare state by taxes. The pressure on the welfare services also translates into pressure on all companies – both public and private – that provide welfare services. However, it simultaneously creates new business opportunities for the companies that can create new and better welfare solutions at the right price.

These are complex problems neither the public, nor the private sector can handle alone. This requires cooperation and close dialogue between the private and the public sector as well as user involvement. This also requires new working methods and competencies that do not necessarily exist in the public sector nowadays. Strategic designers can play an important role here as both facilitators of a development process and as developers of new solutions in close cooperation with other players.

Partnerships between companies and the public sector are known nowadays as public private innovation (PPI). We have many experiences with PPI in Denmark, but far from all PPI partnerships are successful and far from all of them create commercial solutions.

In the Region of Southern Denmark, it is, in particular, the Kolding Municipality that has taken steps to strengthen the work on developing usable and sustainable solutions in the public sector in close cooperation with the private sector. Design plays an important role here. The Kolding Municipality aspires to incorporate design into all aspects of the Municipality's services, which is why the Municipality has developed its own design competencies via an internal design corps in the Municipality. (See box 3 for a description of design use in the Kolding Municipality).

BOX 3

DESIGN IN THE KOLDING MUNICIPALITY

The Kolding Municipality has been giving design a priority for years. In 2012, the Municipality drew up a design strategy which described design as the focal point of municipal growth. The strategy is a vocalisation of the Kolding Municipality's desire to become a European design city, with design permeating all ways of generating municipal growth and where service design and design processes are incorporated into all aspects of the services provided by the Municipality.

In 2013, the Municipality established a design secretariat with four employees in aid of the strategy. The head of the secretariat, Design Manager Ulrik Jungersen, is considered to be the first municipal Head of Design in Denmark (probably even in the world). The secretariat's job is to support the Municipality's strategy and ensure internal coordination of all design-related efforts at the Municipality. The design secretariat offers, e.g. feedback to municipal employees who want to conduct a design process. The secretariat also provides assistance with project applications where design is included as a method. In addition, the secretariat is also responsible for the training of 30 municipal design and innovation consultants who are supposed to facilitate design processes in the municipality.

The design secretariat's work until now has resulted in a number of specific activities. Children have been involved in the development of a playground in a municipal kindergarten. The Municipality has established a welfare workshop where citizens, municipal employees, experts and representatives of other industries develop and test new ways of meeting citizens in the municipality. A new health centre is on the way. It is supposed to provide the framework for the Municipality's healthcare, health promotion and parts of rehabilitation. The centre will be built in close proximity to the Kolding Hospital. The Municipality, in cooperation with local design bureau MADE, has involved users and employees in the work on furnishing and fitting out the new health centre, which is expected to be operational at the end of 2014.

In 2013, the Kolding Municipality applied design processes in the development of tender documentation for a new nursing home that is publicly financed, but privately built and run ("Vonsildhave"). The tender documentation was prepared using a design process where the Municipality, in cooperation with the innovation consultants from KL, involved users, relatives and employees for identifying the needs for functionalities in the new nursing home. The contract was awarded to a private Danish consortium that met all aspects of the tender requirements – construction, care and nursing for rent. The project is considered to be among the first "360 degree" PPP (public private partnership) projects in Denmark where a private consortium is in charge of all functions in connection with the construction and operation of a municipal nursing home.

SOURCES: INTERVIEW WITH THE KOLDING MUNICIPALITY'S CHIEF EXECUTIVE, RIKKE VESTERGAARD, AND THE HEAD OF DESIGN OF THE KOLDING MUNICIPALITY'S DESIGN SECRETARIAT, ULRIK JUNGERSEN.

Conclusion

Market and demand play a decisive role for the development of each and every cluster.

There is demand for the products and services of the emerging design and creative industries cluster from private consumers and companies as well as the public sector. All three markets are important for the development of a strong design and creative industries cluster.

Demand for design methods in the Region of Southern Denmark is characterised by the fact that the companies in need of design methods are located in the region. The large companies that demand design methods therefore contribute to the development of the cluster's suppliers of design methods.

The work on promoting demand for design methods among individual companies has had a positive effect. However, it is still necessary to further develop the efforts for reinforcing design use across large company groups and industries. There is still a need to reinforce the use of design methods as an element in the development of new solutions in the public sector. The Region of Southern Denmark has a number of formal cluster organisations that represent the large regional business concentrations and positions of strength, including CLEAN (the former Lean Energy Cluster), Offshore-energy.dk and Welfare Tech. These cluster organisations can contribute to facilitating access to companies in their respective clusters.

As regards the future development of the emerging design and creative industries cluster, we assess that there is a large potential in the work on promoting design use in the areas where the region has strong positions. Design methods here can make a difference and raise the cluster's overall potential for innovation and development of solutions to major and complex challenges for large groups of companies. In this way, the creative competencies in the design and creative industries cluster can promote innovation, business development and innovation in areas that are unique for the Region of Southern Denmark.

Access to regional and municipal demand may also play an important role for the development of the emerging cluster. In particular, if the public sector takes initiative for using design methods as a tool for new solutions in the public sector. The Kolding Municipality is considered to be a pioneer municipality in this area.

"As regards the future development of the emerging design and creative industries cluster, we assess that there is a large potential in the work on promoting design use in the areas where the region has strong positions. Design methods here can make a difference and raise the cluster's overall potential for innovation and development of solutions to major and complex challenges for large groups of companies. In this way, the creative competencies in the design and creative industries cluster can promote innovation, business development and innovation in areas that are unique for the Region of Southern Denmark.

BIG COMPANIES WHICH ACT AS FLAGSHIPS, COOPERATE AND REINVEST THEIR SUCCESS INTO THE CLUSTER

Strong clusters often include one or more well-established and successful companies that cooperate with other companies in the cluster, act as flagships, shape and contribute to the development of the respective cluster. In the light of this, we have examined the presence and involvement of well-established companies in the emerging design and creative industries cluster for the purpose of identifying possible flagships and driving forces in the cluster's development.

To assess the existence of major flagships in the cluster, we have examined first if there are any large, well-established companies among the providers of solutions and products in the area of design and creative industries. There are "large and famous" companies, in particular, in the creative industries offering B2C solutions – e.g. Georg Jensen Damask, LEGO, Nümph and Bianco sko. However, these companies are not strongly involved in the cluster and its development at this time.

It has also been examined if there are large well-established companies among the companies that work with design as a method, i.e. B2B solutions. It has not been possible to investigate this with quantitative data. However, a quick review[17] of the Danish Design Association's (DDA) 120 members indicates that very few DDA members are physically located in the Region of Southern Denmark (two out of 120 companies). The other DDA members are concentrated in the areas of Copenhagen and Aarhus. Even if DDA is Denmark's largest independent professional organisation which comprises everyone who works with design for a living and therefore counts many of the major design providers among its members, DDA does not necessarily include all relevant design and creative companies in the cluster. Nevertheless, this is an indication that the cluster does not comprise many large consultants and suppliers of design methods (consulting firms).

This is why there is a lack of a certain critical mass of major flagships when it comes to providers of design and creative competencies, and the major providers who are currently part of the cluster are not involved in the cluster's development. A reason for that could be that providers of design and creative competencies have not been considered before to be part of the main focus of the cluster organisation. However, based on our interviews, we assume that companies have relatively high motivation to act as flagships as the providers form the core of the design and creative competencies and are therefore strategically dependent on the strength of the design cluster.

The question is if there are other obvious candidates for flagships elsewhere in the cluster. In connection with the assessment if there are any large, well-established companies present in the cluster, everyone familiar with the emerging design and creative industries cluster in the Region of Southern Denmark think of companies like LEGO and ECCO. Both companies are exciting examples of large, globally oriented Southern Danish companies that have been using a broad range of design methods in their innovation and business processes for years. As described in the section about the cluster's market, there is no doubt that large global markets are important as buyers of the cluster's design solutions and that they contribute to establishing a focus on design in other companies by showing them and telling them about the value of design. (See box 4 for a more detailed description of design use in LEGO).

LEGO and ECCO are also important for the cluster's development in other contexts. In addition to acting as a market for the cluster's products and services, large, well-established companies also function as nesting boxes for the development of new entrepreneurs in the cluster. Many of the new companies in the cluster are spin-outs from LEGO, which typically means that former LEGO employees have chosen to start up their own companies in the local area. They often cooperate closely with LEGO on design development until they eventually find other customers. Examples of such spin-outs are Developa (strategic design) and Sennov Design (web design). The vast majority of the entrepreneurs in Spinderihallerne are former LEGO employees.

Both companies take co-responsibility for the cluster's development. For example, both LEGO and ECCO hire students from the cluster's knowledge institutions, take part in cooperation projects and have continuously taken advantage of the "innovation camp" organised, e.g. by the Kolding School of Design in aid of the development of new concepts. By developing local and attracting external talents, the two companies also support the development of a creative and professional design-related environment. For LEGO, it is important to have a local design cluster as it contributes to creating a creative environment that LEGO's employees can be a part of. This creates job opportunities for LEGO's employees who want to stay in the local area, yet try out something else. Based on interviews with ECCO, ECCO is also assessed to be interested in having access to a design cluster in the local area. The reason for that is, for example, the access to testing new, technological solutions in new, creative companies. The cooperation with knowledge institutions in

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17: Review of DDA members conducted in February 2014.

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the local area is also important here – including, in particular, the Kolding School of Design.

Both LEGO and ECCO are also on D2I's board of directors, and LEGO's representative is the board's chairman.

Even if both LEGO and ECCO are very active and visible in the cluster and reinvest their success in various ways for the benefit of the other companies in the cluster, we assess, based on the interviews, that the two companies are not strategically dependent on a local design and creative industries cluster.

This is primarily owing to three conditions that may have major or minor importance for the companies:

First of all, large companies primarily represent demand in a cluster. It is primarily demand that attracts their interest and draws them to the cluster. They play an important role as buyers of the cluster's design and creative competencies.

In addition, users of design represent very different industries, e.g. toys, clothing and food. The companies consider themselves to be, e.g. a footwear producer using design and a toy producer using design. This is why, on the face of it, putting them together in a cluster that does not traditionally represent their core interests may look like a challenge – even if they are strongly interested in networking and cooperating with companies from other industries for the purpose of discussing and developing their design use. Conversely, they are interested in more related clusters oriented towards their industry/main product. For example, Lego and the LEGO Foundation are actively involved with the establishment of a "Capital of Children" whose purpose is to develop a toy cluster centred in Billund.

Finally, the companies are global. They use and attract the best designers and competencies from all over the world. For example, when LEGO recruits new employees and cooperation partners, regional designers and design providers are not necessarily given a priority. The company seeks the best design competencies globally and is not necessarily dependent on a cluster in the local area. However, their attitude is that it is certainly positive that such a cluster does exist.

So even if a number of the global companies are very visible and valuable in the cluster, their main focus and motivation seems to be the role as buyer of the cluster's competencies and knowledge rather than to act as flagships and commit to creating a strong design and creative industries cluster. Nevertheless, such companies are important in the cluster's ecosystem. Not just as a market. As discussed here, their existence has a number of derived, positive effects for the cluster. Their role in the cluster should therefore be maintained and developed additionally in close cooperation between the cluster organisation and other cluster members for the benefit of both the large companies and the cluster. However, it is not only among these companies that we can identify possible candidates for a strong driving force for the cluster's development. This is why it is reasonable to investigate other company groups for possible design buyers.

The area also has a large undergrowth of SMEs, 2/3 of whom use design, thereby forming an important target group for the cluster's products and services. Companies like Easyfood, Viking and FLEXA have used different types of design consulting offered by the cluster's consultants, getting inspiration for using design methods in their idea and innovation processes. This has led to different forms of business development and innovation. The assessment based on the interviews is that there are no pronounced flagships among the SMEs. The reasons are as mentioned above. However, there is no doubt that the design market still needs maturing, i.e. propagating design maturing activities for the purpose of spreading design use among the region's SMEs. A design cluster in the local area plays an important role for this purpose, and it can be advantageous, e.g. to have more systematic visualisation of success stories where knowledge that design methods have made a difference for the company's bottom line and competitiveness is used for illustrating value created by means of design use.

> **"Even if both LEGO and ECCO are very active and visible in the cluster and reinvest their success in various ways for the benefit of the other companies in the cluster, we assess, based on the interviews, that the two companies are not strategically dependent on a local design and creative industries cluster.**

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Conclusion

Strong clusters usually include one or more large, well-established companies acting as flagships and a driving force in the cluster's development.

The emerging design and creative industries cluster includes a number of large companies that demand the cluster's solutions locally. However, for different reasons, the companies do not act as a driving force for the cluster's development or as flagships for the emerging cluster. Even if the large global companies in the cluster do not necessarily see a dire need for a local design cluster, their presence in the region is nevertheless a decisive parameter for its development.

The reason why is that they cooperate with the others. The reinvestment of their success is decisive for the cluster's development, just as the close strategic cooperation between the large, well-established companies and the young companies can give an additional boost to the cluster's development. Large companies are important in the cluster's ecosystem, but they are not an obvious driving force for the part of the cluster that forms the cluster's competencies. As regards the cluster's strengthening, it is decisive to identify other "locomotives" that can contribute – together with companies such as, e.g. LEGO and ECCO – to orienting the cluster's development towards a more company-driven cluster rather than a cluster driven by knowledge institutions.

In the light of this, in order to be able to identify the cluster's flagships and driving forces, the cluster organisation has to reassess its focus on the cluster's members. There should be greater involvement of the design and companies into the cluster's development since their motivation to build a strong cluster is big enough for them to endorse the cluster publicly and contribute to it as a flagship and engine. Until now, these companies have played a minor role in the cluster organisation. The challenge here is that many of these companies are new and recently started and that they are yet to develop as companies that could assume the role of "cluster engines". The presence of design and creative industries providers should be used more efficiently for the benefit of the cluster's development.

BOX 4

DESIGN USE IN LEGO

LEGO is the third largest toy manufacturer and one of the most famous brands in the world. With a total turnover of DKK 23.4 billion in 2012, it is one of Denmark's most successful companies. At present, the company has some 10,000 employees all over the world, and its products are sold in not fewer than 130 countries. LEGO is particularly famous for developing children's creativity through learning through play, and the company currently produces toys, experiences and training materials based on the famous LEGO building brick. The LEGO brick has been elected toy of the century twice – first by Fortune Magazine and then by the British Association of Toy Retailers.

LEGO has used design since the very beginning, first only for shaping the LEGO brick. However, LEGO's design use has evolved to be much more complex now. The way LEGO develops new products is driven by a sophisticated use of design. Concept and product development are localised mostly at the headquarters in Billund where researchers map out the newest design trends based on intensive research. LEGO's creative core is made up of 164 designers from 22 different nationalities, most of whom are graduates of design, art or architect schools all over the world.

The essence of the design process is systematic observation of both children and parents by a staff of designers, engineers and experts in, e.g. anthropology, psychology and marketing whose objective is to get acquainted with, e.g. playing habits, family patterns and housing conditions. Among other things, LEGO invites children from kindergartens and schools all over Billund to observe how they play. As a result of the systematic process and user involvement, LEGO is always capable of developing new concepts and products that are superior to those of many of its competitors.

Because of its great success and tradition of using design, LEGO is considered by many to be the leading flagship in the area of design in the Region of Southern Denmark. LEGO is not only represented on D2I's board of directors, but its Head of Product Innovation and Marketing, Ulrik Gerow, is the board's chairman. In this way, LEGO is up to date on what happens in the cluster and contributes to putting design on the agenda of the companies in the region.

SOURCES: INTERVIEW WITH ULRIK GERNOW. LEGO'S ANNUAL REPORT FOR 2012.

ENTREPRENEURS AND SMALL INNOVATIVE COMPANIES WHO GENERATE RENEWAL IN THE CLUSTER AND CONTRIBUTE WITH NEW KNOWLEDGE AND INNOVATION IN VARIOUS WAYS

Entrepreneurs and small innovative companies can play an important role as growth and innovation drivers in the cluster. They are faster and more agile at commercialising new technology and innovative solutions than larger companies. New, small and innovative companies can also be a result of the commercialisation of new knowledge by the cluster's knowledge institutions and larger companies.

The emerging design and creative industries cluster includes a number of entrepreneurs and small, innovative companies. Entrepreneurs and small, innovative companies seem to play different roles in the cluster, but what many of them have in common is that they provide design and creative solutions. A number of them are also particularly innovative and forward-looking (see examples of providers in box 5). The likely reason why providers are typically small and young companies is that the design and creative industries are relatively new industries. Many of the companies have been established in the last 10 years.

Small and young companies work with design and creativity in different ways – e.g. clothes design, graphic design, design methods and strategic design – either directly to private consumers (B2C), to other companies (B2B) or to the public sector (B2P). Their role in the cluster is to develop design and creative solutions for private consumers or companies/organisations, and they can be described as the cluster's actual carriers of cutting-edge competence. Based on this, they should be considered key players in the cluster's ecosystem, and their presence and continued development is decisive for the development of a strong design and creative industries cluster.

> **"There should be greater involvement of the design and companies into the cluster's development since their motivation to build a strong cluster is big enough for them to endorse the cluster publicly and contribute to it as a flagship and motor.**

As long as the ambition is to use the cluster to propagate design methods in the region and make them an important part of the emerging cluster's DNA, the interviews indicate a need for reinforcing the critical mass of companies that can work with design methods. As mentioned before, we have conducted a review of the location of the members of the Danish Design Association (DDA) in Denmark. Only few of them are located in the emerging cluster's centre around Kolding and Vejle. Even if DDA's member database does not include all design and creative industries companies in Denmark, this could indicate that the cluster's share of companies that can work with design methods is small and needs reinforcement. This has also been confirmed in the interviews.

Reinforcing the critical mass may include attracting more external providers of design methods, e.g. by making design agencies commit to the cluster's activity, e.g. also to market development. However, it may also include upgrading of the competencies of existing companies in the cluster, i.e. development of the companies' knowledge and methods in strategic design. This may result in the extension and development of the design concept among providers who otherwise work with a simpler design concept, cf. the Design Ladder. For example, a company may be capable of supplementing website development with more strategic corporate consulting. The extension of the design concept may also lead to greater cooperation of the company with Design Denmark (the former DDA), DDC and other players who work on the development of design methods in Denmark.

The other category of providers is found more in the creative industries that address private consumers directly by developing, e.g. fashion, games, applications and media. This group of companies is important in its role as a foundation of the design and creative industries cluster – as innovators, growth drivers and job creators in the region.

The interviews indicate that creative companies are an important part of the cluster's DNA, but are not visible enough in the cluster. A company like, e.g. Panuu sells fashion wear on large global markets, but is not necessarily known in its "own backyard". The success, network and experience of these companies could be a constructive building block in the development of the cluster, but many of them are not aware of the cluster's existence even if they themselves are part of it.

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Another characteristic of the cluster's entrepreneurs and small innovative companies is their growth pattern. Based on the interviews with the companies and their environments around the cluster, the assessment is that many designers and creative companies are one-man businesses that often choose to remain small. Design companies and creative companies do not necessarily possess all required competencies in-house, but instead enter into alliances and strategic partnerships with other companies on solving more or less complex tasks. This can be described as network-based growth and is typically a conscious choice and a strategic alternative to hiring new employees. (See box 6 for a more detailed description of network-based growth based on figures from Fremtidsfabrikken in Svendborg.)

The advantage of network-based growth is that companies can scale their business up and down relatively quickly, which helps them remain flexible also in, e.g. times of crisis. Network-based growth can also have a positive effect on the nature of the companies' jobs. The network allows companies to use each other as supplementary sparring partners and levers and thereby solve more extensive and complex tasks than if they worked alone

There are several examples of companies that work using supplementary alliances and networks. Many of the 60 companies situated in the "Spinderihallerne" corporate environment in Vejle experience that they are awarded new jobs on a daily basis only because they have a common location with other companies.

In the light of the need for upgrading provider competencies, network-based strategic partnerships are regarded as an opportunity for companies to expand their knowledge and competencies in, e.g. strategic design.

The emerging cluster's entrepreneurs and small innovative companies can profit from using network-based growth strategies. These strategies can help companies in at least two ways. They are capable of doing more jobs as well as larger and more complex jobs, e.g. in the use of design methods. In this way, they can develop their own companies by cooperating with supplementary partners and companies.

Network-based growth is a new way of work for many people. Knowledge of work in virtual networks, business development in networks and solution commercialisation are all areas that can be brought into focus in the cluster.

Conclusion

Entrepreneurs and small innovative companies can play an important role in clusters as they are faster and more flexible to add innovation and innovative thinking to a cluster than larger companies.

BOX 5

EXAMPLES OF CLUSTER ENTREPRENEURS AND SMALL INNOVATIVE COMPANIES

Developa: Developa in Kolding is an example of a design company that does jobs for larger customers through alliances with other companies (see box 4 for a more detailed description). Developa, which was founded in 1993 by Englishman Andrew Nagel, is engaged in product and concept development for customers like B&O, Coloplast, LEGO, Sony Playstation and Nike.

MADE: MADE is a strategic innovation and design bureau that was established by three partners in 2012. MADE specialises in user insights and their use offensively in the design of products and services which are sustainable from a business perspective.

Panuu: Panuu designs streetwear for people aged 15 to 26 and is an example of a B2C company. The company, which is situated in Kolding, was established in 2005 and currently has nine employees. The first collection was launched in 2006 and resulted in a cooperation agreement with TOPSHOP UK. Celebrities like Rihanna and Lady Gaga have worn clothes from Panuu via TOPSHOP, which has had an enormous impact on the company's growth. Panuu's clothes are sold in 15 countries, with a main focus on Denmark, the UK and Germany.

Intertisement: Intertisement is an example of a B2B company that lies at the intersection of IT and design. The company was established in Esbjerg in 2007 as a final project at the Aalborg University. The company currently has nine employees who primarily design software solutions. The company designs, e.g. augmented reality solutions for other companies and is one of the leading companies in this area in Denmark. Its clientele includes BoConcept, Christian Dior and design companies in Copenhagen and Aarhus. The company is headquartered in Esbjerg, but has strong growth ambitions and sees big opportunities in a rising global demand.

PlayAlive: PlayAlive is an innovative company specialised in developing intelligent computer-based playground equipment. PlayAlive was the first company in the world to launch outdoor climbing tools that combine children's fascination with the virtual world of IT with the important need for physical games and movement. The intelligent playground equipment caters for different age groups and skills of children of both school and preschool age.

SOURCES: INTERVIEWS WITH COMPANIES.

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BOX 6

NETWORK-BASED GROWTH

Designers and creative companies do not necessarily possess all required competencies in-house. Such companies tend to enter into alliances and strategic partnerships with other companies on solving more or less complex tasks. This can be described as "network-based growth". This type of growth is found, in particular, in micro environments like Spinderihallerne in Vejle, Stjerneskibet in Odense or Fremtidsfabrikken in Svendborg.

New figures from Fremtidsfabrikken in Svendborg indicate that their creative companies both work and grow through their networks. As they are awarded jobs and increase their turnover, the companies also get more cooperation partners. Fremtidsfabrikken had 49 companies and 134 cooperation partners in 2010. The number of cooperation partners had grown to 330 by 2012. At the same time, total turnover had more than doubled, and total employment had grown by 50 per cent – from 40 to 60 employees.

One creative company in 2012 cooperated, on average, with six other companies in order to be able to do its jobs. The companies' cooperation partners are typically other creative companies, e.g. graphic or IT companies, but also companies in related industries such as audit or other subcontractors.

Growth in the design and creative industries is therefore not necessarily measured directly as growth in employment at the companies themselves, but as derived effects in other companies.

SOURCE: BASED ON FIGURES FROM FREMTIDSFABRIKKEN

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The emerging design and creative industries cluster includes a number of successful entrepreneurs and small, innovative companies lying on different steps of the Design Ladder. Many of them are providers of design and creative competencies, and they bring innovation in the area of design and creative industries to the companies in the cluster and in the region. They also contribute, to a certain extent, to shaping the emerging cluster.

As regards companies that have come out on the global markets, their global success seems to be more widely "known" outside the cluster. Other participants in the emerging cluster are not always familiar with their products and solutions. The assessment is that there can be greater value created within the emerging cluster if successful entrepreneurs and small innovative companies are involved more in the cluster's development and become key players in the cluster organisation. They can play a role in specific cluster activities, and they can, in particular, contribute to shaping and strengthening the emerging cluster's profile by marketing their commercial success through the cluster and contributing to creating more innovation, growth and employment.

Future demand for design as a method is also likely to develop in such a direction as to raise the interest of other industries in competencies at the intersection of design methods, technology and creative industries, cf. the section regarding market and well-established companies. This means that the cluster's unique DNA can be combined in new ways and contribute to developing new services for the benefit of other industries.

However, the realisation of this growth potential requires a reinforcement of the number and quality of the emerging cluster's design and creative companies, i.e. entrepreneurs and small innovative companies.

Companies tend to cooperate in strategic networks in order to boost their growth. By taking part in strategic networks, companies can complement each other professionally and simultaneously climb up the Design Ladder. In this way, they can do larger and more complex jobs together than if they worked alone and can thereby meet the growing demand for design methods and other forms of creative competencies and knowledge.

Our recommendation is that strategic network partnerships should spread as a method among entrepreneurs and small innovative companies in the emerging cluster in order to reinforce the critical mass of qualified providers in the emerging cluster. Partnerships can boost the volume of strong competitive design and creative companies and the complexity of design jobs in the cluster.

RELEVANT KNOWLEDGE ACTORS WHO BRING NEW KNOWLEDGE TO THE CLUSTER FOR THE BENEFIT OF COMPANIES IN THE CLUSTER

Access to relevant and leading knowledge and research plays an important role in strong clusters. This is an important role for universities and other knowledge actors in a cluster. They can also contribute to the cluster's development by training talent relevant for the cluster and bringing new knowledge to the cluster's companies. The commercialisation of new knowledge creates a breeding ground for corporate innovation, and knowledge actors can contribute to putting a cluster on the map at both national and global level.

This is the basis used for analysing knowledge actors in the emerging design and creative industries cluster. There is a high concentration of design-related degrees and knowledge actors in the cluster. The assessment based on interviews with companies is that knowledge of design is the emerging cluster's absolute core competence that contributes to the outward shaping of the cluster. Many companies experience that the cluster's knowledge actors are the cluster's strongest attraction.

Educational institutions like the Kolding School of Design, the University of Southern Denmark (SDU), the International Business College (IBC), the University College South Denmark and the Lillebaelt Academy of Professional Education offer different forms of design-related and creative trainings and integrate design methods into the educational process.

The Kolding School of Design is considered to be one of the emerging cluster's undisputed flagships (see also box 7). The Kolding School of Design has four study programmes: industrial design, communications design, fashion and textile as well as accessory design. The Kolding School of Design's cutting-edge competence covers the craftsmanlike part of design, but by cooperating closely with the cluster secretariat, D2i, and by offering consultations with introduction to design methods for companies, the Kolding School of Design has also moved to the part of design that has to do more with business development.

SDU – in particular, campus Kolding – is considered to be another flagship in the emerging cluster. The university offers degrees in design and engages in design-related research (see also box 8). SDU has a bachelor's programme in Integrated Design and Interaction Design. SDU in Kolding has been offering bachelor's degrees in both Design Culture and Design Culture and Economics since 2013. The university also offers the following master's programmes: Design Studies and Design Management, partially in cooperation with

> **"Companies tend to cooperate in strategic networks to boost their growth. By taking part in strategic networks, companies can complement each other professionally and simultaneously climb up the Design Ladder.**

the Kolding School of Design. Thanks to its focus on design, SDU has more than 70 researchers and scientific assistants under SDU Design, and conducts a lot of relevant research in the area of design. SDU Kolding has been actively involved in, e.g. D2i and Designandelen where researchers from SDU have followed up on the projects and provided professional feedback and follow-up research in some of the activities, e.g. D2i[18].

IBC offers vocational training, upper secondary education, adult and continuing education in the area of commerce. IBC also offers continuing education in design. For example, 50 of Easyfood's employees have attended a project management course that employs design methods to put the company's day-to-day work in perspective and turn it upside down. Employees are also taught how they can use design methods in their day-to-day work. IBC has also established Innovationsfabrikken (the Innovation Factory), which is a platform for cooperation projects and test facilities between students and companies. For example, companies can test their products here.

The University College South Denmark in Haderslev offers two degrees in design: Graphic Communications and Acoustic Design (Media and Sound Communications). Both degrees are manned by guest lecturers from Denmark and abroad. Lecturers include, e.g. specialists from Skybrud in Vejle, but also important, international names. Dialogue with companies is an important part of the training, but a special challenge is creating job opportunities for the students. More than 50 per cent of the students have practice abroad in connection with their training. The school works with integration of design methods into the training.

The Lillebaelt Academy of Professional Higher Education integrates design and design methods into many of the 28 degrees it offers. The focus is on teaching the students to convert design into specific products and services. This applies, e.g. to food design, consumer experience design and product development and service design.

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18: Examples of the university's work in D2i can be found on www.cdcm.dk

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Despite the high concentration of knowledge actors in the emerging cluster and their contribution to the area of design, the institutions are not assessed to utilise, to a sufficient extent, the great potential offered by their close geographic concentration. This means that, e.g. knowledge actors do not take advantage of the community in order to strengthen the visibility of their own core competencies, results and research in the area to the surrounding business and other players in Denmark.

There is also a possibility to cooperate on the development of a joint and strong knowledge cluster profile, e.g. with an emphasis on the emerging cluster's unique design-related knowledge aspects and thereby contribute more actively to shaping the emerging cluster's profile. The close geographic concentration also means that there is a potential for creating an exciting campus environment that can attract other companies, investors and consultants to the emerging cluster. Furthermore it is pointed out that knowledge actors can take advantage of the geographic concentration for sharing lecturers, researchers and introductory speakers. It is also obvious that the Kolding School of Design acts as a locomotive for attracting students to the other educational institutions in the region.

Knowledge institutions are generally good at recruiting and training students from outside the region. Many students come to the region from other regions and cities within and outside Denmark. However, what seems to pose a special challenge is keeping students employed and/or in student jobs in the cluster. Students often leave the cluster upon completing their training. They move to Copenhagen or Aarhus and are no longer involved with the design cluster. This means that Kolding and the region as a whole lose many of their design competencies. A reason for this can be lack of sufficient integration of the students into the local business and insufficient availability of / interest in student jobs, which means that regional companies do not seek student design competencies to a sufficient extent. The interviews also showed that there is a large unused potential in involving alumni in a more active role in the cluster's development. For examples, students could act as ambassadors for the cluster's knowledge institutions and for the geographic area upon completion of their studies. This is why it is important to create close relations and good experiences during their studies to both knowledge environments and companies so that the cluster over time becomes a natural attraction for these talents. Initiatives like STARS are a step in this direction.

Conclusion

Knowledge institutions play a central role in the cluster as they can provide access to relevant knowledge and research in the area.

The emerging design and creative industries cluster has a strong knowledge foundation, and there is a high concentration of knowledge actors in the area. This is owing to, e.g. the Kolding School of Design, SDU and other knowledge actors. However, what is important for the future development of the cluster is to ensure a closer interaction between knowledge environments. The parties can cooperate, for example, on the development of a joint professional profile in the cluster that can contribute to putting the emerging cluster on the map at national and international level.

"Despite the high concentration of knowledge actors in the emerging cluster and their contribution to the area of design, the institutions are not assessed to utilise, to a sufficient extent, the significant potential offered by their close geographic concentration. This means that, e.g. knowledge actors do not take advantage of the community in order to strengthen the visibility of their own core competencies, results and research in the area to the surrounding business and other players in Denmark.

BOX 7

KOLDING SCHOOL OF DESIGN

The Kolding School of Design is a self-governing institution under the auspices of the Danish Ministry of Science, Innovation and Higher Education. It was founded in 1967 as part of the Technical School in Kolding. The school subsequently became independent and was renamed the Kolding School of Arts and Crafts. The school was given its current name in 1998 and was awarded university status in 2010.

The Kolding School of Design conducts research under the "Sustainable Futures" motto with a focus on sustainability, social inclusion and cultural diversity.

There are eight researchers associated with the Design School, and it is attended by some 390 undergraduate and a number of PhD students. 90 new students are admitted to the school every year.

The Kolding School of Design offers bachelor's and master's degrees in two institutes, the Institute of Product Design and the Institute of Communications. The Institute of Product Design offers design degrees in the areas of fashion, textile and industrial design, and the Institute of Communications in interaction design, graphic design and illustration. The school also offers a master's degree in Design Management in cooperation with SDU and hosts the Copenhagen Institute of Interaction Design's (CIID) master's degree in Interaction Design.

The vision for the Design School is to be developed into a leading international design institution – in cooperation with SDU and a number of international partners. The school's focus is to contribute to promoting innovation and growth based on research, professional design development work and cooperation with the business.

The Design School has a number of partnerships with the surrounding business community. One example is the cooperation with ECCO where the bachelor students in year 5 develop new shoes in cooperation with ECCO. ECCO gets new inspiration from the cooperation and, in exchange, the company organises a shoe seminar with guest lecturers, tools and materials. ECCO also provides external examiners for exams held at the Design School. The Kolding School of Design also has professional partnerships with, e.g. LEGO, Copenhagen Fur, Swarowski and the Lillebaelt Hospital.

By participating in the D2i project, the Design School is also in contact with the business. The Design School provides consultants who tell companies about the advantages of using designers strategically, who facilitate design processes and offer design courses.

SOURCE: INTERVIEW WITH ELSEBETH GERNER,
VICE CHANCELLOR THE KOLDING SCHOOL OF DESIGN.

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What is also important is to make research visible and practice-oriented for the regional and national business community. Students here can play an important role for bringing new, research-based knowledge to the private sector. Knowledge environments like SDU and the Kolding School of Design can also contribute to disseminating relevant new knowledge and research results from the emerging cluster to the cluster's members by means of different events.

Knowledge institutions are good at attracting students from the outside. However, the challenge they are faced with is that the students often leave the cluster after graduating. The knowledge institutions contribute to training students who have practical skills in the area of design methods and who can indirectly contribute to market maturation and development of the cluster by drawing on their design knowledge in the regional business community. The cluster's development will be strengthened if more students can be kept in or act as ambassadors for the emerging design and creative industries cluster.

"The Design School has a number of partnerships with the surrounding business community. One example is the cooperation with ECCO where the bachelor students in year 5 develop new shoes in cooperation with ECCO.

INVESTORS WHO INVEST RISK CAPITAL INTO THE COMPANIES IN THE CLUSTER

Access to risk capital in a strong ecosystem plays an important role for company growth, just like strong involvement of private investors and funds indicates the creation of value in the companies.

We have analysed if there is available capital in the emerging design and creative industries cluster. The region has public investors, e.g. SDTI (Syddansk Teknologisk Innovation), which can invest in young growth companies, including also in companies within the cluster.

However, there are not so many venture investors in the emerging cluster. There can be different reasons for this. First of all, companies in the emerging cluster (and other similar clusters) do not necessarily offer obvious opportunities for venture investments. The reason for this is that design and creative companies possibly need a different form of capital than companies in other clusters such as, e.g. cleantech where companies need substantial start-up investments. Companies are often small (typically one or two-man businesses) and have a limited scale-up potential. They usually grow using own financing and typically need small or no start-up costs whatsoever.

Another possible reason is that the emerging design and creative industries cluster is in development and does not market its companies.

However, there is no doubt that because of the nature of the emerging cluster, in particular, the nature of the companies (small companies without significant start-up costs), the type of capital the cluster needs is different from the type of capital needed by other clusters. The cluster may have a greater need for business angels with some capital and experience in running successful companies.

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> **"Access to risk capital in a strong ecosystem plays an important role for company growth, just like strong involvement of private investors and funds indicates the creation of value in the companies.**

BOX 8

DESIGN AT THE UNIVERSITY OF SOUTHERN DENMARK AND CAMPUS KOLDING

The University of Southern Denmark (SDU) hopped on the design train a couple of years ago in response to growing the corporate demand for applicants who have an understanding of strategic design and management within the creative industries. This is why there are many design-related programmes in SDU. The campus in Odense, for example, offers a degree in Integrated Design and the campus in Sønderborg a degree in Interaction Design. The campus in Kolding has a particularly strong presence with the following bachelor's degrees: Design Culture (2013), Design Culture and Economics (2013) and Economics and Business Administration – Design (2013) and the following master's degrees: Design Studies (2013) and Design Management (in cooperation with the Kolding School of Design).

SDU has started strategic cooperation with the Kolding School of Design– through design management and its involvement in D2i – which is supposed to bring the two knowledge institutions even closer together over time. The cooperation will be given a new boost in the coming years when SDU Kolding will move to its new building situated opposite the Kolding School of Design.

SDU is also involved in the development of the new campus area that will bring physically together a number of design knowledge actors. The IBC, the International Business Academy (IBA) and the Educational Centre of the Kolding Municipality are already there. The area also includes DesignCity, a construction project that is supposed to create over time a vibrant and inspiring area with creative companies and institutions that cooperate in all ways possible. The first buildings have been built and the first companies have already moved in.

SDU Design is an initiative at SDU Kolding aimed at promoting interdisciplinary cooperation in design research. SDU Design finances and supports a growing number of research projects, four labs and a number of open space workshops where researchers exchange experience and insights with people from outside the respective specialised design-related research area. SDU Design numbers around 70 researchers and research assistants from three faculties: Engineering, Social Science and Humanities. SDU Design is the largest single investment in SDU ever and has a special focus on design research in three areas: 1) Decision-making processes 2) Design as creation of value and 3) Explaining design to companies.

SOURCE: INTERVIEW WITH SDU. OWN RESEARCH.

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Corporate partnerships and constellations formed through more long-term network-based growth lead to greater commercial successes.

As detailed above, the emerging cluster has a number of creative B2C companies among its members; these have been successful and should be an important part of the cluster. Some of these may be suitable for venture capital investments. An interview with Kolding-based investor Bjert Invest has shown that it could be interesting to create a venture fund for the cluster's companies. This can be an opportunity for the cluster and for investors to try out the area, but such a fund should be created simultaneously with the cluster's development and the creation of a framework for development of strong and competitive companies in the design and creative industries.

Conclusion

Strong cluster ecosystems are capable of attracting private investors. Access to financing and professional venture capital can be decisive for the development of a cluster's companies.

There is capital available in the emerging design and creative industries cluster, but the emerging cluster does not have much experience in creating commercially successful companies suitable for venture capital investments. One of the possible reasons for this is that the cluster is still under development, but also that the DNA of the companies is different from the DNA of the companies in other clusters.

It may be useful in the cluster's future development to develop models of financing that can contribute to generating growth in the cluster's companies. In this context, it is necessary to make a distinction between providers working with design methods (B2B) and providers working in the creative industries (B2C). The latter may be more suitable for venture investments.

BOX 9

BJERT INVEST INVESTS IN THE AREA OF DESIGN

The investment company Bjert Invest is a private investment company based in Kolding. It was established in 1980 by a successful local businessman with a capital of half a billion Danish kroner.

Bjert Invest has developed an investment profile that supports local design development. Bjert Invest actively uses design in the company's marketing in aid of the City of Kolding's focus on design, e.g. through active participation in the development of CAMPUS in Kolding, the development of DESIGN CITY, as well as by participating in and influencing a number of design initiatives and processes that are currently under way in Kolding as part of the City's marketing as a DESIGN CITY.

The company has also co-financed the development of D2i with three million Danish kroner and is on D2i's board of directors.

SOURCE: INTERVIEW WITH BOARD CHAIRMAN ERIK JØRGENSEN AND HEAD OF DESIGN TINA THOMSEN

"As detailed above, the emerging cluster has a number of creative B2C companies among its members; these have been successful and should be an important part of the cluster. Some of these may be suitable for venture capital investments. An interview with Kolding-based investor Bjert Invest has shown that it could be interesting to create a venture fund for the cluster's companies. This can be an opportunity for the cluster and for investors to try out the area, but such a fund should be created simultaneously with the cluster's development and the creation of a framework for development of strong and competitive companies in the design and creative industries.

CONSULTANTS WHO SUPPORT COMPANIES IN THEIR DEVELOPMENT AND INNOVATION WORK

Strong ecosystems offer access to different types of consultants who aid companies in their development in a number of ways. It is typically lawyers and auditors who offer management consulting in more practical matters. Countries like Denmark also have institutions like business development centres, authorised technological service institutes and others who work with the more professional and technical part of corporate development. What is particularly distinctive for strong clusters is that the more private the consulting segment becomes, the greater the value created by the cluster and the more the money that can be earned through corporate development.

The emerging design and creative industries cluster includes a number of consultants who work in different ways with the development of, in particular, design and creative competencies providers. Some of these are Spinderihallerne, Designandelen, Fremtidsfabrikken, IDEA, the Kolding School of Design and Væksthusene. Consultants are mostly public and financed with funds from the Growth Forum and other public sources. There are few private consultants in the cluster. Companies like Playalive act as consultants for companies that want to try out and develop new design. Other companies like Developa act as role models in the cluster, but are not actual consultants for other design and creative companies.

The consultants offer basic corporate consulting, with a focus on business development and by promoting provider competencies in the design and creative industries. However, they also work to support the use of design in the companies in the region, e.g. by telling companies that do not traditionally work with design thinking about the value of using design as a method for generating business development and innovation in companies.

The consultants operate in a couple of strong micro ecosystems situated in different places in the cluster, e.g. Vejle, Kolding, Odense and Svendborg.

An assessment based on the interviews is that it is necessary to create a common vision in the consulting area. By means of closer cooperation and exchange of experience, consultants can develop and implement a vision and a strategy for, e.g. the consultants' work by upgrading providers' knowledge and competencies in, e.g. use of design methods, network-based growth strategies, etc. Companies in the creative industries and, to some extent, design companies often grow through network-based growth strategies. It is possible to strengthen work with network-based growth strategies in order to make it a real method for business development in the cluster, and providers can be introduced to the strategies based on the experience that is locally available in the cluster.

"An assessment based on the interviews is that the cluster's consultants cooperate on mapping out the direction of the cluster's strategic development and that they jointly define a forward-looking vision for the type of consulting the supply needs. Such a discussion can focus on the development and implementation of network-based cooperation alliances and the continuation of the efforts to introduce design methods into the providers' work so that they are better equipped to take part in B2B cooperation partnerships.

Conclusion

The emerging design and creative industries cluster includes a number of public consultants who support the companies' network creation, business development and growth. The consultants have developed exciting concepts for how creative industries can contribute to the development of remote areas in Denmark. This has aroused major national interest.

Nevertheless, the consultants are simultaneously confronted with the challenge of supporting the weakest link in the emerging cluster. Consultants work, in particular, to develop the providers, which is why they have an enormous responsibility for the sufficient upgrade and competence development of supply.

An assessment based on the interviews is that the cluster's consultants cooperate on mapping out the direction of the cluster's strategic development and that they jointly define a forward-looking vision for the type of consulting the supply needs. Such a discussion can focus on the development and implementation of network-based cooperation alliances and the continuation of the efforts to introduce design methods into the providers' work so that they are better equipped to take part in B2B cooperation partnerships.

STRONG NETWORK BETWEEN THE ECOSYSTEM PLAYERS

As detailed above, an ecosystem comprises a number of different players who work in a number of ways to create value in the cluster. The presence of the players alone is not enough to create a strong ecosystem. A cluster may have many of the players it needs in its ecosystem, but if they do not cooperate and network with each other, they will not create the necessary added value and synergy that contributes to creating growth in the cluster's companies. Strong cluster ecosystems are characterised by close connections between the participants in mutually dependent partnerships. It is in the participants' own interest to take part in networks and cooperate with other cluster participants because cooperation contributes to more innovation and growth in the companies. However, a prerequisite for good cooperation is also that the participants in an ecosystem are familiar with cluster theory/experience and that they believe in the advantages of cooperation rather than in independent work.

The emerging design and creative industries cluster has many of the right ingredients for creating a strong network between the participants in the ecosystem. There are a number of different players who contribute to network facilitation, e.g. Spinderihallerne, Designandelen, Fremtidsfabrikken and Stjerneskibet. The knowledge actors and D2i also contribute to network creation and cooperation, and there are many fireballs and dealmakers who contribute to the greater cohesion of the ecosystem.

However, the interviews also indicate that there are a number of actually existing micro ecosystems and that these micro ecosystems do not necessary cooperate or take advantage of each other's core competencies. The participants in the ecosystem need to view each other more as cooperation partners and take part in partnerships across various micro ecosystems in order to jointly take advantage of the synergies and develop a stronger joint ecosystem in the cluster. It is necessary to develop a stronger common cluster understanding and take joint responsibility for the cluster's development across its segments. This is decisive if the ambition is to create a strong cluster and build on the unique competencies and knowledge existing in the area.

Networking and cooperation between the participants in the emerging design and creative industries cluster may, e.g. comprise joint facilitation of specific corporate partnerships and innovation projects for the benefit of the companies in the cluster, cooperation on the strategic development of the emerging cluster, various joint activities, including e.g. workshops and conferences, joint campaigns aimed at spreading design use, development of competence development courses for providers in the cluster, development of a joint cluster profile, partnerships with other clusters, international activities, etc.

Moving office, i.e. the relocation of different participants in the cluster (in particular, consultants and network players) so as to share a common office space and ongoing dialogue meetings may contribute to more networking between the players.

In line with the cluster's development and preparation of a common vision and direction of development for the emerging cluster, it could be necessary to have a strong, common cluster organisation that can unite the different participants, enable joint activities and visualise the cluster as a whole to the surrounding world.

The establishment of cluster organisations is a trend developing in many places in Denmark that is the result of the professionalization of clusters and networks in Denmark. A cluster organisation is not the same as a trade association as it unites companies across traditional industry boundaries, and its primary focus is on facilitating networks, partnerships and visibility on behalf of the whole cluster. A cluster organisation can be a means of creating the necessary network in an ecosystem. Effective cluster organisations contribute to the creation of networks across the ecosystem's players and otherwise help visualise the unique knowledge and core competencies existing in the cluster to the surrounding world at national and international level. It can therefore make a really good sense to create a formal, recognised and unifying cluster organisation for the emerging design and creative industries cluster in the Region of Southern Denmark.

Conclusion

Network and cooperation between the participants in a cluster's ecosystem are decisive for the development of a strong cluster.

The emerging design and creative industries cluster has many of the right ingredients for creating a strong network between the participants in the ecosystem. There are a number of participants who contribute in different ways to the networking between the participants in the ecosystem. There are also micro ecosystems in the emerging cluster that seem to function really well. However, there is not necessarily any cooperation across network players.

A formal unifying cluster organisation has not been established yet even if there is experience in the area. It is necessary to establish a cluster organisation that leads the cluster, unifies the participants in the ecosystem and visualises the cluster at both national and international level. A cluster organisation can be a means for more networking and cooperation in the emerging cluster, but the cluster's success presupposes broad support among the multitude of participants in the ecosystem.

We recommend that the different participants in the cluster (in particular, consultants and network players) strengthen their cooperation, e.g. along moving-office principles and specific cooperation projects, but also through ongoing dialogue meetings between the players.

LIST OF INTERVIEWEES

NAME	TITLE	COMPANY/ORGANISATION
Andrew Nagel	Creative Director	Developa
Ann Clarke	Head of IER (Department of Entrepreneurship and Relationship Management)	SDU
Ann Plejdrup	Co-owner	DK3
Birthe Mortensen	Vice Chancellor	University College South Denmark
Carsten Bech	School of Design Project Manager	D2I – School of Design
Diana Arsovic Nielsen	Director	Health Innovation Centre of Southern Denmark
Elsebeth Gerner	Vice Chancellor	Design School
Erik Jørgensen	CEO	Bjert Inverst
Flemming Paasch	CEO	Easy Food
Hans Mikkelsen	Chief Consultant	IBC Innovation Factory
Henrik Andersen	Partner	Reformo
Henrik Lorentsen	Head of Drawing Office	Sønderomme Life
Hugo Nielsen	Head of Graphic Communication Dept.	University College South Denmark
Ivan Tyrsted	Director	IDEA
Jacob Hoilund	Founder and CEO	panuu
Jakob Møller Hansen	Vice President for Research & Development	Ecco
Jakob Weigand Goetz	Head of Acoustic Design Dept.	University College South Denmark
Jørgen Rosted	Former head of department	Ministry of Business of Denmark (subsequently Ministry of Business and Growth)
Karen Marie Madsen	Head of Education	University College South Denmark
Karsten Lumbye Jensen	Head of Innovation	Insero
Kim Bleshøy Nielsen	Managing Director, Partner	Intertisement
Klaus Baggesen Hilger	Senior Innovation Manager	Dong
Klaus Kjær Hansen	R&D Manager	Epoke
Lau Kierstein	Partner	PlayAlive
Leenert Bjerg	Secretariat Project Manager	D2I
Lene Lawaetz	Director	Spinderihallerne
Liselotte Hohwy Stokholm	Director	Business Development Centre - Southern Denmark
Majbritt Chambers	Projektleder	Designandelen
Merete Erenskjold Kristensen	Head of Design	Viking
Mette Dalby	Head of Culture and Design	School of Design
Mette Thybo	Director	Capital of Children
Mikkel Jespersen	Partner	1508.dk
Per Krogh Hansen	Head of the Department of Design and Communication	SDU
Peter Grønfeldt	Senior Designer	Kompan
Poul Rind	Head of Research for D2I at SDU	D2I – School of Design
Rikke Vestergaard	Chief Executive	Kolding Municipality
Simon Skafdrup	Director/Partner	3 Part
Stephan Schonert	Owner	Stefan Schonert
Susanne Linnet Aagaard	Manager	Fremtidsfabrikken
Thit Juhl Madsen	Head of Secretariat	D2I
Thomas Nielsen	Director	Design City
Tina Thomsen	Project Developer	Design City
Torben Damgaard	Vice-Dean	SDU
Torben Lindegaard Hansen	Head of Development	Lillebaelt Academy of Professional Education
Uffe Thorup Thomsen	CEO	MADE
Ulrik Gernow	Head of Product Innovation and Marketing	LEGO
Ulrik Jungersen	Head of Design	Kolding Municipality

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