

**LAB for Sustainability**  
Design School Kolding



## **Gain Power**

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## **Available Tools**

- Business Model Canvas
- Stakeholder Map
- Value Identification
- Past and Future Ruler
- Assessment Tool
- Designed Value Chain
- Product Development Tool
- Collection Tool

## **How to use the material:**

The purpose of this material is to offer a flexible and scalable toolkit that is easy to access and adjust depending on the task at hand. The material includes an introduction and a collection of tools. The tools are accessible in PDF-format and available for download. This means you can print the amount you need. You can include or leave out specific tools, so you only use the ones that are relevant to your specific task. The material will be reviewed on an ongoing basis.

## **Download the tools on:**

[www.designskolenkolding.dk/gainpower](http://www.designskolenkolding.dk/gainpower)

# Preface

## Preface

When we take a closer look at today's businesses and communities there is an overwhelming acceptance of the need for changes on many areas – CO2 emissions, pollution, waste, both in terms of materials and time, the working environment and in regard to industrial accidents. In recent years the term “design thinking” has gained momentum as a header for open, complex problem solving in cross-disciplinary teams. One of the most complex challenges of our time is how to collectively create sustainable transitions. New practices and new thinking are needed, if we are to create and implement the essential changes in time.

At Design School Kolding (DSKD) we have a long tradition of considering the environmental aspects and impacts of the products our students are taught to create and design. Several projects during the fourth year introduce our students to the basic understanding and impacts of the choice of materials on the environment. Furthermore, the design process, represented by the 6 Cs (collaborate, collect, comprehend, conceptualise, create and communicate) emphasises the importance of gathering knowledge about the end users' behaviours and needs.

Understanding the complexity of a company's capability to change towards more sustainable cross flows and business demands as well as perceiving the reality and opportunities for change within the companies' existing business models are indispensable skills for designers of today. All companies face a multitude of challenges but “one size does not fit all” and our students need a thorough introduction to business models and to how we as designers can influence and contribute to change in currently non-sustainable businesses.

When today's designers create new products or services there is an increased demand for them to identify their responsibility and their particular position in the value chain. We have no desire to educate designers who are solely focused on the business aspect. We want to teach our students the complexity and the need for creating new products/services or re-designing existing products and services that fulfil the future demands of circular economies and we intend to instil in them a broader understanding of value creation.

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# Intro- duction

## Sustainable Disruptions and Sustainable Prosperity

The development projects “Sustainable Disruptions” and “Sustainable Prosperity” at The LAB for Sustainability at DSKD (Design School Kolding) have created multiple tools, methods and systematics with which to describe the business complexities that our students will encounter, once they enter the professional work environment.

The methods are developed in close collaboration with a number of Danish SMEs (Small and medium-sized enterprises) over a period of five years. The present teaching material includes several steps to gradually introduce an understanding of different business models; it also creates methods and systematics to empower designers to increase sustainable circular activities in practice, both in collaboration with organisations as well as within entrepreneurial start-up businesses.

The didactic basis of this development project embraces what should be taught and the specific methods and processes applied; it also includes guidelines for practice-based teaching and relates to existing project descriptions within the curriculum.

### Why

- // To address and hand over the methods and processing tools to our students enabling them to take responsibility for creating a sustainable future.
- // To increase and structure the knowledge and understanding of business models and provide an overview of process flows within complex systems.

### Who

- // Students at DSKD.
- // External parties: Former students within the design field, companies, institutions etc.
- // Designers working within the design field.

### What

The present material is thought as a design project based on the 6C Model, which means that a specific outcome will be achieved, but the form and specific tool will be created during the process.

- // Didactic-based descriptions/examples/methods to be used by teachers at DSKD.
- // Relevant theories described as the basis for understanding the knowledge behind tools and methods.

### How

The tools included in the present toolkit will help designers:

- // Understand a value chain and identify the designer’s role and impact.
- // Understand how they might advance design and creative work through effective navigation in complex organisational contexts.
- // Make the right sustainable priorities and decisions within systems, services and products.
- // Identify value creation within a given context.

# Sustain- able Develop- ment Goals



## 17 Sustainable Development Goals

The Sustainable Development Goals (SDGs) are 17 goals that call for global action to initiate sustainable development by 2030. The objective of the goals, defined by the United Nations\*, is to solve the major challenges that face the world through economic growth while ensuring and considering social and environmental aspects. The overall objective is to create a worthy life for all people on the planet – and to ensure better conditions for future generations and the planet that will feed them. Prior to the 17 SDGs we had the Millennium Development Goals set up in 2000 with the primary aim of reducing extreme poverty by 50% by the year 2015. This goal was successfully reached due to the massive economic growth generated by the spread of industrialization around the world. Climate change and environmental problems have since become global issues, making The Triple Bottom Line (People, Planet, Profit) more important than ever.



The Sustainable Development Goals

Ending extreme poverty and hunger globally, reducing inequality and fighting climate change are global necessities that will require new ways of thinking on several levels and dedicated efforts; not only by politicians and heads of state. On a global scale, companies today have far greater economic power than politicians. Therefore it is essential that companies worldwide commit to putting actions behind the words of this agenda.

Since this is a serious agenda on behalf of our world, the objective of this toolkit is to strengthen designers to gain power on a strategic level within complex systems. To enable designers to make an actual impact for a sustainable future. As a designer one has the potential to design meaningful products, services or systems. To design towards ethical production, longevity and to design for disassembly and circular economy. Designers hold a unique position to challenge existing business models and address the need for progression based on economic, social and environmental perspectives.

\* Links to the 17 goals: [www.un.org/sustainabledevelopment/sustainable-development-goals/](http://www.un.org/sustainabledevelopment/sustainable-development-goals/)

# 17 Goals

## 1 No poverty

We must end extreme poverty completely for all people everywhere in the world by 2030. This means that no one should be forced to live on less than \$1.90 a day. 7 subsidiary goals.

## 2 Zero hunger

By 2030 we must end hunger, and we must ensure that all people have access to safe, nutritious and sufficient food all year round. Focus is particularly on the poor and the vulnerable, including infants. 8 subsidiary goals.

## 3 Good health and well-being

By 2030 we must significantly reduce the number of health-related deaths due to hazardous chemicals and the pollution of air, water and soil. 13 subsidiary goals.

## 4 Quality education

By 2030 we must ensure that all girls and boys receive relevant and effective learning by completing good quality primary and upper secondary education. 10 subsidiary goals.

## 5 Gender equality

We must eliminate all forms of violence against all women and girls in public and private life. This includes human trafficking, sexual exploitation and other forms of exploitation. 9 subsidiary goals.

## 6 Clean water and sanitation

By 2030 we must protect and restore eco-systems that affect the quality of water, including mountain areas, forests, wetlands, rivers, lakes and groundwater sources. 8 subsidiary goals.

## 7 Affordable and clean energy

Global energy supplies must be significantly more renewable by 2030. 5 subsidiary goals.

## 8 Decent work and economic growth

By 2030 all men and women must have productive and decent employment with equal pay. 12 subsidiary goals.

## 9 Industry, innovation and infrastructure

We must promote inclusive and sustainable industrialisation. By 2030 we must increase production and the number of jobs in industry in accordance with national conditions. 8 subsidiary goals.

## 10 Reduced inequalities

By 2030 we must obtain and sustain that the income of the poorest 40% of the population increases faster than the national average. 10 subsidiary goals.

## 11 Sustainable cities and communities

By 2030 we must make cities grow in ways that are more inclusive and sustainable allowing better opportunities for all countries in the world to make city and community planning more integrated, sustainable and inclusive. 10 subsidiary goals.

## 12 Responsible consumption and production

By 2030 we must use and manage natural resources in ways that are more sustainable. 11 subsidiary goals.

## 13 Climate action

We must strengthen resistance and adaptability for all nations to prepare them for climate-related dangers and natural disasters. 5 subsidiary goals.

## 14 Life below water

By 2025 we must stop and significantly reduce any kind of sea pollution. We must particularly address our efforts towards pollution that stems from onshore activities, including waste and nutrient pollution. 10 subsidiary goals.

## 15 Life on land

By 2020 we must preserve and restore eco-systems on land and in freshwater and use them sustainably. This particularly applies to forests, wetlands, mountains and areas that experience a lack of water. 12 subsidiary goals.

## 16 Peace, justice and strong institutions

We must promote law and order on national and international levels. At the same time, we must ensure the fair treatment of all people. 12 subsidiary goals.

## 17 Partnerships for the goals

We must ensure coherence of political decisions in order to strengthen a sustainable development. 19 subsidiary goals.

***Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.***

World Commission on Environment and Development, Our Common Future \*

***For sustainable development to be achieved, it is crucial to harmonize three core elements: economic growth, social inclusion and environmental protection. These elements are interconnected and all are crucial for the wellbeing of individuals and societies.***

United Nations \*\*

\* World Commission on Environment and Development, Our Common Future, 1987: [www.un/documents.net/ocf-02.html](http://www.un/documents.net/ocf-02.html)

\*\* United Nation: [www.un.org/sustainabledevelopment/development-agenda/](http://www.un.org/sustainabledevelopment/development-agenda/)



## Triple Bottom Line

The Triple Bottom Line is the simultaneous weighting of economic earnings, environmental sustainability and social justice. John Elkington\*, who coined the term, is a world-renowned authority on Corporate Social Responsibility and sustainable development.

The Triple Bottom Line indicates that it is no longer sufficient for a company to be cost effective and create economic growth. Sustainable growth is created with consideration for the consumption of limited resources, the well-being, social rights of employees, the entire supply chain and the life cycle of the product as well as the environmental impact. There is an increasing demand for transparency from companies and organisations, not just in regard to their own value chain, but also within their suppliers' and subcontractors' value chains.

Behind the concept of the Triple Bottom Line lies the principle that what you measure is what you get, because what a company, an organisation or an individual measure is what we most likely pay attention to on a daily basis. Only when we measure our social and environmental impact will we have socially and environmentally responsible organisations.

### People



Health, Safety, The Right to Organize, Diversity in Sex and Race, Human Rights, Child Labour, Education, Local Involvement, Living Standards, Quality of Life, Investment in Supplier Countries etc.

### Profit



Capital Efficiency, Social Capital, Materiale Consumption, Suppliers, Production, Customers, End-users, Logistics, Cost Saving, Production Developments, Sales, Marketing etc.

### Planet



Reduction of Emissions, Biodiversity, Clean Water, Clean Air, Chemicals, Dyes, Life-Cycle Analysis, Re-Use, Circular Economy, Cradle2Cradle, Energy Use, Zero-Waste, Product in use etc.

## Triple Bottom Line considers three parameters

### // Social

An increased demand from consumers for transparent production in terms of working conditions and employees' rights; knowing the actions of your entire supply chain and that of your partners in regard to working conditions etc. is no longer an asset – it is a requirement.

### // Environment

A demand and an expectation that a company is acutely aware of, and tries to lessen, the environmental impact as well as the use and waste of resources involved in all types of production and other activities within the company. The identification of opportunities and the effects of a circular economy, design to disassembly and designing for re-use are aspects of this segment of The Triple Bottom Line.

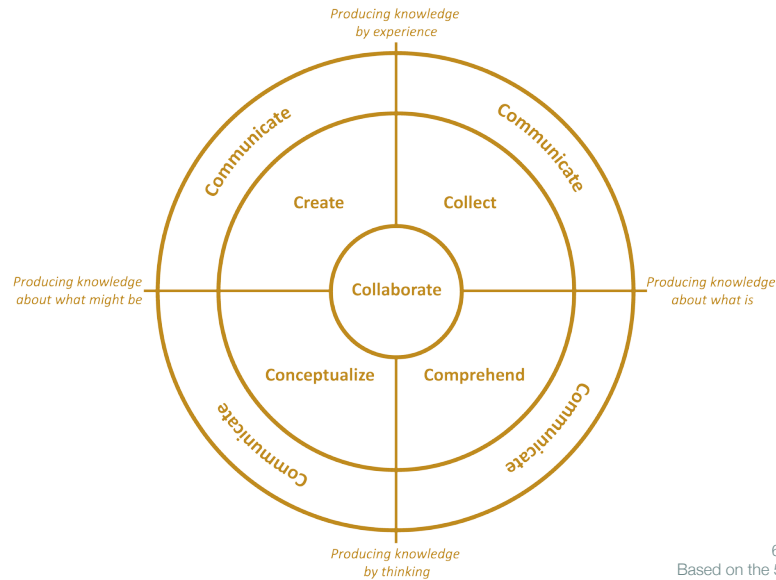
### // Economy

A demand that the company should be on a sound financial footing and, in addition to the figures in black on the bottom line, should empower the employees to expand their knowledge and competencies in relation to sustainable development.

\* John Elkington coined the phrase The Triple Bottom Line in 1994. Founder of Sustain Ability and Volans. Elkington, J.; Cannibals with Forks: The Triple Bottom Line of 21st Century Business. Capstone, 1997. [www.johnelkington.com](http://www.johnelkington.com)

**6C**

**Model**



## The 6C Model, Design Thinking and Sustainability

The 6C Model (developed by Friis and Gelting, 2016) describes six types of knowledge production taking place in design processes. Some of the model's co-creation cards – a collection of methods translating knowledge production into practical approaches – are suggested as supportive methods in this toolkit. The circular form of the 6C Model indicates the necessity to approach the design process as an iterative process. Knowledge production in the form of research into existing and future circumstances, looking at a situation from inside and from outside, combined with strong visualisation skills are distinctive and invaluable as drivers for transformation processes across disciplines.

// Collaborate – identifying the stakeholders within a given context.

Emphasis on collaboration and knowledge sharing, visits to companies, conversations and observations involving all stakeholders; knowing the process flows, strategy and visions within a company or an organisation.

// Collect - research, wondering and exploring.

Various design methods are used to collect information about the companies and the stakeholders, for example the latitude awarded to competitors, customers, end users, suppliers and other stakeholders is collected and mapped. Workshops are facilitated, in which the participating companies work with opportunities and challenges of the future.

// Comprehend – analysing, sorting and categorising.

Analysis of the collected material as well as insights from conversations and workshops; description of identified spaces of opportunities within the companies.

// Conceptualise – drafting possible solutions – developing concepts.

Drafting, prototypes and tests in collaboration with the companies/organisations and stakeholders; identification of useful and implementable solutions and tools.

// Create – the finished concept – production.

The final solutions and tools are applied and presented to the companies involved. The implementation of the given result of the process is outlined and the supportive actions are described.

// Communicate – a requirement throughout the process.

Within all phases of the design process communicating and interacting with the relevant stakeholders of a project is a given. The communication can be created in a variety of visual, verbal and written forms. Communicating throughout the process creates more viable, desirable and implementable results of design transformation work.

## References:

- A**mabile, Theresa (1998): How to Kill Creativity. Article, September–October 1998 issue of Harvard Business Review.
- Ansoff, Harry Igor: [www.ansoffmatrix.com](http://www.ansoffmatrix.com) [accessed 15.11.2017]
- B**rundtland, Gro Harlem (1987): World Commission on Environment and Development, Our Common Future. [www.un-documents.net/ocf-02.htm](http://www.un-documents.net/ocf-02.htm) [accessed 15.11.2017]
- E**lkington, John (1997): Cannibals with Forks: The Triple Bottom Line of 21st Century Business. Capstone.
- Elkington, John: Founder of SustainAbility and Volans. [www.johnelkington.com](http://www.johnelkington.com) [accessed 15.11.2017]
- F**riis, Silje Kamille (2016): The 6C Model. The Contribution of Design to Open, Complex Problem Solving, Friis, S.A.K. The International Journal of Design in Society, Volume 10, Issue 3, 2016
- Friis, Silje Kamille and Gelting, Anne Katrine G. (2011): The 5C Model, Design School Kolding, Denmark
- H**asling, Karen Marie; Kofoed, Lotte Haen; Ræbild, Ulla (2017): The Sustainable Design Cards, Research Department, LAB for Sustainability, Design School Kolding, DK. [www.sustainabledesigncards.dk](http://www.sustainabledesigncards.dk) [accessed 15.11.2017]
- Hildebrandt, Steen (2015): Disruptions to Sustainable Business Development. Article in the publication, DSKD: Sustainable Disruptions, 2015. [www.designskolenkolding.dk/en/publications/sustainable-disruptions](http://www.designskolenkolding.dk/en/publications/sustainable-disruptions) [accessed 15.11.2017]
- K**imbell, Lucy (2011): Rethinking Design Thinking: Part I (Kimbell, 2011)  
DOI: 10.2752/175470811X13071166525216
- Kimbell, Lucy (2012): Rethinking Design Thinking: Part II (Kimbell, 2012)  
DOI: 10.2752/175470812X13281948975413
- M**acArthur, Ellen: Ellen MacArthur Foundation. [www.circulardesignguide.com/methods](http://www.circulardesignguide.com/methods) [accessed 15.11.2017]  
[www.ellenmacarthurfoundation.org/assets/design/Circular\\_Flows\\_Final.pdf](http://www.ellenmacarthurfoundation.org/assets/design/Circular_Flows_Final.pdf) [accessed 15.11.2017]
- Ministry of Environment and Food of Denmark. [www.mst.dk/erhverv/groen-virksomhed/groenne-produkter/](http://www.mst.dk/erhverv/groen-virksomhed/groenne-produkter/) [accessed 15.11.2017]  
[www.mst.dk/media/90192/environmental\\_improvement\\_through\\_product\\_development.pdf](http://www.mst.dk/media/90192/environmental_improvement_through_product_development.pdf)  
See pages 4 and 5. [accessed 15.11.2017]
- O**sterwalder, Alexander; Pigneur, Yves; Bernarda, Greg and Smith, Alan, (2010): The Business Model Canvas (BMC): [www.strategyzer.com/canvas](http://www.strategyzer.com/canvas) [accessed 15.11.2017]
- Osterwalder, Alexander, (2017): Alexander Osterwalder – Value Proposition Design. [www.youtube.com/watch?v=b\\_X18bmpHaw](http://www.youtube.com/watch?v=b_X18bmpHaw) [accessed 15.11.2017]
- Osterwalder, Alexander, (2012): Osterwalder explaining the Business Model Canvas. [www.youtube.com/watch?v=RzkdJiax6Tw](http://www.youtube.com/watch?v=RzkdJiax6Tw) [accessed 15.11.2017]
- U**nited Nations (2016): Sustainable Development Goals, 17 goals to transform our World. [www.un.org/sustainabledevelopment/development-agenda/](http://www.un.org/sustainabledevelopment/development-agenda/) [accessed 15.11.2017],  
[www.un.org/sustainabledevelopment/sustainable-development-goals/](http://www.un.org/sustainabledevelopment/sustainable-development-goals/) [accessed 15.11.2017],  
[www.un.org/sustainabledevelopment/blog/2015/12/sustainable-development-goals-kick-off-with-start-of-new-year/](http://www.un.org/sustainabledevelopment/blog/2015/12/sustainable-development-goals-kick-off-with-start-of-new-year/) [accessed 15.11.2017]