

Minor Circular Start-up



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1 Introduction

Current business practices are based on an approach to take, make, and dispose products. This leads to the depletion of natural resources (materials, water, energy, land). In order to sustain our economic growth, companies will have to move away from this approach to a circular economy. In a circular economy, production and distribution requires less resources, products are made to last and can easily be reused. This requires new business solutions and offers many opportunities to start up new businesses.

During this minor you will work individually on the development of your own circular product and the start-up of the business activities of your own company. Teams of students are formed. Each team focuses on circularity in a specific industry:

- Electronic and electrical equipment
- Fabrics, Apparel, Carpets, Textiles
- Fast Moving Consumer Goods
- Machinery and Automotive
- Medicine

For examples of circularity per industry, please see

<https://www.ellenmacarthurfoundation.org/case-studies/business>

and more uses cases on circularity can be found here:

<https://www.theblueeconomy.org/innovations.html>

<https://circle-lab.com/knowledge-hub>

The goal of the minor is to develop a prototype or a first series of a new circular product which provides more value for the customer, less environmental impact and/or more positive societal impact. By the end of the minor, you need to sell your prototype or first series to the customer. In parallel, you need to develop your business which is described in a business plan.

The study program consists of various courses which provide you with knowledge on the latest developments on the circular economy:

- Circular economy, product, and business development
- Sustainable marketing
- Circular Finance
- Circular Supply Chain

For the course 'Circular economy, product and business development' you may choose – based on your own interest and curiosity - from a variety of online courses on circular economy, product design, business development, environmental impact, and strategies.

1.1 Overview

The minor Circular Start-up consists of the following courses:

Code	Description	EC
MCSUPBD	Circular economy, product, and business development	6
MCSUCSC	Circular Supply Chains	6
MCSUMA	Sustainable Marketing	6
MCSUCFC	Circular Finance	6
MCSUPRO	Project Circular Start-Up	6

1.2 Entry requirements

Undergraduates in their 3rd or 4th year of their study. Additional entrance tests or interviews may be required. This minor is specifically focused on students from a variety of study programs, such as: Logistics, Marketing, Finance & Control, Engineering and Life Sciences.

1.3 Learning outcomes

After this minor you will be able to:

- Advise on the optimal design of information provision and business processes, aimed at the effectiveness and efficiency of an organization
- Be a professional partner for companies in the design of (logistics) processes that contribute to the achievement of circular objectives
- Increase your capabilities of reflection, which is expressed in the awareness of cultural aspects, being respectful towards others and acting on the basis of professional codes and ethical principles for professional behaviour.

1.4 Schedule

The schedules are communicated via Xedule:

See <https://start.nhlstenden.com/> - Schedules

1.5 Logbook

Every 2 weeks, every student presents his/her progress to the other students. The other students support further development by providing feedback.

The 2-weekly progress presentations should always include the topic 'Management'. In this topic you should present the tasks you still need 'to do', the tasks which are currently 'in progress' and the tasks that are 'done'.

Your logbook consists of - in total 8 - 2-weekly progress presentations, printed in PDF, 4 slides per page and combined into 1 document. The logbook is part of MCSUPRO – Project Circular Start-Up.

1.6 Attendance

The student is obliged to attend 100% of all contact moments (workshops, lectures, guest lectures, project meetings, events, excursions).

1.7 Assessment overview

The following assessment types apply during this minor:

Course	Module	Assessment type	Norm	Deadline	Resit
MCSUPBD Circular economy, product, and business development	3 & 4	Individual assignment	5.5	End of module 4	End of module 4
MCSUCSC Circular Supply Chains	3 & 4	Individual assignment	5.5	End of module 4	End of module 4
MCSUMA Sustainable Marketing	3 & 4	Individual assignment	5.5	End of module 4	End of module 4
MCSUCSC Circular Finance	3 & 4	Individual assignment	5.5	End of module 4	End of module 4
MCSUPRO Project Circular Start-Up	3 & 4	Individual assignment	5.5	End of module 4	End of module 4

Students who did not pass an assignment must contact the minor coordinator within two weeks after the announcement of the results.

If assignments are not concluded with a pass mark, the student has one more chance to improve the results in a resit.

2 Circular Economy, Product & Business Development

2.1 Introduction

This course will focus on the principles of circular economy, business models, product development and the assessment of the environmental impact of products.

2.2 Learning objectives

After this course you will be able to:

- Explain the principles of a circular economy and sustainability
- Apply appropriate methods to develop a product
- Identify circular business opportunities for consumers, environment, and society
- Assess the environmental impact of your product and business

2.3 Assessment

Attendance to the 3-day workshop of Product Development, as offered by the NHL Stenden Circular Design Lab. Furthermore, you need to complete a total number of hours on online courses. Some of these online courses are compulsory. Others you may choose based on your own curiosity and your own product and business.

For this course you need to hand in a 1-page review (about 250 words) of every course attended (including the workshop). The review should include at least: things you wanted to learn /expectations, things actually learned/reality and your rating of the course supported with sound arguments.

2.4 Planning

Workshop Product Development by the NHL Stenden Circular Design Lab (see Xedule). The following online courses are compulsory:

- Circular Economy: an introduction
- How to design a successful business model
- Eco-cost (calculating)

Links to these courses are provided via Blackboard.

On Blackboard also various links to other online courses are provided. You may choose from these other online courses, or you may suggest another online course to the minor coordinator.

Next to the compulsory online courses, you need to participate in other online courses for about in total 60 hours.

2.5 Literature

Compulsory literature (books, articles)	ISBN
-	-
Recommended literature (books, articles)	ISBN
Products that Flow (Bakker et al.)	9789063695590
Products that Last (Haffmans en van Gelder)	9789063694982
“Bioplastics Basics. Applications. Markets” (M. Thielen)	3981498119
“From Polymers to Plastics” (A.K. van der Vegt)	9789071301629

3 Circular Supply Chains

3.1 Introduction

Your product has to be produced, delivered to, and returned from your customer to be recovered into a new product. This course will focus on the design of these supply chain processes and the measurement and control of its performance. The course starts with the design of a traditional linear supply chain and measurement of its performance. The course continues with developing a circular supply chain and measure its performance. In this course, performance is always focused on economic, environmental, and social performance.

3.2 Learning objectives

After this course you will be able to:

- Analyse current business practices and develop business practices that enable circularity and sustainability
- Develop supply chain processes with appropriate performance measures

3.3 Assessment

All assignments together in a portfolio will be assessed based on the extent to which you demonstrate knowledge on circular supply chain management.

3.4 Planning

Week 3.1: Forecasting

To design the supply chain of any start-up or new business activity, the starting point is always forecasting. Forecasting is necessary to understand the quantity and location of the demand. Subsequently, the supply chain is designed so that it can fulfil this demand.

Literature: Krajewski - Chapter 8

Assignment: Develop a forecast based on the total demand in the dataset 'demand end product' using at least two different forecasting techniques. Measure the quality of your forecasts.

Week 3.2

After the forecast is known, the next step is to determine order sizes. The product is assembled in Jakarta, Indonesia. The product will be distributed to one warehouse in Western Europa on a location of your own choice. The consumer demand is in Western Europe.

Literature: Krajewski - Chapter 9

Assignment: Determine the optimal order sizes based on the EOQ formula, the number of products on a pallet, the number of pallets in a container. Choose the location of the warehouse for Western Europe and the average inventory in this warehouse.

Week 3.3

An important part of the supply chain is to source all required materials. The Bill-Of-Materials describes all required materials, purchase price and supplier.

Literature: SCOR version 12 (or 11) and SCOR quick reference guide

Assignment: Describe the current linear supply chain, based on the Bill-Of-Materials, using SCOR.

Week 3.4 + 3.5

Now that the supply chain is described, the required performance needs to be determined. Performance is measured, reported, and controlled using performance measures (also known as KPIs, Key Performance Indicators).

Literature: SCOR version 12 (or 11), SCOR quick reference guide, Circular SCOR quick reference guide

Assignment: Determine performance measures of the current linear supply chain. Measure the economic and environmental performance.

Week 3.6 + 3.7

Social performance is a pillar in the Triple Bottom Line: People (social performance), Planet (environmental performance), Profit (economic performance). However, social performance receives little attention in the circular economy. The project continues by determining the social performance of the linear supply chain.

Literature:

van der Velden, N. M., & Vogtländer, J. G. (2017). Monetisation of external socio-economic costs of industrial production: A social-LCA-based case of clothing production. *Journal of cleaner production*, 153, 320-330.

Schröder, P., Lemille, A., & Desmond, P. (2020). Making the circular economy work for human development. *Resources, Conservation and Recycling*, 156, 104686.

Assignment: Measure the social performance of the current linear supply chain

Week 3.8 + 4.1

Circularity can be organized in many ways. This week we will develop a circular supply chain that returns and recovers its products.

Literature: Vegter, van Hillegersberg & Olthaar (2020) Supply Chains in Circular Business Models and Circular SCOR quick reference guide

Assignment: Develop circular supply chain called 'Return & Recover', which is to organize a return of products after end-of-life and recycle its materials. Measure its performance taking into account 3 possible scenarios: the number of returns is low, medium, high.

Week 4.2 + 4.3

Circularity can be organized in many ways. This week we will develop a circular supply chain that is 'local manufacturing'. A local manufacturer produces for local consumers and products are returned to this local manufacturer after end-of-life. The suppliers remain located in their original location.

Literature: Circular SCOR quick reference guide

Assignment: Develop circular supply chain called 'Local manufacturing'. The assembly is moved from Jakarta, Indonesia to Istanbul, Turkey. The suppliers remain located in their original location. Measure its performance taking into account 3 possible scenarios: the number of returns is low, medium, high.

Week 4.4 + 4.5

The next step is 'local-for-local'. Not only manufacturing, but also the suppliers are located near consumers. Products are returned after end-of-life to this local manufacturer.

Literature: Circular SCOR quick reference guide

Assignment: Develop circular supply chain called 'Local-for-Local'. The local manufacturer is located in Istanbul, Turkey. The suppliers are located in various locations in Europe. Choose a country of your own choice for every supplier, as long as every supplier is located in a different country in Western and Eastern Europe. Measure its performance taking into account 9 possible scenarios: the number of returns is low, medium, high and the number of recoveries is low, medium, high.

Week 4.6 + 4.7 + 4.8

Consultation hours on the circular supply chain of your circular product and your circular business plan.

3.5 Literature

Compulsory literature (books, articles)	ISBN
-	
Recommended literature (books, articles)	ISBN
Operations Management: Processes and Supply Chains – Krajewski Vegter, van Hillegersberg & Olthaar (2020) Supply Chains in Circular Business Models Various articles available via Mediatheek/Ebscohost/Google Scholar	9781292259932

4 Sustainable Marketing

4.1 Introduction

Interviewer: *“Advertising executives are [...] highly paid. What is their value to society?”*

Researcher: *“There are four elements that we looked at with advertising. We looked at overconsumption. So that the things we produce, but that we do not actually consume, and the environmental costs of those in terms of resource depletion and climate change. We looked at obesity, we looked at anxiety and related mental health problems and indebtedness. Actually, we found with advertising executives that it is more socially damaging than banking even. For every pound they were paid, eleven pounds of value was destroyed from the social and environmental damage from the work they do.”* (Duong, 2019, min. 23:49-24:33).

This course will focus on how to develop an innovative product that is consumer-oriented and has value for environment and society. The course specifically focuses on identifying market segments in which there are high chances of success for circular products, the marketing of a ‘product as a service’ and the opportunities to grow your business with a limited budget.

What do we want to do with marketing? Do we want to play this game of selling, selling, selling? Or not? But what if we do not participate in this game? To whom will we then leave this game to play? Can we participate in this game on our own rules? What then will the rules be? And what can we still learn from conventional marketing? Let us figure this out together in the coming weeks.

4.2 Competencies

You will work on developing the following competencies:

- Most important is the development of a critical attitude in which you demonstrate to be able carry out the balancing act between natural and ethical limits of conducting business on one hand, and the need for profit for businesses to exist on the other hand.
- To develop a critical attitude, we will engage in the act and art of scrutiny: we are not just going to read books and articles and repeat what is in there. Instead, we are going to examine the current state of marketing knowledge and apply it in a circular economy context.
- Towards the end of the minor, you should be able to draft a circular marketing plan.

4.3 Learning objectives and assessment

After this course you will be able to understand:

- Sustainable economy and the role of consumption
- The role of consumption in relation to marketing
- Conventional marketing techniques
- Creative out-the-box think for sustainable economy solutions

4.4 Assessment

Throughout the course you will make various assignments. Each assignment will be graded and be part of your final portfolio of assignments. Your final assignment addresses the question *what future marketing looks like*.

Each assignment will be made individually. You are expected to apply the insights gained from the individual assignment to group work. The final assignment will be assessed based on the extent to which you demonstrate knowledge on the use of conventional marketing thinking as well as on new ways of marketing thinking that are needed in a sustainable economy.

Criteria	Grading
Creativity/out of the box thinking	Sufficient/insufficient
Critical thinking	
Line of reasoning	
Spelling and Grammar	
Use of reference	
Demonstrate knowledge on traditional marketing concepts	1 to 10
Demonstrate knowledge on mechanisms behind marketing	1 to 10
Demonstrate knowledge on sustainability	1 to 10
Demonstrated knowledge on societal value	1 to 10
Alignment of profit need of focal firm with ethical marketing principles	1 to 10

4.5 Assignments

Assignment 1 Conventional Marketing

Pitch in no more than three minutes what conventional marketing thinking entails. Please make sure to discuss the differences between marketing and sales.

Assignment 2 Critical Thinking

Answer the question: What incentives does conventional marketing thinking create? Discuss which incentives you think are positive, and which ones may be perverse. Draft a three-column table with in the first column the incentives, in the second column what is positive about the incentive (if anything), and in the third column what is negative or perverse about the incentive (if anything). Shortly elaborate on the incentives above or below the table. Write down your findings in no more than one page.

Tip: search for terms such as customer value, built-in obsolescence, and perceived obsolescence. Present your findings next week in no more than five minutes, five of you will be invited to do so.

Assignment 3 Scrutiny

Read the case studies of IKEA, Sono Motors, and SKOT Fashion. Discuss what the three firms could learn from one another. Write down your findings in no more than one page. Present your findings next week in no more than five minutes, five of you will be invited to do so.

Assignment 4 Critical Thinking

Towards the end of World War II, the allied nations met in Bretton Woods to discuss what was needed to prevent a devastating war to happen again. US President Franklin D. Roosevelt presented his vision to congress on 12 February 1945, arguing that for lasting peace the world needs “more goods produced, more jobs, more trade, and a higher standard of living for us all”. Pitch in no more than three minutes whether Roosevelt’s vision has become a success, what you would consider a success, and what you would not consider successful. Relate your arguments to current global welfare as well as to current global issues.

Assignment 5 How is it made

Choose a product you like and find out how it is made. Next think about how you wish to present it. Consider the two Tesla images in the online assignment as well as the transparent supply chain of SKOT Fashion. What do you want your customers to see and why? Present how the product of your choice is made and what you would like to tell your customers. Make sure your presentations contain sufficient detail and graphic support. Present your findings next week in no more than five minutes, ten of you will be invited to do so.

Assignment 6 Chocolate

Read the cases study about Tony’s Chocolonely and the interview with the owners of Chocolate Makers. Discuss the merits of both approaches. Discuss what you think is the best approach and why. Write down your findings in no more than one page. Present your findings next week in no more than five minutes, five of you will be invited to do so.

Tip: It is allowed to let your best approach be a hybrid version of the approaches of the two chocolate companies.

Assignment 7 Advertisement

Make an advertisement for the product in your category. Make it individually and present next week to class what message you wish to communicate to your target customers. Present your findings next week in no more than five minutes, all of you will be invited to do so.

Assignment 8 Critical Evaluation

Critically evaluate what you like about each other advertisements and what could be improved. Present your findings next week in no more than five minutes, one per category will be invited to do so.

Assignment 9 Final Grand Assignment

Make a circular marketing and advertising strategy that allows your firm to exist yet does not result in societal damage. Take into account that your firm has limited budget. Each week one per category will present his/her results. In week 4.8 each person will present their circular marketing and advertising strategy in no longer than ten minutes. The form of this presentation has to be discussed, e.g., Final Event.

Tip: make use of others who are in the same category as you.

4.6 Planning

Week		Lectures	Deliverables
3.1	5	Introduction to Sustainable marketing	
3.2	6	Pitches A1 conventional marketing Marketing and sales: conventional thinking	Assignment 1
3.3	7	Five presentations of findings A2 Marketing and sales: incentives and success	Assignment 2
	8		
3.4	9	Presentation of findings A3 Marketing and sales: incentives and success reconsidered	Assignment 3
3.5	10		
3.6	11	Pitches A4 A macro-economic perspective on consumption	Assignment 4
3.7	12	Product presentation A5 Consumer myopia	Assignment 5
3.8	13	Presentations of findings A6 Power by whom? Profit for whom? The role of marketing.	Assignment 6
T3	14		
T3	15		
Week		Lectures & Literature	Deliverables
4.1	16	Wrap-up: discussion of findings so far.	
4.2	17	Advertisement presentation Group discussion	Assignment 7
	18		

4.3	19	Feedback Explanation of final grand assignment	Assignment 8
4.4	20	Progress presentation Progress and questions with tutor	
4.5	21		
4.6	22	Progress presentation Progress and questions with tutor	
4.7	23	Progress presentation Progress and questions with tutor	
4.8	24	Strategy presentation	Assignment 9
T4	25		
T4	26		

4.7 Literature

Compulsory literature

Sustainable Marketing: managerial-ecological issues (ISBN-13: 978-0761912194)

Fuller, D. A. (1999). *Sustainable Marketing: Managerial - Ecological Issues* (1st ed.). SAGE Publications, Inc.

Brand valued: how socially valued brands hold the key to a sustainable future and business success (ISBN-13: 978-1119976677)

Champhiss, G., & Vila, F. R. (2011). *Brand Valued* (1st ed.). Wiley.

A Bit Rich. Available from:

[8c16eabdbadf83ca79_ojm6b0fzh.pdf \(neweconomics.org\)](#)

Buying less is better than buying green. Available from:

<https://www.sciencedaily.com/releases/2019/10/191008155716.htm>

Other sources

Sustainability Marketing: a global perspective (ISBN-13 : 978-1119966197)

Belz, F., & Peattie, K. (2012). *Sustainability Marketing: A Global Perspective* (2nd ed.). Wiley.

4.8 References

Duong, R. (Producer). (2019, March 24). *Tegenlicht: Mijn Bullshitbaan* [Television broadcast]. VPRO.

5 Circular Finance

5.1 Introduction

‘Product as a service’ and incentives that stimulate consumers to return their products after use, influence the cash flow and thus the financing of your business. This course will focus on valuation methods of reused materials, reporting guidelines and specific financing solutions for your circular business.

5.2 Competencies

You will work on developing the following competencies:

- Think with a long-term perspective, focusing on long term value drivers as relevant for a long-term time horizon.
- Appreciate the advantages of engaging widely with internal and external stakeholders, responding to their needs.
- Demonstrate how sustainability trends can impact the organization’s value creation and destruction and creates important opportunities and risks.
- Employ the necessary accounting skills for integrating sustainability considerations into the organization, in particular in relation to its financial consequences.
- Display understanding on relevant sustainability reporting frameworks, guidance, and standards

5.3 Learning objectives and assessment

After this course you will be able to understand:

- The principles of a circular economy and sustainability
- Value for consumers, environment, and society
- How current business practices can enable circularity and sustainability
- How finance can be an important enabler to a circular/sustainable transition
- Various circular/sustainable product valuation methods
- The importance of integrated reporting frameworks and integrated thinking.

Assignment¹

Throughout the course you will make various assignments.

Assignment 1	Value mapping
Assignment 2	Circular business model canvas
Assignment 3	True pricing
Assignment 4	Sustainable accounting 1
Assignment 5	Sustainable accounting 2
Assignment 6	Sustainable/circular investment
Assignment 7	Financing sustainability/circularity
Assignment 8	Sustainable risk management
Assignment 9	Sustainability/integrated reporting
Final assignment	Business case for circularity

Most of these assignments are related to the lecture of that week. Each assignment will be graded and be part of your final portfolio of assignments. Part of your assignments is made individually, and part is group work. Your final assignment is about making the business case for circularity to a CFO.

The “business model” concept is used quite loosely when speaking about the circular economy. Unfortunately, it is not as simple as changing procurement priorities or improving design features. It demands an understanding of how key value-chain stakeholders are affected by those changes, and whether the value added by that circular upgrade outweighs the cost. Increasingly, that cost should include not just conventional financial costs, but the costs of natural and social capital as well.

To effectively communicate the business case of a circular economy strategy to a CFO or as a CFO, you have to speak their language. That means articulating the qualitative benefits of a circular investment in quantitative terms like cash flow: “cash is king”. Whether discussing working capital, operating cash flows, current ratios or quick ratios, cash-on-hand, and the rate at which it is expected to come into the company, are at the top of any CFO’s priority list.

As it is the financial opportunity that puts the circular economy on the radar of company executives, making the case to a CFO for circularity should be a cash flow discussion. A company’s cash flows are determined by its operating, investing, and financing activities. These three elements provide an architecture for communicating how integrating circularity into the company will affect the business – positively or negatively, it may be both. In fact, a circular product, service, or process will likely affect multiple areas of a company’s cash flows. All these changes should be identified and accounted for in the business model.

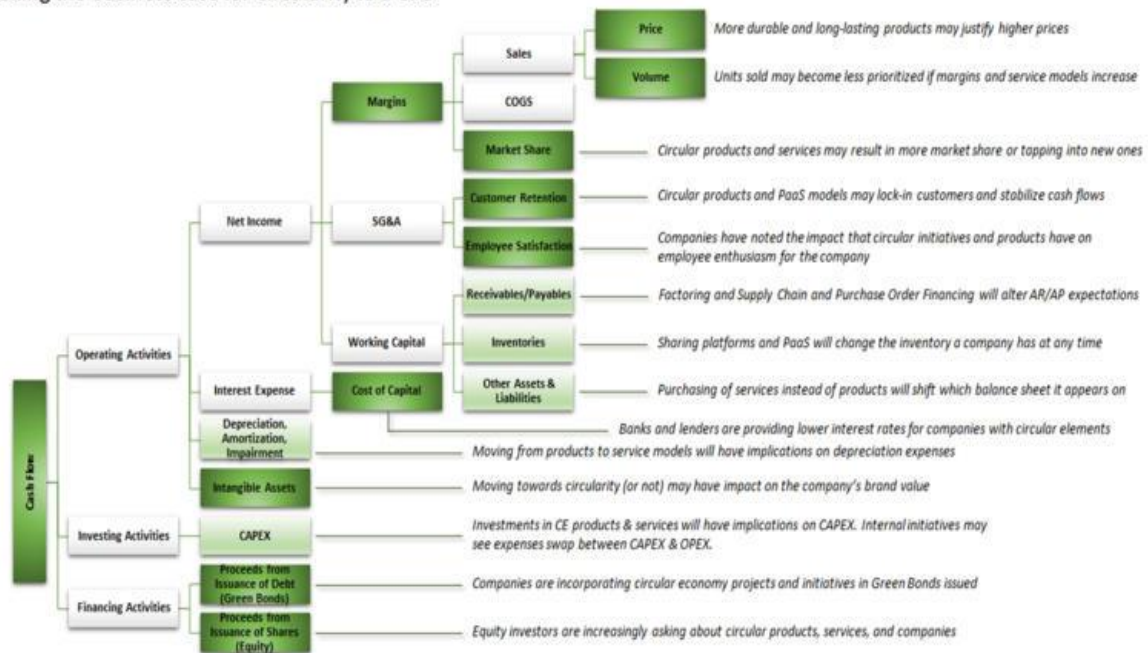
¹ Text is for a large part based on <https://www.wbcds.org/Overview/Panorama/Articles/Making-the-circular-economy-business-case-to-your-CFO>

For example, the shift from a single-transaction, volume-based business to a service-based business will result in changes to the schedule of cash flows, magnitude of cash flows, allocation of assets and liabilities (including the depreciation costs associated), inventory and more. The identification and quantification of all these impacts allows a company to build a more comprehensive business case by using them as levers to optimize the business model itself.

The diagram below presents a structure for how to estimate and communicate the implications of a company's circular economy strategy on its cash flows. It can be used as a starting template for building a business case for a specific product, service, or project.

Converting mass flows to cash flows

Making the business case for circularity to a CFO



Furthermore, investors play an important role in accelerating the transition to circularity by facilitating finance for businesses and projects applying circular economy business models. This group increasingly requests depicting not only the financial but also the social and environmental impact of an organization. In the future, the success of companies will depend more and more on their ability to create value without depleting resources of any kind, whether natural, social, human, or financial. Stakeholders will increasingly look for information on how companies connect their business strategy with their financial and nonfinancial performance.

Final assignment:

Write a report on how the circular change of your company will affect the following questions about circularity:

1. How will the key value-chain stakeholders of your company be affected by the circular change.
2. How will circularity change the cash flows of your company? Be prepared to provide insights into how both the frequency and magnitude of those cash flows will be affected. Starting with the consequences on Accounts Payable and Accounts Receivable may be a helpful place to start.
3. How will circularity change the balance sheet of your company? Understand how “your” circular business model will impact your company’s assets and liabilities, particularly when considering moving e.g., to product-as-a-service models.
4. How will circularity probably change the cost of capital of your company? Understand how “your” circular business model, including preferential interest rates from banks or changes in tax liability due to federal incentives (policy enablers), may affect your company’s weighted average cost of capital.
5. How might a reporting model look like that not only depicts financial impact but also environment or even social impact?

5.4 Planning

Week	Subject	Literature
3.1	It is all about value	On blackboard
3.2	Different (financial) models for different purposes	On blackboard
3.3	Full cost accounting	On blackboard
3.4	Financial statements and the effects of circularity	On blackboard
3.5	Financial statement analysis and the effects of circularity	On blackboard
3.6	Investing for long term value creation	On blackboard
3.7	Traditional ways of financing circularity: Equity and bonds	On blackboard
4.1	New ways of financing circularity	On blackboard
4.2	(Managing) risks	On blackboard
4.3	Integrated reporting in SME’s	On blackboard
4.4 till 4.7	Potential extension/working on (final) assignment(s)	On blackboard

5.5 Literature

Compulsory literature (books, articles)	ISBN
Literature will be made available on Blackboard	
Recommended literature (books, articles)	ISBN
Principles of sustainable finance – Schoenmaker and Schramade	9780198826606

6 Project Circular Start-Up

6.1 Introduction

The goal of the minor is to develop a prototype or a first series of a new circular product which provides more value for the customer, less environmental impact and/or more positive societal impact. By the end of the minor, you need to sell your prototype or first series to the customer. In parallel, you need to develop your business which is described in a business plan.

Teams of students are formed. Each team focuses on circularity in a specific industry:

- Electronic and electrical equipment
- Fabrics Apparel Carpets Textiles
- Fast Moving Consumer Goods
- Machinery and Automotive
- Medicine

For examples of circularity per industry, please see

<https://www.ellenmacarthurfoundation.org/case-studies/business>

and more uses cases on circularity can be found on:

<https://www.theblueeconomy.org/innovations.html>

<https://circle-lab.com/knowledge-hub>

6.2 Assessment

The individual assessment of the part MCSUPRO – Project Circular Start-Up consists of a logbook and a reflection report. The logbook and the reflection report should be handed in by the end of the minor.

6.3 Planning

Every 2 weeks, every student presents his/her progress to the other students. The other students support further development by providing feedback. The 2-weekly progress presentations are your logbook. See also paragraph 1.5 for more information on the logbook.

The reflection report is a report on your progress towards the learning outcome:

“Increase your capabilities of reflection, which is expressed in the awareness of cultural aspects, being respectful towards others and acting on the basis of professional codes and ethical principles for professional behaviour.”

The reflection report should consist of at least 3 STARRs of situations which occurred during the 2-weekly presentation of you and your fellow students.

7 Appendices

7.1 Appendix 1: Different types of start-ups

- design-based CSUs, adopting circular innovations mostly in the pre-market phase through source material minimization, product design or production process efficiency,
- waste-based CSUs, seeking to extract value from unexploited external waste streams,
- platform-based CSUs, pursuing sharing/trading business models built around B2B, B2C or C2C marketplaces,
- service-based CSUs, embedding products in service-systems to increase usage efficiency,
- nature-based CSUs, increasing the delivery of (products and) services based on nature-based systemic solutions

Source: Henry, M., Bauwens, T., Hekkert, M., & Kirchherr, J. (2020). A typology of circular start-ups: An Analysis of 128 circular business models. *Journal of Cleaner Production*, 245, 118528.

7.2 Appendix 2: Examples of circular start-ups

Source: Henry, M., Bauwens, T., Hekkert, M., & Kirchherr, J. (2020). A typology of circular start-ups: An Analysis of 128 circular business models. *Journal of Cleaner Production*, 245, 118528.

Name start-up			Name start-up			Name start-up			Name start-up	
Aceleron	UK		CocoPallet	NL		Enviromate	UK		HillBlock	NL
Aeropowder	UK		Coffee Based	NL		E-Stone Batteries	NL		Hubble	UK
Aloha Bar	NL		Community Plastics	NL		Excess Materials Exchange	NL		hubus-Berlin	GER
Bambooder	NL		Concr3de	NL		Fairphone	NL		HuisVeendam	NL
Beeblue	NL		Coolar	GER		Finch Buildings	NL		Infarm	GER
Better Future Factory	NL		CupClub	UK		FruitFlyNinja	NL		Instock	NL
bio-bean	UK		DACHFARM Berlin	GER		Fruitleather Rotterdam	NL		KAFFEEFORM	GER
biohm	UK		Design for Circularity	GER		Globechain	UK		Kartent	NL
bonaverde	GER		Diaper Cycle/Dycle	GER		green city solutions	GER		Kees	NL
BroodNodig	NL		DryGro	UK		Green Lab Berlin	GER		Kromkommer	NL
BrouwBrood	NL		Dzaino	GER		GreenMe Berlin	GER		LEIHBAR	GER
BuildingBloqs	UK		ECF FARM BERLIN	GER		GRO (Green Recycled Organics)	NL		Library of Things	UK
Bundles	NL		ECOBrotbox	GER		GrowUp	UK		Limejump	UK
Cartoni Design	NL		Enerpy	NL		HaagseZwam	NL		Loop.alife	NL
Circular IQ	NL		ENSO	UK		Halo Coffee	UK		MasterFilter	UK
Closing the loop	NL		Entocycle	UK		Harvestmap	NL		MastersThatMatter	NL

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Name start-up		Name start-up			Name start-up			Name start-up	
Material Mafia	GER	PENTATONIC	GER		Scrap Connection	NL		The Cheeky Panda	GER
Materiom	UK	Perpetual Plastic	NL		Seepje	NL		The Fungi Factory	NL
Mayya Saliba Design	NL	Photanol	NL		selo	NL		The Great Bubble Barrier	GER
MealSaver	GER	PickThisUp	NL		SIRPLUS	UK		The Waste Transformers	NL
MetroPolder	NL	Pinatex	UK		Skipping Rocks Lab	GER		TOAST	NL
Mifactori	GER	Planq	NL		SNACT	GER		TRYATEC	NL
mimycri	GER	Precious Plastic Den Haag	NL		SolaGrow	GER		United Wardrobe	GER
Mitte GmbH	GER	RanMarine Technology	NL		soulbottles	NL		Upcycle Society	UK
Moss	NL	Reblend	NL		Spireaux	UK		Upcycling Deluxe	GER
Motoshare	NL	Refil	NL		Squall	NL		Van.Eko	NL
mundraub	GER	Refill	UK		STADTFARM	UK		VanPlestik	NL
New Marble	NL	Remakery	UK		StoneCycling	NL		Vet and Lazy	NL
Nimber	UK	Repurpose	UK		Straw by Straw	NL		Vibers	NL
Noesthout	NL	Roof Water Farm	NL		Sustainer homes	UK		Waste2Wear	NL
Okkehout	NL	Rotterzwam	NL		Sustorable	GER		Waste4me	NL
OLIO	UK	Rype Office	NL		Swapfiets	NL		Winnow	UK