



URBAN Green Education for ENTeRprising Agricultural Innovation

Urban Green Train Modules and Resources (102)

Module 5:

The world of business and urban demands



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MODULE 5 “The world of business and urban demands”

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INTRODUCTION

This module and the related educational resources have been developed within URBAN GREEN TRAIN (URBAN GRGreen Education for ENTteRprising Agricultural INnovation) a project funded by the European Union and the Italian National Agency for the ERASMUS+ Programme. The aim of URBAN GREEN TRAIN ERASMUS+ project (2014-1-IT02-KA200-003689) is to encourage pioneering business oriented initiatives in urban agriculture based on knowledge exchange and mutual cooperation among different actors, as to meet the global demand for urban green innovation.

One of the main outcomes of Urban Green Train is a set of modules and resources (IO2) especially designed to be a useful toolbox for anybody looking to operate, directly or indirectly, in the world of urban agriculture.

The set includes **5 modules suitable for at presence and at distance learning, for a total duration of 150h**. The modules structure and content have been defined on the basis of an accurate analysis of the training needs of relevant key actors in urban agriculture, carried out by project partners in the their respective countries and illustrated in the publication "[URBAN AGRICULTURE INITIATIVES TOWARD A MINDSET CHANGE](#)" (IO1). URBAN GREEN TRAIN modules are the following:

Module 1: Introduction into urban agriculture concept and types

Module 2: Resource use from a challenge perspective

Module 3: Urban agriculture types/production systems and short food chains

Module 4: Networking and governance

Module 5: The world of business and urban demands

The URBAN GREEN TRAIN Modules and Resources (IO2) have been tested within a pilot international course offered from August 2016 to January 2017, both fully online and in a blended modality, to a wide range of participants from different European countries and professional backgrounds, through the e-Learning platform of the University of Bologna. Thanks to the feedbacks of pilot course participants and tutors, the modules and resources have been improved and finalised and made available in the present format to Higher Education Institutions and other private and public adult learning providers with the purpose of offering a complete and structured training pathway tackling all aspects relevant to new ways of doing business in agriculture.

URBAN GREEN TRAIN project is coordinated by the University of Bologna, Alma Mater Studiorum – Department of Agricultural Sciences (www.scienzeagricarie.unibo.it) and developed in cooperation with the following partners:

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More info at: www.urbangreentrain.eu

MODULE 5 “The world of business and urban demands”

Aims

The main aim of module 5 “The world of business and urban demands” is to be able to write a business plan for your urban agriculture business idea or project you want to establish.

The content aims to deliver information on urban market theory, consumer demands, and (qualitative) market research, which are all three of crucial importance to guide your business ideas based on the demands of your (potential) customers. Module 5 provides also a classification of urban agriculture business models as well as the strategic management templates Business Model Canvas and Value Proposition Canvas. These templates support you in developing your own business idea – based on an overview of already established urban agriculture business models. A strong focus is put on writing a business plan adequate to address banks or other lenders. Additional information on marketing and supply chain management close module 5 content.

Structure

Module 5 contents have been organised as follows:

- **5.1 Entrepreneurship and urban demands**
 - 5.1.1 Introduction and overview
 - 5.1.2 Urban market theory and consumer demands
 - 5.1.3 Qualitative market research

- **5.2 Planning the business**
 - 5.2.1 Business Models of urban agriculture
 - 5.2.2 Business Model Canvas and Value Proposition Canvas
 - 5.2.3 Templating the business project
 - 5.2.4 Financing
 - 5.2.5 Detailing the business project

- **5.3 Running the business**
 - 5.3.1 Marketing
 - 5.3.2 Supply Chain Management and Logistics

- **5.4 Practical work**

Learning objectives

Main learning objectives of Module 1 are the following:

TOPIC TITLE	TIME	LEARNING OBJECTIVES	LEARNING OUTCOMES
5.1 Entrepreneurship and urban demands	10	<ul style="list-style-type: none"> To put the customers at the heart of your urban agriculture business idea To be aware of the food and urban food market To be able to consider consumer demands and behaviours To know about (qualitative) market research and know how to conduct the research 	Participants are able to: <ul style="list-style-type: none"> Detect customer groups relevant for the business idea Analyze their demands and behaviors Choose the right market research approach to get insights into customers' thinking and decision-making
5.2 Planning the business	24	<ul style="list-style-type: none"> To present urban agriculture business models To explain the strategic management templates Business Model Canvas and Value Proposition Canvas To be able to create an own business idea in urban agriculture To receive the required background information needed to write an own business plan (s. 5.4) 	Participants are able to: <ul style="list-style-type: none"> Differentiate business models and classify case studies into the presented classification of UA business models Use Business Model Canvas and Value Proposition Canvas to describe any business as well as their own business idea Write a business plan (s. 5.4)
5.3 Running the business	10	<ul style="list-style-type: none"> To present marketing as an important element of business, especially in urban agriculture To get an overview on supply chains 	Participants are able to: <ul style="list-style-type: none"> Develop an own marketing strategy for their business idea Differentiate between supply chains and apply the ones fitting to their idea
5.4 Practical work	16	<ul style="list-style-type: none"> To write your own business plan for your business idea / project you want to establish 	Participants are able to: <ul style="list-style-type: none"> Write a business plan for their urban agriculture business idea/project.

MAIN CONTENT AND RESOURCES

Module 5 – The world of business and urban demands – focuses on entrepreneurship, economic and business issues related to urban agriculture (UA). Already the first four modules provide some links to the business world aiming to enterprising agricultural innovation.

The first subchapter “Basics in entrepreneurship and urban demands” provides some background information on urban market theory and consumer demands, and on qualitative market research. This introductory subchapter builds an essential backbone for the following subchapters “Planning the business” and “Running the business”.

While conducting subchapter “Planning the business” you are developing your own business idea. Herein, you are asked to think of an own business idea based on all the course material and your own interest. Within this second subchapter we provide some tools you should use to structure, rethink, and adjust your business idea. When your own business idea is set up, this module provides key material and key tools to develop an own business plan. This business plan you are going to write within this module – based on your initial business idea – allows you to evaluate the economic viability of your business. Additionally, you can adjust cost and income streams of your business for economic viability.

The third subchapter “Running the business” provides additional information on Marketing and Supply Chain Management.

5.1 – Entrepreneurship and urban demands

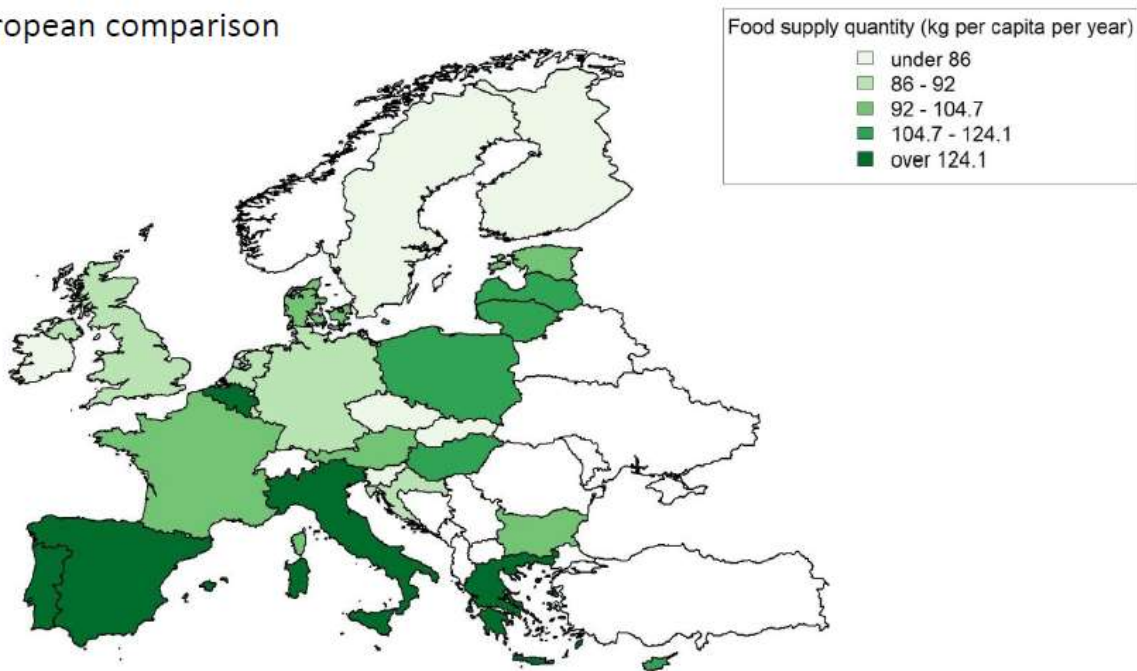
5.1.1 – Urban market theory and consumer demands

In this sub-chapter, we present the specificities of food markets through an analysis of specific trends in demand and characteristics of food supply in urban areas.

Drivers of demand for food products

Trends and behaviour of fruit and vegetable consumption are spatially heterogeneous and differ between continents, countries and regions. The highest consumptions of vegetables are located in Northern Africa (154 kg per capita per year) and Europe (119 kg per capita per year), while fruit consumption is highest for America, Australia and New Zealand (FAO, 2011). Within Europe, the vegetable consumption per capita is higher in the Mediterranean countries compared to Northern countries. Contrarily, the European spatial pattern of fruit consumption is rather unclear. Fruit consumption per capita is relatively low in Eastern Europe, but higher in the Mediterranean and partly in the Northern (Sweden, the Netherlands, and Denmark) countries.

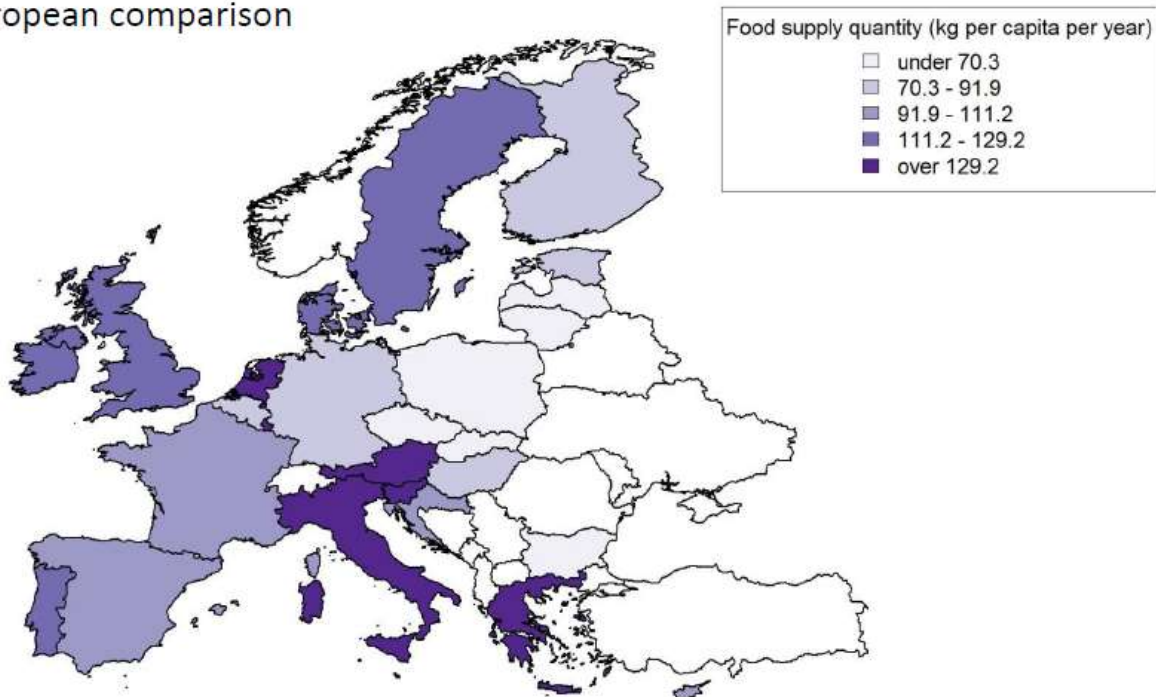
European comparison



Consumption of vegetables in European countries (mean 2000-2011)

Author: T. Coisnon 2016 - Data source: FAOstats Food Balance 2011

European comparison



Consumption of fruits in European countries (mean 2000-2011)

Author: T. Coisson 2016 - Data source: FAOstats Food Balance 2011

Over the past decades, fruit and vegetable consumption has increased slightly in European countries like France, Italy, and Germany. However, the share of fruits and vegetables in the average food baskets decreased for the benefit of ready meals. This demonstrates changing lifestyle habits.

The majority of people purchases fruits and vegetables once a week. This behaviour is gaining even more importance; while more frequent purchases of fruits and vegetables, e.g. daily or twice a week, constitute a less important and even further shrinking behaviour. Hyper- and supermarkets are the first place where households buy their fruits and vegetables. Although buying mainly in these hyper- and supermarkets, they prefer to buy food in outdoor farmers markets or small specialised stores.

The geographical origin of food is important for European consumers, especially in Greece and Italy, while Dutch and British households are less sensitive to the geographical origin.

Concluding, European households consume in comparison to other world regions lots of fruits and vegetables along with increasing demand but smaller shares in food expenses. Households dedicate only a small share of their budget to food products with a preference for ready meals and processed food products. The market share of fruits and vegetables is dominated by supermarkets, but people are sensitive concerning the geographical origin and an overall positive opinion on local food systems exists. However, trends and consumption patterns vary across countries and regions, which demands targeted market research.

Overall expenses for food have reduced all over Europe. In most European countries the share of food in total households' expenses is below 20%, partly just slightly above ten per cent, like in Germany. While households develop the habit and willingness to spend fewer on daily food consumption, this trend cannot be confirmed for fruits and vegetables. City dwellers spend even less of their total budget for food than people living in the countryside. The overall shrinking relevance of food in households' expenses is linked to economic growth.

In addition to households' disposable income, fruit and vegetable consumption may depend on a wide range of other drivers. Here we have to think of demographic and individual drivers of consumption, economic drivers and other types of drivers that may affect fruits and vegetables consumption.

Urbanization is taking place all over the world with highest shares in the wealthiest states of the global North and some city countries, like Singapore. Thus, most of the increasing population – along with larger demands for food – takes place in urban areas. Apart from urbanization, also age and sex have an effect on fruit and vegetable consumption behaviours. The consumption of fresh fruits increases with the age until a maximum for the 50 to 60 year old ones. Each generation consumes more as it gets older, but less than the previous generation. In terms of economic drivers, higher prices imply lower consumption and higher incomes imply larger consumption in most cases. Consumption behaviour with regard to changing food prices may vary from one household to the other, depending on characteristics such as individual preferences, existence of substitution products, level of income, level of education, lifestyle habits, etc. Other drivers, which are pointed out in various studies, are:

- Quality perception of the product:
 - o Taste
 - o Esthetical aspect
 - o Nutritional quality
 - o Fashion trends
- Labels:
 - o Quality
 - o Geographical origin
- Public policies and awareness campaigns

Local food supply: constraints and opportunities

After our analysis of demand characteristics, let us now analyse the supply side. In this second section, we analyse the issues related to food production in an urban and suburban context. We will consider:

- Specificities of food supply
- Land-market and competition for land-use
- Urban externalities and externalities of production.

Specificities of food supply

Food production is specific due to the dependence on climatic and biological factors. Thus, in agriculture higher uncertainties exist compared to any other type of production system. Additionally, the seasonality is specificity in farming. Characteristics are that producers are:

- not able to change their production strategy in the short term
- low responsiveness of supply to changes in demand
- potentially high variations in prices.

In economics, the supply curve is named to be rigid or inelastic, so that it does not adapt easily to exogenous changes. This specificity induces high price volatility. Based on King's law, an increase in agricultural production may result in a decrease in farmers' income because prices will decrease more quickly than production will increase.

Agricultural production provides many other environmental and social services in addition to the production itself (multifunctionality), like climate regulation, landscape maintenance, biodiversity, etc.

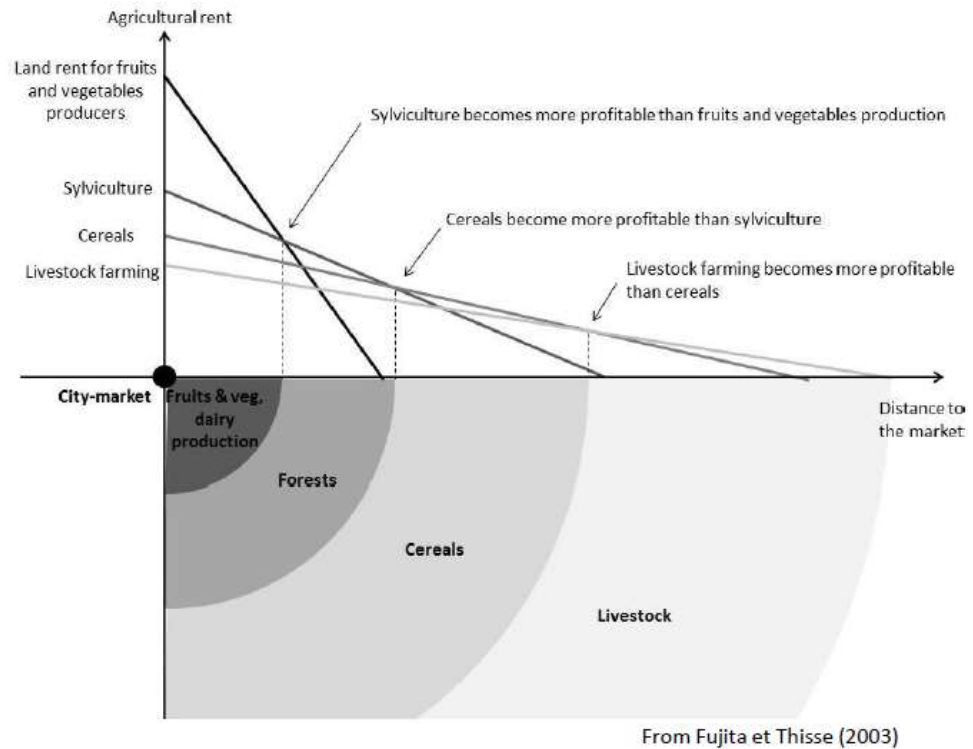
Land-market and competition for land-use

Now we explore the specific issue of farmland prices, which is of high interest when studying urban and suburban agriculture. Indeed, we often notice that land located near cities is more expensive than land

located further away. This can be a high constraint for agricultural production. To understand the historical reasons of farmland prices patterns, we present the theoretical insights of the von Thünen model. This model presents spatial patterns of agricultural activities around a city centre linked to land rent theory and optimal equilibrium based thinking. The land rent theory explains that due to little transportation costs is able to earn more and is thus willing to pay more for an hectare of land located near the market (city).

The model

Land equilibrium



Theoretically, the optimal configuration implies that:

- near the city with low transportation costs and higher land prices:
 - o perishable and fragile production
 - o production directly traded to consumers
 - o production with high added-values
 - o production which does not need much space
 - o more intensive production
- further away from the city with higher transportation costs and lower land prices:
 - o products that can be easily stored and moved
 - o low added-values per hectare
 - o activities that need more land.

The most important limitations of the von Thünen model are:

- distribution and market structure have evolved
- multi-centric cities
- assumptions of the model (no geographical heterogeneity, etc.).

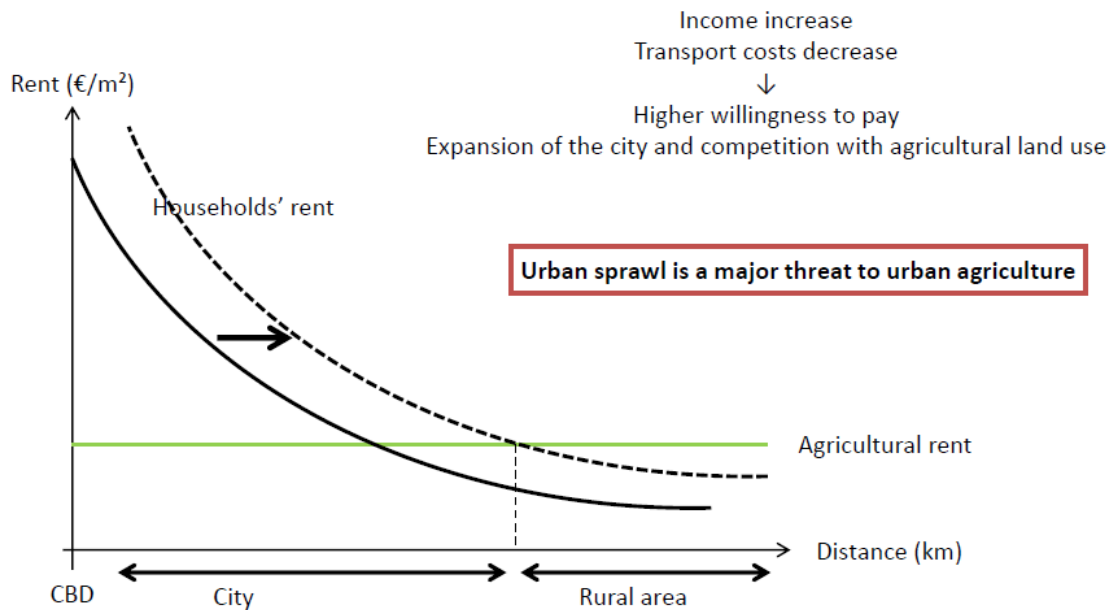
Some of von Thünen statements are still observable in recent situations: land prices decrease on average with increasing distance to the city and farms are more intensive near city centres. However, the von Thünen model cannot fully explain farmland prices patterns around cities.

Let us turn to a more contemporary analysis and see implications for agricultural production. Nowadays, the land price distribution around cities is mainly explained by urban pressures and by farming measures. Parcels

of land around cities may potentially be artificialized and turned from farming into residential or other urban land uses. A parcel of developed land is far more profitable to the owner than land dedicated to agricultural use. Therefore, the closer we get to the city, the more expensive is the land.

The theoretical insights of von Thünen on farmers' location choice may also be applied to households in their residential location decision. Assuming that most households work in city centres, they value their accessibility to the city centre and are therefore willing to pay more for housing located near the city centre.

The case of residential location choice



High land prices near cities are a strong constraint for urban farmers. They often compensate these high prices by:

- renting smaller parcels of land, but investing in a lot of equipment to allow higher production (greenhouses, technology, innovation, ...)
- adding revenue streams (vertical integration, direct sale, services, diversification) independent from land resources.

Urban externalities and externalities of production

An important specificity of agricultural products supply is the provision of other services, apart from the production of food itself. This may have implications in terms of opportunities and constraints, especially in an urban or suburban context. Externalities are – from an economic point of view – indirect consequences of the action of an economic agent on the welfare of another agent, which is usually not taken into account in the market or in the price. They can be positive (welfare improvement) or negative (welfare reduction). Positive externalities are for example landscape maintenance, cultural heritage, preservation of biodiversity, while negative ones include water pollution, soil impoverishment, greenhouse gas emissions, etc. For further details, see Module 2.



Assignment 5.1

In order to conclude and review the main facts and observations, which have been developed in this chapter, summarize constraints and opportunities of urban farming (focus horticulture) regarding to various aspects in a table format like this one:

OPPORTUNITIES	CONSTRAINTS
In terms of land price and land-use patterns	
In terms of food distribution	
In terms of demand and consumers' requirements and needs	
In terms of provision of other services (multifunctionality)	

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5.1.2 – Qualitative market research

The changing nature of urban agriculture means that roles and skills set are evolving. In this sub-chapter we will look at 'the sharing economy' with some examples from Urban Green Train. The role of technology and what soft skills are required to be successful at urban agriculture will conclude the discussion.

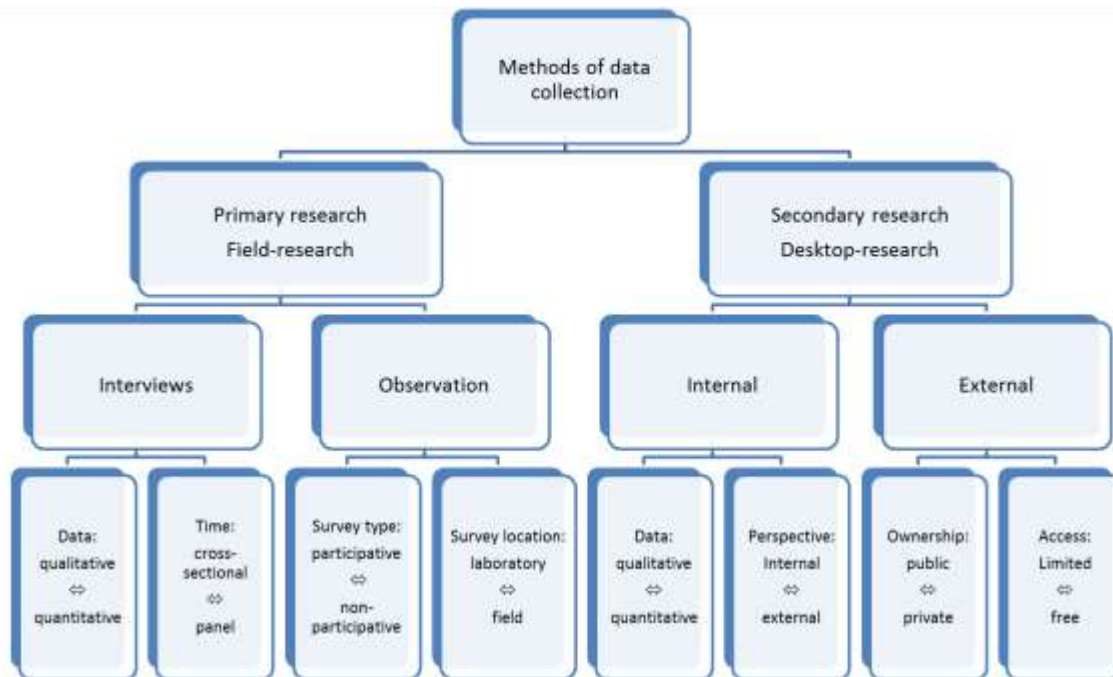
With the average age of farmers rising sharply in areas such as Europe and North America, the issue of who will farm in the future is emerging as a key policy concern. High land prices makes entry into the field difficult for many. Urban agriculture provides an opportunity for people who want to farm with the many benefits of living in cities. This brings into play new forms of organization not typically associated with rural agriculture, such as the emergence of the 'sharing economy' (discussed in 1.4.2).

As mentioned above; trends and consumption patterns vary across countries and regions, which demands targeted market research. (Qualitative) market research aims to lead to customer-oriented businesses, which consider needs, wants, desires, demands of (potential) customers and stakeholders.

Market research follows ideally a certain iterative order:

1. Definition
 - a. Definition of the problem
 - b. Fixing the objectives
2. Design
 - a. Develop hypotheses/research questions
 - b. Determine information sources and survey methods
 - c. Time and budget planning
3. Data collection
 - a. Acquisition and training of personnel
 - b. Organisation, implementation, and monitoring of data collection
4. Analysis
 - a. Analysis, consolidation, and interpretation of data
5. Documentation
 - a. Reporting
 - b. Presentation of results and conclusions

Generally, a huge number of methods of data collection exist. Out of these methods, you have to choose the one, which suits your market research most. First, you have to differentiate between primary and secondary research. We focus in qualitative market research solely on primary research (field research), although also secondary research holds some advantages like low cost and immediate access to data. But desk research has also some disadvantages, like being not up-to-date, doubts about objectivity and accuracy, aggregation of data, etc.



The qualitative methods in field research cover interviews and observations. Interviews are a method of data collection whereby persons are asked to give information about issues raised by the researcher. The degree of standardization differentiates qualitative (low degree of standardization) from quantitative ones (high degree of standardization). The objectives of qualitative interviews are:

- To represent the subjective viewpoint of the interviewee(s),
- To understand causes, background, and interactions, and
- To structure a new research area and to generate testable hypotheses.

They are characterized by a flexible and open dialogue, which allows extensions and changes of questions. Deliberate interactions between interviewer and interviewee lead to higher information contents compared to highly standardized quantitative approaches. The received data is verbal and non-numeric. The types of qualitative interviews are:

- Qualitative personal interviews
- In-depth interviews
- Narrative interviews
- Expert interviews
- Group discussions
- Focus group discussions.

The analysis of qualitative interviews is based on interview minutes, minutes from memory, audio- or video-taping, and/or transcriptions. The pros and cons are synthesized in this table:

Pros	Cons
Flexible method, adaptable to many research contexts	Time- and cost-intensive
Possibility for interaction	High interviewer/observer requirement (quality of data depends on guidance of the interview)
Allows to identify subconscious issues	Data analysis is cumbersome
High explanatory power of the answers due to open discussion	No quantitative results
	Large space for interpretation

Observations build another important component of qualitative market research. Several different kinds of observations exist, e.g. eye-tracking, customer tracing, shopping behaviour, web-page and app usage patterns, product handling, media usage, work routines, which are recorded mainly with protocols.

5.2 – Planning the business

5.2.1 Business Models of urban agriculture

UA offers social and ecological benefits to society - but it also has an economic dimension: well-run urban farms and projects are "hidden champions" of urban green development strategies! Two surveys, carried out by EU-funded COST-Action "Urban Agriculture Europe" and Erasmus+ project "Urban Green Education for Enterprising Agricultural Innovation", identified among a great range of diverse and successful case studies six basic business strategies, in practice mostly followed in combinations. Successfully applied, these strategies turn enterprises and projects economically viable towards conditions under which "agribusiness as usual" would not have a chance in future. Business models of UA are often quite innovative, and enterprises and projects serve as "living laboratories" for future farming. This fact should serve as a strong argument for political support by local, regional and European decision makers.

The Cost reduction strategy is typically used by comparable large and middle size agricultural and horticultural operations, which seek to bring down their costs per unit by scaling-up the production, mostly using capital intensive state-of-the-art technology. But there are also ways for small and medium urban farms and projects to apply that strategy, for example by specialization in high-value horticultural crops, by exploring synergies with other industries like re-using surplus energy or organic waste from them, by decreasing harvest costs through self-picking schemes or by support of voluntary labor.

The Differentiation strategy is frequently applied in urban areas and means to create distinctions from mainstream farming in production, processing and/or marketing. It helps to survive in very competitive markets with low producer prices, suitable for small farms and part-time farms without possibilities to increase their productive area. Its success base is personal, transparent and reliable producer-consumer relationships. Differentiation is often linked with direct marketing and own processing: freshness, taste, locality, tradition and personality can be convincing selling propositions to consumers.

Adding economic activities from outside of agriculture, as promoted in the Diversification strategy is another answer to increased urban pressure on land. This strategy is often used by middle size peri-urban farms, which effectuate in parallel activities in some or even many business fields, including services close to agricultural production, like agro-tourism, horse keeping, leisure activities, care farming, ecological education and training, green waste recycling or landscaping measures. Diversification is very demanding for the management, which has to create synergies between the various activities and to "use clever" fixed farm assets for reducing their costs. A second type of the diversification is realized by institutions with key activities outside farming: they engage as a diversification strategy themselves in agricultural or horticultural activities. These activities are related with societal benefits, often focusing on inclusion of disabled or socially disfavored persons.

In opposition to exclusively profit oriented business models and as expression of a new civil society, initiatives based on the Shared economy strategy increasingly come up. The production is organised collectively and shared - but also required resources are jointly mobilised and managed, including land, labor, credit, tools, machinery, network contacts and knowledge. Community initiatives, workers cooperatives, crowd funded or crowd labor projects are following this strategy. Combinations with other business models are promising: examples are social enterprises focused on job creation and work income, Community Supported Agriculture (where people take a share in the harvest or even in the farm as such) and more. Shared economy initiatives in UA are social laboratories, which in fact claim to be more than a new way of food production and distribution: starting from a new consciousness about nutrition, food and food systems, some of them go for reclaiming new food sovereignty for urban dwellers and for founding a new civil society.

The Experience strategy is based on the insight that more value is added by providing memorable experiences than by providing basic goods or services: it means selling rather a story than a physical product. It requires high skills in customer relationships and marketing, but it can be founded on relatively small production plots. Urban farms are capable of staging unique experiences precisely because of the ultra-short distance between them and consumers - and can create a direct and very exciting interaction in the city between opposing phenomena such as nature and culture, green space on one side and grey buildings and infrastructure on the other side. Place-making and training or leisure activities (for example gastronomic experiences) are important elements within this strategy that are combined with food production.

The Experimental strategy in UA is based on initiatives that explicitly integrate technological innovation processes that address societal needs, for example mitigation of climate change, prevention of environmental pollution and improved resource efficiency. Often they are especially suited to respond to urban contextual settings, using abandoned buildings, spaces and synergies with other structures. Innovations range from production (e.g. aquaponic systems or artificial lighting for indoor cultivation) over processing (e.g. recycling of urban waste products) to external functions (e.g. re-vitalisation of urban brownfields). An important characteristic is that new technologies, which are still in development, are at the core of the value propositions. Agricultural production plays often a secondary role, and the applied "vanguard" technologies are used as central elements of their marketing.

Within all strategies UA has to adjust itself to the urban environments by using the existent opportunities, by dealing with urban disadvantages, and wherever possible by turning the urban location into a market asset. Businesses, which ignore urban demands and conditions, struggle to maintain economically viable, give up or do not develop beyond the start-up phase. For choosing the right business model, entrepreneurs and project partners should first define their starting position: their resources, their objectives, their strengths, weaknesses, opportunities and threats. Business models, which are successful in practice, are mostly reflecting different combinations of the above described strategies. A lot of them can be favorable, depending of the starting position from individual, but also from societal points of view.

The six strategies in short:

- If you plant wheat in large scale to bring down your operation costs:
This is the **cost reduction strategy**.
- If you plant a specific variety of wheat, mill it and sell bread from it:
This is the **differentiation strategy**.
- If you plant wheat and offer cake from it in a farm coffee shop:
This is the **diversification strategy**.
- If you plant wheat jointly with partners and share the harvest:
This is the **share economy strategy**.
- If you plant wheat, and organize an event for clients to mill it and to bake their own bread:
This is the **experience strategy**.
- If you plant wheat on rooftops or in-house:
This is the **experimental strategy**.



Assignment 5.2

Watch the following videos on urban agriculture initiatives [Uit Je Eigen Stad](#), [Rotterzwam](#) and [Arvaia](#) and comment on their basic business model strategy.

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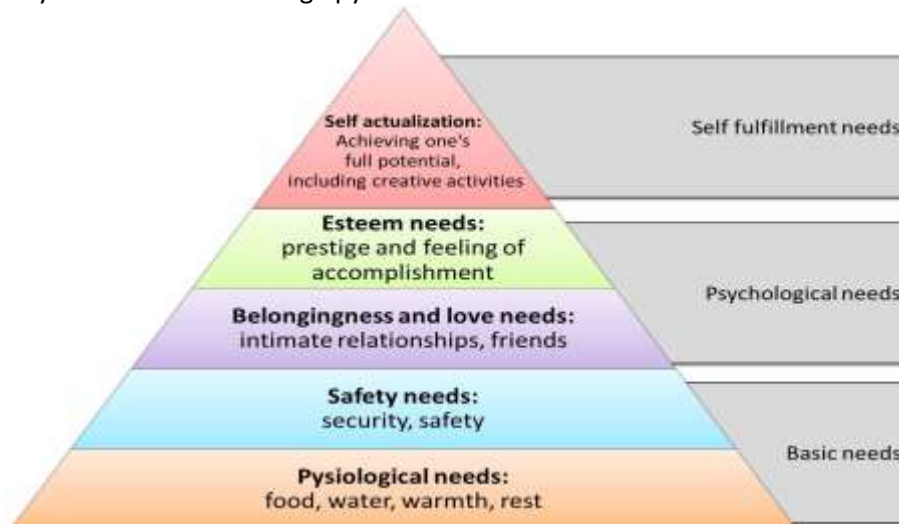
5.2.2 Business Model Canvas and Value Proposition Canvas

Introduction

It is a phenomenon for all economists: in theory most markets in industrial countries with high living standards should be saturated, but there are still options to lance new products and services and to achieve economic growth. This is also true in food markets, which can be considered as saturated in general in the countries of the EU. However, a new market player entering a saturated market will always lead to a certain level of driving out competitors - and this is only possible due to a convincing value proposition linked to a to a strong unique selling proposition (USP). The value proposition is the argument, why a customer should buy your product or service and the USP is the argument, why customers should buy your product or service instead of alternative goods from competitors. You can call it also the argument for differentiation from competing offers. So, value proposition and USP are directly linked.

Before going in detail, we should understand which kinds of needs of customers exist in general. Following Abraham Maslows famous hierarchy of needs (McLeod 2016 after Maslow 1943), human needs follow a ranking beginning from basic needs, coming to psychological needs and ending with self-fulfillment needs (see picture).

The basic hierarchy of needs is a five-stage pyramid include:



Hierarchy of human needs. Source: McLeod 2016 after Maslow 1943.

For markets and demands, this model has some interesting implications: once needs of a certain level are fulfilled, needs of the next higher level(s) become relevant - but people may be also looking for improving a "better" covering of needs within a level, in which their needs are already satisfied to some extent. Therefore, there are coming up new needs in a horizontal and in a vertical way, once a certain need is fulfilled - and we can assume an "endlessness of needs" (which is a driver for continuous economic growth and offering always new business chances).

For a business idea and a business model it is quite important to analyze first the potential needs of your potential customers - are they looking for basic needs, for security needs, for psychological needs or for self-fulfillment? Or are their needs a combination of all of these issues, and which kind of need level has which relevance? Once you have a business idea, try to analyze how it fits with customer needs - or ask first for their needs, and then develop your business idea around them.

Finally, also the business strategy of your business model depends upon the hierarchy of needs and upon the question, which kind of needs you want to cover with your offer: "cost efficiency" may be a good strategy for a business model oriented to basic needs, "differentiation", "diversification" and "the commons" may be well oriented to psychological needs and "experience" may be well fit for self-fulfillment needs.

For finding an exciting and innovative business idea, there are no specific "recipes" - just brainstorm, discuss with your friends, look which ideas are brought up and followed by others - and look on ideas, which are providing "fun" for you and match with your dreams, wishes, skills and your "personal type".

Once you have a product or a service business idea, you should think it through, discuss it, test it - and you should shape its specific value proposition (and its USP as well) - this will be the core of your business model and the base of your marketing strategy.

However, a lot of newly introduced products and services are not a success - often, because their offer did not match the demand, or let us say that enterprises developed or produced stuff that customers do not want. Failure rate of new products in general and in food market is very high

Business models

In literature concepts of business models to set and analyze businesses rose in the mid-1990s (Henriksen et al., 2012). Many different definitions and interpretations of business models are in use; nonetheless a common understanding of business models is obvious. "It is thus widely accepted that the business model concept is emerging as a new unit in analysis, that business models emphasize on a system-level a holistic approach towards explaining how firms do business, that organizational activities play an important role in the various conceptualizations of business models, and that business models seek to explain how value is created and captured." (Henriksen et al., 2012). The identification of the "who", "what" and "how" are essential for business models. Business models are suitable for an overview of value creations and captures, relationships, success factors and comparisons with other competing companies.

Business Model Canvas

Osterwalder, Pigneur and more than 470 practitioners from 45 countries wrote "Business Model Generation" including the Canvas Business Model (Osterwalder and Pigneur, 2010). They define, that "a business model describes the rationale of how an organization creates, delivers, and captures value" (Osterwalder and Pigneur, 2010). The Canvas Business Model is mentioned as simple and understandable, while not oversimplifying entrepreneurial activities. It is a strategic management template to document existing and even to develop and visualize new business models. The four main components in the Canvas Business Model are customers, offer, infrastructure and financial viability. These four main components are the backbone of nine basic building blocks, which are setting the Canvas Business Model like a blueprint (Osterwalder and Pigneur, 2010). Canvas Business Model is a tool, which provides helpful overviews of companies to emphasize key success factors, to detect barriers, to compare competitors and to generate business ideas and innovations. "Although the canvas has a simple structure, it forms a complex system of interdependencies between the different elements" (Henriksen, et al., 2012).

The nine basic building blocks should be analyzed in the order named in the following figure:

8. Key Partnerships <i>The network of suppliers and partners that make the business model work</i>	7. Key Activities <i>The most important activities a company must do to make its business model work</i>	2. Value Proposition <i>The bundle of products and services that create value for a specific Customer Segment</i>	4. Customer Relationships <i>the types of relationships a company establishes with specific Customer Segments</i>	1. Customer Segments <i>The different groups of people or organizations that the company aims to reach and serve by its products and services</i>
	6. Key Resources <i>The most important assets required to make a business model work</i>		3. Channels <i>How a company communicates with and reaches its Customer Segments to deliver a Value Proposition</i>	
9. Cost Structure <i>All costs incurred to operate a business model</i>			5. Revenue Streams <i>The cash a company generates from each Customer Segment</i>	

Brief descriptions of the nine basic building blocks based on Osterwalder and Pigneur (2010) are supposed to give assistance in using this tool.

Customer Segments

Customers are “the heart of any business model” (Osterwalder and Pigneur, 2010) and therefore this building block is the first one to pay attention. Enterprises aim to obtain and serve different groups of people or organizations (Osterwalder and Pigneur, 2010). The clustering of these groups into segments with mutual needs, behaviors or other characteristics is of prime importance for the remaining eight building blocks of the Canvas Business Model. The authors defined different main types of Customer Segments:

- Mass market
 - no distinction between different Customer Segments
 - one large group of customers with comparable needs and problems
- Niche market
 - Specific, specialized Customer Segments
- Segmented
 - Customer Segments distinction with slightly different needs and problems
- Diversified
 - Unrelated Customer Segments with very different needs and problems
- Multi-sided platforms/markets
 - Interdependent Customer Segments

Value Propositions

Value Propositions are “the bundle of products and services that create value for a specific Customer Segment” (Osterwalder and Pigneur, 2010). Aggregated packs of products and services aim to the requirements of specific Customer Segments. The Values can be quantitative as well as qualitative (Osterwalder and Pigneur, 2010). Some often provided Value Propositions are newness, performance, customization, design, brand, price, cost reduction, risk reduction, accessibility and convenience. The Channels and Customer Relationships interlock the Customer Segments with the Value Propositions.

Channels

The interfaces of a company with their customers are communication, distribution and sales Channels (Osterwalder and Pigneur, 2010). Channels describe how an enterprise communicates with and reaches its Customer Segments to supply Value Propositions. An appropriate mixture of channels is crucial to satisfy customers. Enterprises can use direct (own stores, sales force, web sales) and/or indirect (partner stores,

wholesaler) channels. Channel phases consist of five steps, which are awareness, evaluation, purchase, delivery, and after sales.

Customer Relationships

Customer Relationships are the types of contacts linking an enterprise with specific Customer Segments. They “can range from personal to automated” (Osterwalder and Pigneur, 2010). The main forces for customer relationships are acquisition and maintenance of customers and boosting sales. Important Customer Relationships are personal assistance, which is based on direct interaction (face-to-face, phone, e-mail, etc.), dedicated personal assistance, self-service, automated services, communities and co-creation.

Revenue Streams

The money a company receives for sold products and/or services from Customer Segments result in Revenue Streams (Osterwalder and Pigneur, 2010). A bundle of ways exists to generate cash including the main two pricing mechanisms of fixed and dynamic approaches: asset sales, usage fees, subscription fees, lending/renting/leasing, licensing, brokerage fees and advertising.

Key Resources

Key Resources are the main assets, which are necessary to run a business model (Osterwalder and Pigneur, 2010). “These resources allow an enterprise to create and offer a Value Proposition, reach markets, maintain relationships with Customer Segments, and earn revenues” (Osterwalder and Pigneur, 2010). Key Resources, which can be divided in physical, financial, intellectual and human, are either of own possession or leased/purchased from partners.

Key Activities

Like Key Resources, Key Activities are required for Value Proposition creation and offering (Osterwalder and Pigneur, 2010). Key Activities are the important actions an enterprise has to do to run a specific business model. The main three Key Activities are production, problem solving and platform/network.

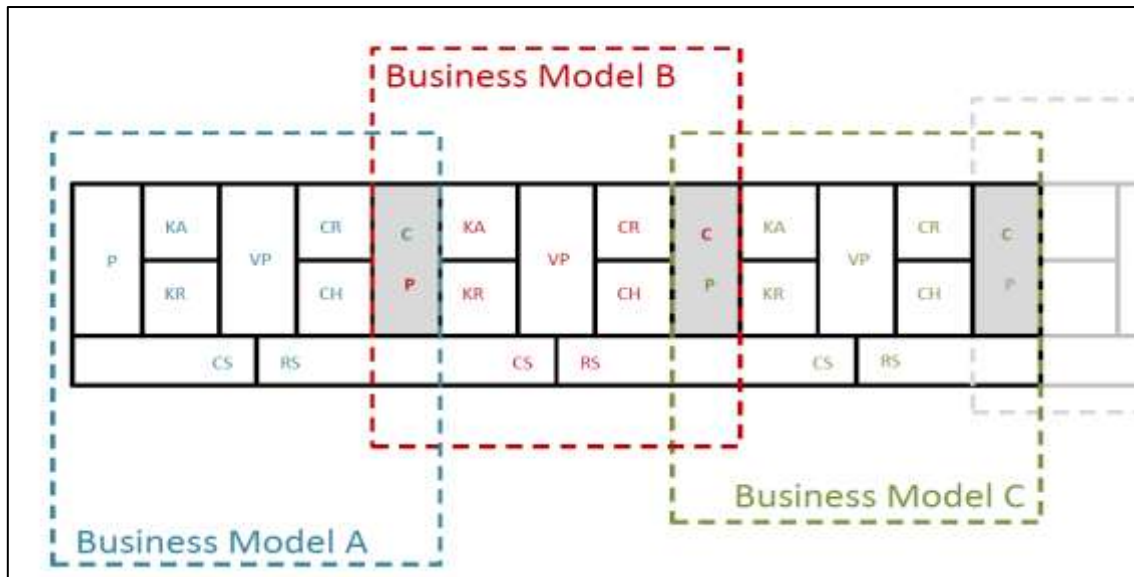
Key Partnerships

The network of suppliers and partners required for a working business model are the Key Partnerships (Osterwalder and Pigneur, 2010): enterprises ally with partners for business model optimization, for risk reduction or resource acquisition. Key Partnerships can be divided in four types of partnerships: strategic alliances between non-competitors, “coopetition” (cooperation + competition) as strategic partnerships of competitors, joint ventures to develop new businesses and buyer-supplier relationships. Partnerships are primarily based on three types of motivations: optimization and economy of scale, reduction of risk and uncertainty, and acquisition of particular resources and activities.

Cost Structure

The building block Cost Structure summarizes the most important costs occurring in a business model (Osterwalder and Pigneur, 2010). Money is required when creating and delivering value, maintaining contacts and generating revenue. Cost structures can range from fully cost-driven to fully value-driven. Cost-driven business models are focusing on cost minimization (low price Value Proposition, maximum automation, etc.), while value-driven business models are highlighting premium Value Propositions and personalized services. Fixed costs, variable costs, economies of scale and economies of scope are the dominating Cost Structures.

In processes, where different stakeholders and long trading chains exist, “it is likely that an analysis of one individual business model does not sufficiently represent trading partners located up and downstream in the chain” (Lundy, 2012). For consideration of influencing supplier and customer processes it is possible to link business models (see figure) or to create system-wide business models, which is only meaningful in case of significant cohesion and collaboration between value chain actors (Lundy, 2012).



Source: Lundy, 2012

The Canvas Business Model is in recent years more and more also in use for agricultural case studies. Some online accessible examples are mentioned here.

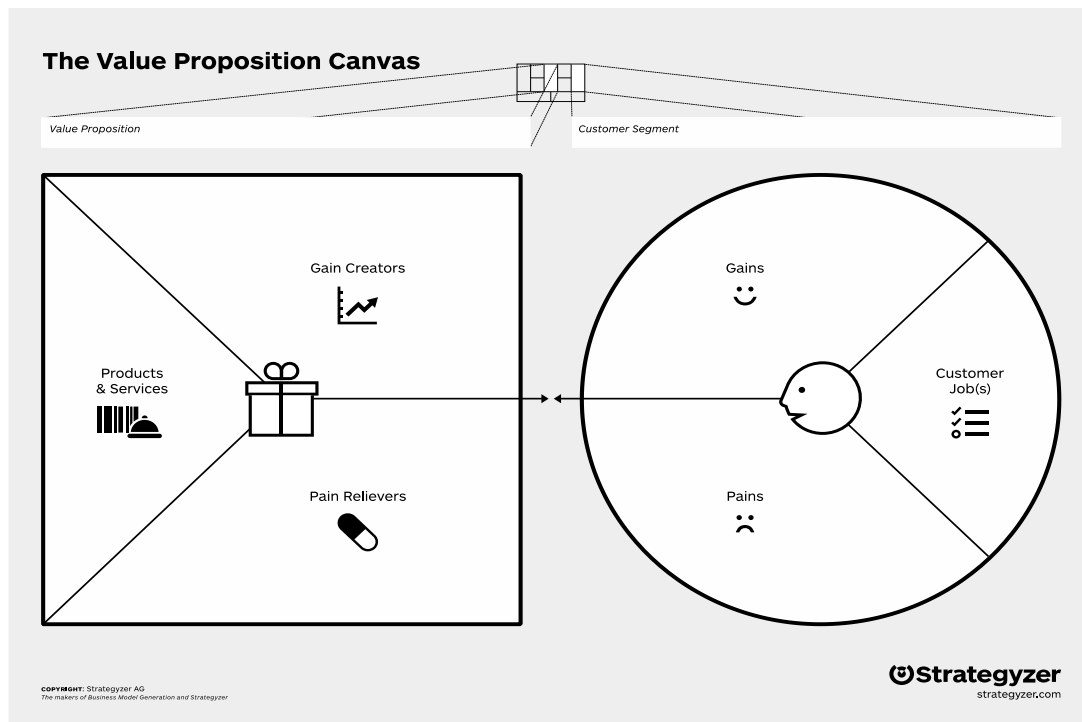
Value Proposition Canvas (VPC)

To reach the so called product - market fit, you should start to analyze very carefully your customer segments referring to your product idea, and then design your product features that they match well with customer needs. The authors of the Business Model Canvas, Alexander Osterwalder and Yves Pigneur, proposed together with Alan Smith (Osterwalder et al., 2014) a new practical tool "to help business people map, think through, discuss, test and pivot their company's value proposition in relationship to their customers' needs". This method, broadly accepted by marketing planners around the world, can be understood as supplement in detail to the business model canvas and will be explained in short (for deeper insights the lecture of the original publications is recommended; see "sources" at the end). It is also suitable to accompany young enterprises following a "lean start-up strategy" by experimenting with very basic pilot products (so called minimal viable products MVP) while looking for the product - market fit.

The objective of the VPC is to support you in a systematic way for value proposition design in that way, that it meets your customer's needs, helps to solve their problems and fulfils their "jobs-to-be-done" (see later). This is called product - market fit or problem - solution fit. A VPC is divided into two sides - a right hand side for the customer segments, and a left hand side for the value propositions (see picture). Both sides have to be well adjusted to one another for a successful business.

For practical use, you can print it out and write directly on the paper, or - if you are using it for group work - plot it as a poster, stick it on a wall and use sticky notes to fill it out and to discuss the single issues.

The following explanations are retrieved from Alexander Osterwalder's blog "Business Model Alchemist - Achieve Product-Market Fit with our brand-new value proposition", today to be found on www.strategyzer.com (Osterwalder, 2014). However, these guidelines are dedicated to start-up enterprises of all kinds and sectors, and in most cases, only a part of guideline questions will match with the background of your business idea. For providing you with complete information, all guideline questions to all issues are presented in text boxes.



Source: Strategyzer, 2016

Customer Jobs

Customer jobs are activities, which they want to be carried out, problems which they want to be solved or needs which they want to be satisfied. For example, a customer does not want a Hoover (this may be the product on the left hand side), but a clean house. The need is a clean house, the job to be done is cleaning it (to be recorded at the right hand side). He wants "eating" and/or "enjoying" as job to be done, the "tomato" as a product and "good taste" as a gain.

Customer Pains

These are "negative emotions, undesired costs, situations, and risks" that your customer can face or had faced before, during or after getting the job done. It is recommended to rank each of the pains found, and to indicate, how often they come up.

Customer Gains

These are the benefits expected or wished by the customer, and those, which would surprise him. The gains can be advantages in functional utility, social gains, positive emotions and cost savings. Again, rank the gains following the relevance to your customers, and remark, how often the gains may appear.

Products and Services

Based on the elaborated profile of your customers you can move to shape your value propositions. Start this by listing all products and services, which represent your value proposition / your offer. After this, set up a ranking of your products and services according to their importance to your customers.

Pain Relievers

The next step is to describe how your offered products and services create value for customers in that sense, that they decrease (or take away) customer pains (negative emotions, undesired costs and situations, risks related to customer jobs). Again, set up a ranking of pains according to their importance for the customers, which can be decreased or taken away by your products and services. Indicate also, how often each pain comes up.

Gain Creators

Finally, you have to demonstrate how your products and services create gains for your customers. How do they produce expected, unexpected or desired benefits referring to functional utility, social gains, positive emotions and cost savings? Again, set up a ranking of gains according their importance for the customers, which can be provided or increased by your products and services. Indicate also, how often each gain comes up.



Assignment 5.3A

Please think thoroughly and individually about an own urban agriculture business idea, one idea per person. Keep in mind the case studies you searched before and also the resources of the whole course. You are going to follow your idea for the coming chapters to result in a business plan!



Group work (if applicable)

Please come together in groups; preferably between four and eight persons per group. Within the group, each individual business idea receives special attention. This working group session aims to improve your business idea by adjusting it based on the group members' feedbacks and recommendations.

For each business idea, prepare and conduct an **elevator pitch**! The elevator pitch is a presentation of maximum two minutes per business idea aiming to convince the others of your idea!

When all group members presented their business idea in the elevator pitch, please make use of Edward de Bono's **six thinking hats method** and rethink the business ideas in your group. Please take the time required to pay attention to each of the ideas considering all six perspectives for each idea (see below). The six thinking hats method aims to look from different angles on an issue; here the urban agriculture business ideas:

White: This covers facts, figures, information needs and gaps. Drop the arguments and proposals, and look at the data base.

- Black: This is the hat of judgment and caution. The black hat is used to point out why a suggestion does not fit the facts, the available experience, the system in use, or the policy that is being followed. The black hat must always be logical.
- Red: This covers intuition, feelings and emotions. The red hat allows the thinker to put forward an intuition without any need to justify it. It gives full permission to a thinker to put forward his or her feelings on the subject at the moment.
- Red: This covers intuition, feelings and emotions. The red hat allows the thinker to put forward an intuition without any need to justify it. It gives full permission to a thinker to put forward his or her feelings on the subject at the moment.

- Yellow: This is the logical positive. Why something will work and why it will offer benefits. It can be used in looking forward to the results of some proposed action (but can also be used to find something of value in what has already happened).
- Green: This is the hat of creativity, alternatives, proposals, what is interesting, provocations and changes.
- Blue: This is the overview or process control hat. It looks not at the subject itself but at the 'thinking' about the subject. In technical terms, the blue hat is concerned with meta-cognition.



Assignment 5.3B

After deciding on an urban agriculture business idea (Assignment 5.3A) and (possible) adjustments caused by the before conducted group work tasks:

Please fill Canvas Business Model and Value Proposition Canvas for your own urban agriculture business idea; each one Canvas Business Model and one Value Proposition Canvas of your business idea (individually).



Group work (if applicable)

Please **present and discuss your business idea with Business Model Canvas and Value Proposition Canvas** in newly set groups of preferably four to eight persons. The discussion aims to validate your business idea and to receive additional feedback valuable for the coming tasks (writing a business plan). After receiving feedback from your group members you are able to adjust your individual business ideas if you want to.



Optional videos recommended for insights into Business Model Canvas:

<https://www.youtube.com/watch?v=RzkdJiax6Tw>

<https://www.youtube.com/watch?v=ks68qw5cBMc>

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5.2.3 Templating the business project

Business Plan Basics

A business plan

- is a "ticket" to your own enterprise
- is a plan / a schedule, how your business idea can be transferred into practice
- is your most important planning tool for starting a new enterprise
- informs other persons and institutions about your objectives and the measures to reach them
- serves as a basic document for negotiations with banks, investors, advisory services, business partners
- is often the base of their decision to support you / to cooperate with you or not.

Characteristics of business plans

In short, a business plan should

- inform
 - which products and services
 - to which customers
 - at which consumer prices
 - with which "structure" (production, marketing, distribution...)
 - on which markets
- cover all factors, which are influencing the success of your new business;
- should name chances and risks in a transparent, honest and plausible way;
- should convince potential partners and investors, that you have sufficient competence to run your business and - in case of investors - that they will get their money back including interest and profit;
- be treated flexibly, if new circumstances require an adaptation.

However, there is no official international structure of a business plan, but different methods to set up these plans follow mostly the same principles and cover the same contents. Here a business plan structure is presented following guidelines proposed by German Federal Ministry of Economy, which should be accepted by actors in other European countries as well. They structure the content of a business plan in the following way:

- 1 Summary**
- 2 Personal data of the founder(s)**
- 3 Business idea: product(s) and/or service(s)**
- 4 Market and competition**
- 5 Marketing**
- 6 Organisation and staff**
- 7 Legal form**
- 8 Chances and risks**
- 9 Financial planning and financing**
- 10 Attached documents**

The following chapters will give more information in detail.

Summary

This is the most important part, because investors and partners will read it first - and may only continue, if its content arouses their interest. A confusing summary will most likely prevent them to discuss your idea. So, a well written summary has to offer all important information about your business idea in a very short

but clear and precise way to arouse reader's interest. Do not give long general introductions and background information - just tell your "big points" = your arguments, why your start-up will be a success!

A summary should present short information about

- Founder(s)
- Business idea (product(s) and/or service(s))
- Unique selling proposition
- Market
- Marketing
- Distribution
- Legal Form
- Capital requirements and financing
- Date of the foundation of the enterprise.

Write the summary finally - and test it with your friends and family, whether they understand your business idea and whether the summary is able to convince them.

Personal data of the founder(s)

Here you have to present yourself and your partners. Tell your motivation for being an entrepreneur on your chosen business field, inform about your competence - your specific "hard" and "soft" skills, your formation, qualification, knowledge, professional experience. Besides technical knowledge, you should have and prove business knowledge as well.

Business idea: product(s) and/or service(s)

In this chapter, you have to convince your reader of your product(s) and/or service(s), and why they are better than those of competitors. Are there specific "added-values" for customers, compared to standard products on the market? What is the "Unique selling proposition" (USP) of your offer = what "makes the difference" from the viewpoint of a customer, if he buys your product(s) or service(s) compared to the goods of another enterprise.

Describe, how you create product(s) and service(s) you want to offer. Do you employ any specific (outstanding) production technologies? Then you should explain them - but in an understandable way for "non-experts". Attach meaningful photos and illustrations - more technical details can be put in an annex.

Finally, please inform here about your short term and long term entrepreneurial objectives = important development steps for your enterprise in the coming years.

Market and competition

This chapter is dealing with four issues: your market, your customers, your competitors and the location of your enterprise.

Your market: check and present data and information about the performance of the specific market, in which you act - how are consumer prices, sales and profits of existing enterprises performing? Is it possible "to earn money" in this market? Statistical data and enterprise data may be used later as assumptions for your own business plan - within the financial part in chapter 9.

Your customers: what are the specific needs and the purchase power of your potential customers? Describe, what would be the value-added from their viewpoint of your offered products and services. Are their specific customer segments - groups with specific socio-economic characteristics (family status, age, gender, purchase power, shopping behavior, cultural preferences....), which you want to address particularly? Ask your potential costumers - if possible, realize an own (small) survey and present its answers!

Your competitors: if you are entering an existing and profitable market, there are likely already other competing enterprises. What is their specific offer, which prices are they taking, what may be the amount of their annual sales, and how large is their market share? What are their USPs, their strengths and weaknesses compared to your new offer?

Your location: in principle, for any enterprise a good location is the one, where as many potential customers as possible are living or working nearby or are passing by regularly. Some competitors or enterprises with complementary offers improve e.g. the attractiveness of a location. Justify, how you choose your location. Get in contact with public institutions and public service providers and check all costs and legal conditions, which are linked to your location. More or less the same issues you have to treat with on "virtual locations" like in the web, if your enterprise will have a mere or a supplementary web presence.

Marketing

Please note first that marketing is more than advertising! Referring to marketing, there are four central questions:

- What is the value-added of your product(s) and/or service(s) for your customers? (This is directly linked with its Unique Selling Propositions USP)
- At what prices will you offer them? (Price policy)
- How will your product(s) and/or service(s) reach your customers? (Distribution policy)
- How will your customers be informed about your offer? (Communication policy)

Your offer: how you will produce your offer, you described already in chapter 3 - here you have to show, "how you bring your product(s) and service(s) to your customers or to the market". This is starting with the USPs and the value-added for your customers, but there are some more questions in detail. Are there any further specific development activities necessary to make your products "ready for the market"? Do you plan or have you already realized product tests and test sales? Do you have a quality policy, which measures for securing product/service quality? Are you applying for quality certification by an independent or public institution?

Your prices: show your price calculation and justify the minimum prices for every product/service based on your costs. Your price idea should not only cover your costs, but should be also competitive in the market (which prices are taken by competitors? Justify, why you want to set your prices higher or lower compared to their prices). Price policy is directly linked with your overall business strategy! But attention: this part can be realized correctly only after having set up the financing part; especially after having set up a full cost calculation with direct and operating costs per product/service.

Your distribution: how are your products coming physically to your customers, how do customers meet the location of services offered? Are you selling directly, or via middlemen? Are you using a web shop? Describe and justify your "distribution path". If you are looking for distribution partners, check and describe their competence and the distribution costs - often these costs require a significant share of the consumer price.

Your advertising: with which measures and via which channels will you inform potential customers about your offer? Describe and justify, why you are using a specific measure for a specific target group / a specific customer segment. Estimate a communication budget. First ideas or examples for mailings, announcements or spots are welcome.

Organisation and staff

You cannot do all work alone - who is doing what in your enterprise, are you planning to have employees and/or partners? What would be their individual tasks? Are you planning to outsource some tasks? Provide an organisation plan of your enterprise.

Set up a small staff planning table showing labour needs along first, second, third year.

What kind of labor contracts would you offer? What would be the total costs of labor? Please take in mind to calculate an overhead on wages per hour for social insurances, holiday times and for absence in case of illness.

Legal form

Which kind of legal form will your enterprise have? It may depend from the way to include potential partners and from bureaucratic requirements for the foundation as well. It is also possible (and often done) to change the legal form sometime after the start.

Chances and risks

No one can forecast the future, but it is helpful to think about possible changes of factors, which influence positively or negatively the success of your enterprise. Think about these factors, analyze them and describe how their changes may affect your enterprise and how you can probably react to them. This method is called "scenario formulation" (= an imaginable picture of the future, but not a forecast). It is recommended to formulate a so called best-case scenario and a worst-case scenario: ask for and describe the three most important chances and risks, which can affect positively or negatively your enterprise. Try to estimate for every chance and risk the practical and financial consequences for your enterprise, and explain how you would make use of the chances and how you would prevent or solve the problems caused by the risks. Investors and partners will accept risks - but they want to know about your competence to handle them.

Financial planning and financing

The financial part is the core of every business plan. Referring to financing, following questions are most important:

- What are your capital requirements? (Data delivered by investment plan, sales planning, human resources planning.....)
- From which sources will you cover them? (Data delivered by financing plan)
- Which sales and which expenditures are coming up in the first three years? (Data delivered by investment plan, sales planning, human resources planning)
- Will your enterprise have sufficient liquidity at its disposal at any time? (Data delivered by liquidity planning)
- How would it is profit and loss forecast in the thirst three years be; will it be profitable in the long run? (Data delivered by profit and loss account and by profitability calculation).

Your capital requirements plan: this plan shows how much money you need for all cost positions to start your enterprise and to run it in the first time, let us say within the first three years. Total capital requirements are composed by investment costs including foundation costs (taken from investment planning), by direct costs of production (taken from sales planning), labor costs (taken from human resources planning) and other operating expenses / general costs. Direct costs and operating expenses including labor costs have to be pre-financed by you, depending to the point of time, when you will get first incoming money by product and/or service sales. It is recommended not to calculate this point of time too optimistic. Finally, you - and your partners - have to live during the start-up phase of your enterprise - so you should either include a salary for you and your partners or you should be able to cover your private expenses from other funds.

Your financing plan: this plan shows from where you get the money to cover your capital requirements including some reserve for unforeseen problems, and what are the financial conditions (terms, interests, repayment rates, repayment-free periods). In general you should start about deciding how much own money you and your partners want to and/or can bring into the project (= equity capital). This can be realized practically in different ways and with different instruments. A high share of equity capital covering your capital requirements will improve success chances of your enterprise and conditions to get bank loans or loans from private investors as well. Usually the sum not covered by equity capital must be financed by liabilities, normally bank loans or loans of private persons, or other financial instruments. You should also check, whether your project is eligible for public support like specific loans and subsidies for start-up enterprises and for young farmers.

Your liquidity planning: the purpose of the liquidity plan is to show capital donors and commercial partners of input delivering industries the potential solvency of your enterprise at any time, let's say along the first

three years. A critical point of time can be the date, when repayment-free periods of time of loans are running out. The method of a liquidity forecast is just comparing all financial streams coming in and going out within a defined period of time, normally one month, only considering "real" costs and sales ("virtual" costs like depreciation are not part of this account). If the balance at the end of the month is positive, your enterprise is solvent. If there is a comparatively large surplus, this can be considered as a liquidity reserve to cover unforeseen increasing costs or decreasing sales.

Your profit and loss forecast/profitability calculation: this plan shows principally the development of your sales, your costs and your potential profit over the next time (short-term, medium-term, long-term). It can be realized with a profit and loss account per month or per year, but profitability can be demonstrated additionally with other methods of profitability calculation like the net present value method and the internal rate of return method. These both profitability calculation methods are more suitable to show profit potentials over longer time periods representing the total lifetime of an investment. It can be recommended to make use of them and present their results as well. In detail, the results of all of these calculations inform

- whether your sales will be able to cover your costs
- how long you will need to get first profit
- principal profitability of your operation in absolute sums
- relative profitability compared with alternative investment options.

Based on these data, you have to think, whether the profit is high enough to meet your expectations, to pay for your risks, to build up financial reserves for problems and enterprise development and to cover your costs for living (depending whether you have calculated a salary for you and your partners or not).

Attached documents

It is recommend to attach documents, like curriculum vitae (CV), contracts on partnerships and/or references on the legal form, technical documents, and other helpful explanations.

References

Bundesministerium für Wirtschaft und Energie BMWi (2016). GründerZeiten07 - Businessplan. Berlin, BMWi.

5.2.4 Financing

Financing and financial management are two important pillars of this sub-chapter. Financing is about the raising of financial capital via own and/or borrowed capital, while financial management is about the expense of financial capital via private investments or investments in a company. Investments are long-dated and for economic purposes, like investments in fixed assets, especially land, buildings, machines, and constructions for energy production, but also fixed assets like bonds and shares. Investments aim to generate profit, simplify work, and decrease business risks.

According to the legal position of capital's lender we differentiate between own capital (equity capital) and outside capital (liabilities). Additionally, internal and external financing have to be differentiated. Internal financing – meaning that the funds are from the company – can be done via self-financing (profit) and re-grouping of assets (land sale, depreciation). External financing from outside the company covers deposits financing (company's private deposits), equity capital (involvement by cooperation), and credit financing (credit of a bank or from others). Crowd funding, which belongs to credit financing, is a newer form of financing. The specificity is that there is a crowd of private people lending money, mainly rather small amounts. This can be of special interest when you establish a new urban agriculture business. In the internet, you can find platforms to advertise your idea aiming to find lenders. Additionally, also mixed forms of financing exist, which are a mixture between own capital and credit financing, mezzanine financing. Two examples are silent holdings (silent shareholders give capital, which is not liable; the silent shareholder has no influence in business management and decision making) and participation certificates / coupons, which is like a credit, but the interest rate depends on the company's profit. Venture capital is a form of equity capital, although mainly within bigger companies: if there is a start-up with comparable high risks and no bank is willing to give a loan, then there is the possibility to find a venture capital company willing to finance the start-up phase. After some years, the venture capital company takes out their money.

In terms of the timeframe credit, financing can be differentiated into:

- Short-term borrowing (< 1 year)
 - o Overdraft
 - o Trade credit
 - o Term loan
- Medium-term borrowing (1-5 years)
 - o Credit by producer or supplier
- Medium- and long –term borrowing (> 5 years)
 - o Annuity loan
 - o Amortization loan
 - o Bullet loan

Here is an example for an annuity loan with the annual plan of debt services. The loan amount is 10'000 €, the duration five years, and the interest rate 5%.

Year	Loan	Annuity	Interest (5%)	Repayment
1	10.000,00 €	2.309,75 €	500,00 €	1.809,75 €
2	8.190,25 €	2.309,75 €	409,51 €	1.900,24 €
3	6.290,01 €	2.309,75 €	314,50 €	1.995,25 €
4	4.294,76 €	2.309,75 €	214,74 €	2.095,01 €
5	2.199,75 €	2.309,75 €	109,99 €	2.199,76 €
Total		11.548,75 €	1.548,74 €	10.000,01 €

Excel provides already established formula to calculate annuities. The annual payments (annuity) are:

Annuity ('recovery factor') = Initial capital x annuity factor

The annuity factor is calculated via the following formula: $((1 + i)^n \times i) : ((1 + i)^n - 1)$

i: interest rate, e.g. 0.04 for 4 % interest rate

n: number of years

The annuity remains the same for the whole time of repaying the loan. Contrarily, the amortization loan is characterized by changing (shrinking) debt services year by year.

Year	Loan	Debt service	Interest (5%)	Repayment
1	10.000,00 €	2.500,00 €	500,00 €	2.000,00 €
2	8.000,00 €	2.400,00 €	400,00 €	2.000,00 €
3	6.000,00 €	2.300,00 €	300,00 €	2.000,00 €
4	4.000,00 €	2.200,00 €	200,00 €	2.000,00 €
5	2.000,00 €	2.100,00 €	100,00 €	2.000,00 €
Total		11.500,00 €	1.500,00 €	10.000,00 €

Banks or other lenders demand securities to receive loans. In agriculture, these are often properties (land, buildings) or the financial performance of the company. When asking the bank for a loan they want to receive information on capital demand, balance sheet for three years, overview of assets and debts, loss and profit forecast (profitability), and liquidity plans. Here are some important issues when negotiating with a bank:

- Ask for the effective interest rate of the loan (all costs included)
- Ask for additional fees that are not included in the effective interest rate
- Ask for the possibility of special payments
- Ask for a later repayment start! (to increase amount of money in the start-up phase)
- Ask for repayment gaps (time frames without repayments) in case of money shortages

Before approaching a bank you should be familiar with terms like valuta, nominal amount, disbursement of loan/net pay, disagio, nominal interest rate, and effective interest rate. The interest rate depends also on the banks rating of you/your business and provided securities. The internal rate of return method calculates the effective interest rate of a loan, which is one of the key numbers to decide when contracting a loan. Excel provides a function for this: IRR.

An important rule of financing is that you need matching maturities for financing and investment. Thus, short-term liabilities should be financed by available capital and fixed assets should not be financed by short-term liabilities. Additionally, a minimum of equity capital is necessary for risk mitigation and access to additional borrowed capital.

5.2.5 Detailing the business – Business Plan Economics

This chapter is about writing chapter 9 of a business plan: “financial planning and financing”. Some introductory information on financing are presented in the above chapter 5.2.4 Financing. More detailed information on how to write this chapter is presented here. It has to comprise the following elements:

- Capital requirements plan
- Financing plan
- Liquidity planning
- Profit and loss calculation / profitability calculation (incl. gross profit calculation).

There are several - mostly excel based - public domain software tools offered by institutions promoting start-up enterprises, which may help you to solve these tasks (SWICE-Calc, developed by South Westphalia International Center for Entrepreneurship (SWICE) at the South Westphalia University of Applied Sciences SWUAS - all rights reserved; free for members of this course). For deeper understanding and if you don't have access to a suitable tool we provide here information for setting up these plans on your own step by step. We recommend starting with gross profit calculations for each of your products and services as central elements of your profitability calculation.



Step 1: Setting up gross profit calculation(s)

For every product and service type, you have first to think about the possible sales price per unit. Then you have to decide about the reference base of your gross profit calculation: do you want to calculate per product unit, per field area (ha), per greenhouse area (m²)? Multiply number of units by sales price and you get your sales per reference base. Then you have to think about the cost of goods sold (COGS) - mainly the sum of your (raw) material costs; in farming e.g. expenditures for input purchases like for seeds, seedlings and plants, fertilizer, irrigation water, energy or other material, which is not "durable" or which cannot be used for more than one production period. How gross profit calculations can look like is demonstrated in the following tables.

	Crop yield	Tomatoes 2 pieces per m ²			cucumbers 1,4 pieces per m ²		
		€/unit	unit/m ²	€/m ²	€/unit	unit/m ²	€/m ²
Sales	1. class	1,00	36,00	36,00	0,36	58,00	20,88
	2. class	-	-	-	0,60	3,78	2,27
	Unsold	-	-	-	-	-	-
	Proceeds			36,00			23,15
Cost of goods sold (COGS)	Fertiliser			1,34			0,08
	Biological plant protection			0,25			0,50
	Variable machine costs			0,25			0,20
	Seasonal worker			8,31			5,32
	Package			1,29			1,14
	Distribution costs			1,99			1,69
	Foil			0,22			0,22
	Rock wool			0,97			1,50
	Other			1,02			0,25
	Interest payments for prefinancing COGS	4%		0,07	4%		0,07
	Total cost of goods sold (COGS)			27,47			14,87
	Gross profit			8,53			8,28

Exemplary gross profit calculation for vegetables in polytunnel production (Sächsisches Staatsministerium für Umwelt und Landwirtschaft, 2015)

	Crop yield	Lettuce 90.000 pieces per ha			Carrots 100 kg per bag		
		€/unit	unit/ha	€/ha	€/unit	unit/ha	€/ha
Sales	1. class	0,55	67.500,00	37.125,00	67,99	450,00	30.595,50
	2. class	-	-	-	-	-	-
	Unsold	-	22.500,00	-	-	150,00	-
	Proceeds			37.125,00			30.595,50
Cost of goods sold (COGS)	Seeds	0,05	90.000,00	4.320,00	82,39	15,00	1.235,85
	Nitrogen	0,97	150,00	145,50	0,97	125,00	121,25
	Phosphor	0,88	40,00	35,20	0,88	60,00	52,80
	Potash	0,45	190,00	85,50	0,45	300,00	135,00
	Magnesium	1,76	50,00	88,00	1,76	50,00	88,00
	Chalk	0,05	300,00	15,00	0,05	300,00	15,00
	Subtotal fertiliser			369,20			412,05
	Herbicide			138,00			93,00
	Fungicide			164,00			159,00
	Insecticide			181,00			28,00
	Subtotal plant protection products			483,00			280,00
	Insurance, soil analysis, other			9,00			9,00
	Tillage	45,35	1,00	45,35	45,35	1,00	45,35
	Seed bed	29,86	2,00	59,72	13,25	2,00	26,5
	Planting	180,00	1,00	180,00	19,04	1,00	19,04
	Fertilization measures	2,16	2,00	4,32	2,16	2,00	4,32
	Plant protection measures	3,39	4,00	13,56	3,39	5,00	16,95
	Irrigation	2,76	80,00	220,80	2,76	120,00	331,2
	Chipping	13,02	2,00	26,04	13,02	-	0
	Harvesting	665,00	1,00	665,00	234,00	1,00	234
	Transport	0,05	5.625,00	281,25	0,23	600,00	138
	Processing	-	-	-	0,26	600,00	156
	Remove crop residues	17,56	1,00	17,56	17,56	1,00	17,56
	Variable machine costs			1.513,60			988,92
	Benefit of gasoil			- 134,00			- 93,00
	Seasonal worker	9,00	404,00	3.636,00	9,00	190,00	1.710,00
	Package	0,08	5.625,00	450,00	0,16	450,00	72,00
Distribution costs	0,14	67.500,00	9.450,00	16,92	450,00	7.614,00	
Interest payments for prefinancing COGS	4%		33,47	4%		43,89	
Total cost of goods sold (COGS)			20.130,27			11.036,86	
Gross profit			16.994,73			19.558,64	

Exemplary gross profit calculation for outdoor grown vegetables(Agricultural Chamber Lower Saxonia, 2014/15)

Please pay attention to the fact, that seasonal work - which is paid directly dependent to production activity (e.g. crop picking paid per number of units or kg harvested) - can be integrated in COGS and gross profit calculation, but based on gross expenses for the employing enterprise. Gross expenses per hour seasonal work may differ from country to country due to specific national regulations like minimal wage laws and/or eligibility to social insurance payments or not. Please research / ask for this specific regulations and eventual "add-on" labour costs for employers.

Having all COGS together, calculate their sum per reference base and per unit. Finally, you deduct COGS per unit from product price, and you get gross profit per unit. This first key figure is used in practice for short term monitoring, but for planning a business it provides only a rough orientation: Gross profit should be rather positive, because you have not yet considered operating expenses, interests or taxes.

Step 2: Calculating labour costs of permanent employees for operating expenses

Costs for employees with a contract per month, per year or without limit of time have to be treated different. They are part of operating expenses, not of COGS. Here you have first to think and to decide how many employees you need for what kind of tasks, and upon your own role as well: you and your partners can be employed by your enterprise, and/or get a part of the net income of it. This decision depends on the type of your business project and your personal needs. Again, you have to research for national regulations determining full costs per month of an employment - in general you have to start with the salary before tax (= gross salary), and adding employers cost for social insurance, specific payments for holidays or a 13th salary and eventual further costs linked with the employment of a person. Depending to your reference country, you have to calculate a surplus from 30 % - 50 % to the salary before tax.

Step 3: Calculating further general costs for operating expenses

Besides fixed costs for machines and buildings (which will be treated later), there are further general costs within operating expenses for:

- Outside services
- Telephone and internet
- Rents
- Utilities
- Insurances
- Repairs and maintenance
- Advertising and marketing
- (Possible) patents and licenses
- Other expenses

Think about them and estimate these cost positions.

Considering value added tax (VAT)

In general, every enterprise in most countries of the world is obliged to pay so called value-added tax (VAT) on the difference between their sales and their input purchases. In practice, they receive the VAT from their customers and they pay VAT to their input providers - and if there is an internal VAT surplus, they have to deliver it to their tax office. Very often there are complex national VAT regulations with exceptions and/or specific regulations for small enterprises, start-ups and farms. Furthermore, different VAT rates per country and per product sector are applied as well. E.g. general VAT rate in Germany is 19 %, but for food sold on markets and shops it is 7 % - and in restaurants 19 %. For your calculations, it is recommended to set VAT-rates to zero and calculate all input prices and sales without VAT for the first planning, because VAT is usually a "running through position" not affecting profitability, but liquidity of an enterprise. However, for a correct liquidity planning, VAT should be calculated later.

Step 4: Investment plan

You have to think about necessary fixed assets for your new enterprise, your "investments". In short, these are all production inputs / equipment, which are "durable" or can be used more periods (years, seasons, etc.). Typical fixed assets are machines, buildings (property), land, technical equipment or "intangible" assets like patents, licences or other forms of intellectual properties. Further elements of an investment plan are "current assets" (assets, which you can be use more than one year, but you calculate them with their full cost in the year of their purchase) and "start-up costs" (all costs directly linked with the foundation of a new enterprise; see table).

3						
4	Period	Pre-start	1	2	3	4
5						
6	Investments					
7	Long term assets (from "Investments and depreciation")					
8	Machines	0,00	20.000,00	0,00	0,00	0,00
9	Property	0,00	100.000,00	0,00	0,00	0,00
10	Equipment	0,00	15.000,00	0,00	0,00	0,00
11	Intangible assets	0,00	0,00	0,00	0,00	0,00
12	Other assets	0,00	0,00	0,00	0,00	0,00
13						
14	Current assets					
15	Inventory	5.000,00				
16	Working fund	5.000,00				
17						
18	Start-up costs					
19	Notary	500,00				
20	Business registration	500,00				
21	Consulting	1.000,00				
22	Lawyer	500,00				
23	Marketing	5.000,00				
24	Website	2.000,00				
25	Other start-up costs	3.000,00				
26						
27	Total Investments	22.500,00	135.000,00	0,00	0,00	0,00

Exemplary investment plan, which is the core of the capital requirements plan (SWICE-Calc, 2016)

Step 5: Calculating depreciations for operating expenses

For all fixed assets / investments you should set up a small table with their acquisition costs, their useful life (in months or years), their date of purchase, their likely residual value after completed useful life and their depreciation (per month or per year). Whether you calculate per month or per year depends on your decision and on the nature of your production processes - if they are rather short, you can calculate on a monthly base, if they are longer (like e.g. in agriculture), you can calculate annually. Depreciation per year (per month) is calculated by following formula:

$$(\text{acquisition costs} - \text{residual value}) : \text{number of years (months) of useful life}$$

Attention, land has to be treated in a specific way: land is absolutely durable, and so there is no depreciation for it (and land costs are entering operating expenses only, if it is rented)!

Step 6: Capital requirements plan

The acquisition costs of your durable assets are in general the biggest part of your capital requirements completed by costs for initial working funds / inventory of production inputs and cost positions representing start-up costs as well. These start-up costs are e.g. positions like notary, business registration, consulting, lawyer, marketing, website and others (see table above). Finally, you have to estimate the capital need for covering your COGS, your operating expenses for labour and general costs and your personal living costs at least up to the date, when you will get money for your first sales - and it is recommended, to calculate with some reserves! If you have summarized all these cost positions, you have calculated your initial capital requirement.

Step 7: Financing plan and loans

Having now an idea about your initial capital needs, you have to think about the financing of them - you can realize that with different instruments of equity or debt financing (if missing background: see again chapters 5.1.1 and 5.2.4). In short, equity financing can be simply "own capital" (equity capital) provided in different ways, but also "silent holdings" - money, which someone puts in an enterprise without requiring active participation in management decisions. In smaller enterprises so called business angels and in medium-sized enterprises so called venture capitalists are often engaged in that way. Debt financing can be realized in general by shareholder loans - these are loans of enterprise owners - or by bank loans. Another important source for start-up financing can be public funds in form of subventions / aids. If you have decided about financing your operation, you can set up a financing plan showing the financial contributions to cover your capital needs by type of source (see table).

3					
4	Period	Pre-start	1	2	3
5					
6	Net receipts before financing (from "Liquidity planning")	-22.500,00	-163.987,50	22.312,50	-3.337,50
7					
8	Equity financing				
9	Equity capital	30.000,00			
10	Silent holdings				
11	Debt financing				
12	Shareholder loans	0,00	0,00	0,00	0,00
13	Bank loans	0,00	150.000,00	0,00	0,00
14	Other				
15	Public funding	10.000,00			
16					
17	Total financing	40.000,00	150.000,00	0,00	0,00
18					
19					
20	Current account overdraft	5.000,00	5.000,00	5.000,00	5.000,00

Exemplary financing plan, here following periods of time (SWICE-Calc, 2016)

The position "Net receipts before financing" is bringing in profits and losses as positive / negative contributions to the financing of the enterprise. "Current account overdraft" means the possibility of short term credit (at high interest rates...) on the running bank account; usually there is a maximum sum limiting the "overdraft" (= the maximum negative value, which your current bank account is allowed to have by your bank).

Step 8: Calculating interest payments

How much interest payments your enterprise has to provide at which time, depends on your financing instruments, and in detail on conditions of loans. If you have a loan financing, typically you can choose between an annuity loan and amortization loan (see chapter 5.2.4). Following the explanations of 5.2.4, you can calculate the annual (or monthly) debt service for your loans including the annual (monthly) interest payments and repayment rates. Interest payments are part of profit-and-loss calculation, but not the repayment rates (they have to be paid from net income, but the cost position "depreciations" within operating expenses are e.g. covering them).

Step 9: Liquidity planning

Economists like to say "liquidity before profitability" - and mean, that an enterprise can bear losses over some time - but if it is not able to pay its bills, interests and repayments for credits, it is really in danger. Therefore, you should take care of being always solvent - or "liquid". A liquidity plan has the purpose to demonstrate, that - if your business plan is running well - your enterprise will be able to pay its bills at any time (if missing

background: see chapter 5.2.4). Now you should have all data to calculate the liquidity plan of your start-up available, and you can set up a liquidity plan (see table).

3	Period	Pre-Start	1	2	3
4	Liquidity (start of period):	200000	100000	105000	113000
5					
6	Receipts:				
7	Sales Revenues		100000	150000
8	Other incomes				
9					
10	Disbursements:				
11	COGS		-50000	-80000
12	Value added tax (VAT)			2000
13	Labour costs (from operating expenses)		-20000	-30000
14	General costs (from operating expenses)		-10000	-15000
15	Investments	-400000			
16	Interest payments (from operating expenses)		-5000	-5000
17	Repayment of loans		-10000	-10000
18	Tax payments			-4000
19					
20	Financing:				
21	Loans	300000			
22	Equity				
23					
24	Liquidity (end of period):	100000	105000	113000	

Exemplary liquidity plan of a start-up enterprise

The liquidity (start of period) is the sum of all liquid assets (bank account(s) + cash). From this value, you withdraw all outflowing payments within one time period and add all incoming payments. The final value "liquidity (end of period)" should be rather positive - and this would mean, that your enterprise can pay its bills and has some reserves. The value in column "pre-start" row 24 (see table above) is transferred to column "period 1" in row 4, and you continue following this scheme. Additionally to a liquidity plan you can calculate liquidity indicators and present them in your business plan as well.

Step 10: Profit-and-Loss-Forecast

Finally, you want to know whether your enterprise will make profit within defined periods of time (per month, per three months, per year - depending the duration of your production process(-es). In agriculture, most profit-and-loss calculations are based on one year. We start usually with the results of your gross profit calculation(s) (step 1) and then add all elements of operating expenses (fixed labour costs/step 2, general costs/step 3 and depreciations/step 5). After these you have consider the interest payments for your loans/step 8 (see table).

52	Gross profit [C=A-B]	9.000,00	9.000,00	16.500,00	23.000,00
53					
54	Operating Expenses				
55	Wages and salaries (from "HR Planning")	2.400,00	2.400,00	7.200,00	7.200,00
56	Outside services			0,00	0,00
57	Telephone and internet			0,00	0,00
58	Rent			0,00	0,00
59	Utilities			0,00	0,00
60	Depreciation (from "Investments and depreciation")	779,76	779,76	2.339,29	2.339,29
61	Insurance			0,00	0,00
62	Repaires and maintenance			0,00	0,00
63	Advertising and marketing			0,00	0,00
64	Patents and licenses			0,00	0,00
65	Other expenses			0,00	0,00
66	Total operating expenses [D]	3.179,76	3.179,76	0,00	0,00
67					
68	Operating income [E=C-D]	5.820,24	5.820,24	16.500,00	23.000,00
69					
70	Non-operatings revenues [F]			0,00	0,00
71					
72	Non-operating expenses [G]			0,00	0,00
73					
74	EBIT [H=E+F-G]	5.820,24	5.820,24	16.500,00	23.000,00
75					
76	Interest expense [I] (from "Loans")	320,83	320,83	962,50	962,50
77					
78	Income taxes [J] (enter tax rate in "Assumptions")	1.099,88	1.099,88	1.199,64	2.499,64
79					
80	Net income [K= H-I-J]	4.399,52	4.399,52	14.337,86	19.537,86

Exemplary profit-and-loss forecast of a start-up enterprise for four periods of time

However, if your enterprise has revenues or expenses outside of its defined business operations (e.g. revenues from financial investments), you should consider these data as well (non-operating revenues and non-operating expenses in table above). Attention, the repayment rates are covered +/- by the depreciation values and are not part of the profit-and-loss account. Finally, before you get your estimated net income, you have to consider your and your partners income tax. However, you can set for first planning calculations the tax rate to zero - but don't forget it for further calculations!

However, it may easily happen that along the first months (or longer...) your enterprise will lose money. Some start-ups do so for years - this can be due to high investments, long-lasting constructions, production capacities and time consuming knowledge development compared to opening of markets and turnover increase. Yet, this does not mean, that there will be no success at the end. Therefore, the profit-and-loss-account as a forecast is a first outlook on profitability for the first periods of time, but for a better assessment you should use methods, which take the whole lifetime of your fixed assets into account (see Business plan economics IV).

Step 11: Adaptations and modifications

Finally, you have the results of all necessary plans for chapter 9 of a business plan - but before you present them there, check them referring plausibility and whether they are satisfying and adequate or not. If necessary, think about modifications in your business plan! Negative liquidity is always requiring an improvement of financing and/or decrease of costs and/or increase of sales. Negative profitability in the first time can be endured, but over the whole lifetime of your investments, it cannot be accepted. So first calculation results require often a second or third round of adaptations - but stay on realistic numbers and assumptions!

Profitability calculations

The excel-based "profitability calculation tool" will help you to analyze medium and long-term profitability of your business project. It is joining three analytical methods: all of them should give you clear positive result to conclude, that your enterprise will be able to earn money.



[5.2.5 \(2\) Profitability calculation tool](#)

Deciding about analysis periods

For working with the tool, some explanations are necessary (for background see 5.2.4). You start entering data in section A - please list up your most important investments, their acquisition costs, their useful life in years and their likely residual value, if you sell them after use. Second, you have to decide about the analysis periods, which fit best to your business project. In the logic of investment calculations, the analysis period is the time period, in which you expect that all of your investments are paid back by future sales and your business generates profit. This time period will be determined in general by the useful life of your most important investment; and in most cases this should be the investment, which has the longest useful life. An example: if you will invest in a solid greenhouse (price 100.000 €, 20 years useful life), a tractor (price 30.000 €, 6 years useful life), an irrigation equipment (price 20.000 €, 10 years useful life) - then the greenhouse investment would be your "leading investment" and would set your analysis period to 20 years, corresponding to its useful life of 20 years and its highest initial investment value.

However, in planning calculations you are principally free to choose any analysis period - lets say, you want to see, whether your project will be profitable and pay for your investments within 10 years, then try that out!

Deciding about interest rate

Next issue to solve and to enter in Section A is the interest rate for your investment calculation (= calculation interest rate). However, this will depend directly on your financing: e.g., if you have access to equity capital, for which low or no interest is expected, you can keep the calculation interest low - and derive it from profitability rates of alternative financial investments. If you want to finance your business with loans, then you should use the effective interest rates of your loans as a base for your "calculation interest rate" and add a supplement of 0.5 % to 1.0 % on as compensation for entrepreneurial risks and as a "reserve buffer". Example: You get your loans with effective average interest rates of 3 % - then you should set the calculation interest rate to 3.5 % - 4 %.

Entering data for "payment stream"

The methods used by the tool are so called dynamic calculation methods, which allow entering different business numbers for every year. Please enter in section B - D (depending on the analysis period you have chosen) for every year:

- Gross Profit
- Operating Expenses
- Depreciation
- Interest
- Re-Investments and
- Asset sales

The values in the row "payment stream" are relevant for net present value and internal rate of return calculations. They do not have to consider depreciation and interest due to the nature of these both methods (so the formula for the payment stream adds depreciation and interest, which were before subtracted as elements of operating expenses).

There is one problem referring different useful lifetimes of investments. Let us come back to our example from above: The tractor has a lifetime of only six years - so you have to spend for a new one in year 7 and in

year 13 as well. To integrate this in the calculation you have to enter acquisition costs for a new tractor in row "Re-Investments" in the cells for year 7 and year 13. Another question is, whether the "old" tractor would still have a residual value, which you can realize when selling it. If yes, then you have to enter this residual value in row "Asset sales" for year 7 and for year 13 as well. The same procedure you have to apply for the irrigation equipment (re-investment in year 11).

Interpreting profit-and-loss average results

The key figure "Profit-and-loss average" informs you about the potential annual net income before tax of your start-up enterprise. The tool is simply calculating the average of operating income over all years of the analysis period, and taking asset values into account.

Interpreting net present value results

The net present value of an investment (here your business project is considered an "aggregated investment") is calculated by discounting all future sales and expenses to their present value, adding them up and subtracting from this sum the total initial investment value. If the calculated net present value of a business project is rather positive compared to the aggregated value of all initial investments, then your planned enterprise can be considered as profitable (however, based on the assumptions you made). In other words, a net present value of e.g. 20,000 € indicates, that your business activities will pay back your initial investments and you get further a surplus of 20,000 € in present value over the analysis period. In present value means, that real positive income streams, which happen later, will have considerable higher amounts - but if this future income streams are discounted and aggregated, the present value of them all together would be 20,000 € plus the value of the initial investment.

In principle, every project with a positive net present value can be considered as profitable - but for better assessment, you should compare that value with the total initial investment sum. If you have invested originally 1,000,000 € and your net present value is only 5,000 €, then there is no significant profitability. But if the initial investment was e.g. 4,000 €, then the profitability would be rather excellent.

Interpreting internal rate of return results

The internal rate of return is calculated by an algorithm, which is searching for that interest rate, which would lead to a net present value of an investment project of exactly zero. This interest rate is indicating then the annual return rate of 1 €, which you had invested initially in the business project. Let's say, the internal rate of return is 3 %: This will mean, that for every 1 € you will get back 0.03 € every year.

But how will this indicate the profitability of your business project? For deciding this, you have to compare the internal rate of return with your personal idea of a minimum rate of return. However, this minimum rate of return is mostly depending on the financing of a project - and for being considered as profitable, the internal rate of return should exceed in a clear manner your personal minimum rate of return, and especially (!) the rate of your loans. For example, if you have financed your enterprise with a bank loan of 4 % interest, then an internal rate of return of mere 3 % is not able to cover interest and repayment of this loan - your project would be considered as not profitable. But if you have financed your project with equity capital and you estimate an average return of 1 % for alternative financial investments, then an internal rate of return of 3 % would be enough to come to the conclusion, that your project is economically viable (however, at a low profitability).

What to do, if there is no satisfying profitability?

If this is the result of your profitability analysis, then you have to review your business plan and its assumptions - but stay on the facts, and don't try to manipulate data just to demonstrate profit chances, which in reality don't exist. If a profitability calculation leads to negative results and keeps you away from a risky operation and from burning money, it has fulfilled its purpose as well!

References:

Neuschäfer, K. and Gerlach, A. (2016): SWICE-Calc - tool to calculate finances for start-up enterprises. Soest, South Westphalia International Center for Entrepreneurship SWICE at South Westphalia University of Applied Sciences SWUAS. All rights reserved.

5.3 – Running the business

5.3.1 Marketing

Different corporate communication strategies have different strategic goals. It is wise to have a clear understanding of the intended goal of the communication and of the different methods that can be applied.

Often the methods have overlapping goals: Advertisement for a product can and should also create a strong brand. Customer relations can and should be used to promote products. Corporate communication covers:

- product: advertisement → boost sales
- brand: public relations → create a positive image of the company
- customer: customer relations → maintain a satisfied customer base

Along the lifetime of a product, different product communications exist:

- Introduction phase:
 - create attention and generate curiousness
 - raise visibility of the product
 - generate high initial and follow-up sales
 - build a concise and distinct brand image
- Growth phase
 - defensive strategies against competitors (esp. “me-too” products)
- Saturation phase
 - sustain customer base (top of mind)
 - adapt to changing market
 - eventually correcting market positioning
- Degeneration phase
 - low priority
 - usually market exit is not supported with communication

Above-the-line- and below-the-line-communication can be separated from each other. Above-the-line-communication (classic advertisement) is a mass communication, can be used to increase brand awareness and brand image, and utilize different types of media. It differentiates into product advertisement, product range and company advertisement, and advertisement alliances and joint advertisement groups.

Below-the-line-communication (product placement) is targeted and paid for placement of a product, e.g. in the set of a movie or TV production. The goal is mainly to enhance the image and to retain the customer base. An advantage is that the brand is represented in an authentic and believable setting so that the advertisement effect is not felt by the customer. Sponsoring is also a below-the-line communication and a principle of mutual benefits. Goals are brand awareness, image positioning, and contact quality. Other below-the-line-communication are ambush marketing, promotion teams, event-marketing, point of sale activities, guerilla marketing, and word-to-mouths.

The criteria for the selection of communication instruments are:

- How can the target group be influenced?
- Budget constraints
- Communication goals
- Involvement of the target group
- Creative possibilities and options
- Reach or range
- Time constraints
- Authenticity

5.3.2 Supply Chain Management and Logistics

The distribution of goods and services requires sophisticated management and logistics. This is gaining increasing relevance due to new information and geographic positioning technologies, multi-channel distribution, and new and more heterogeneous preferences of consumers.

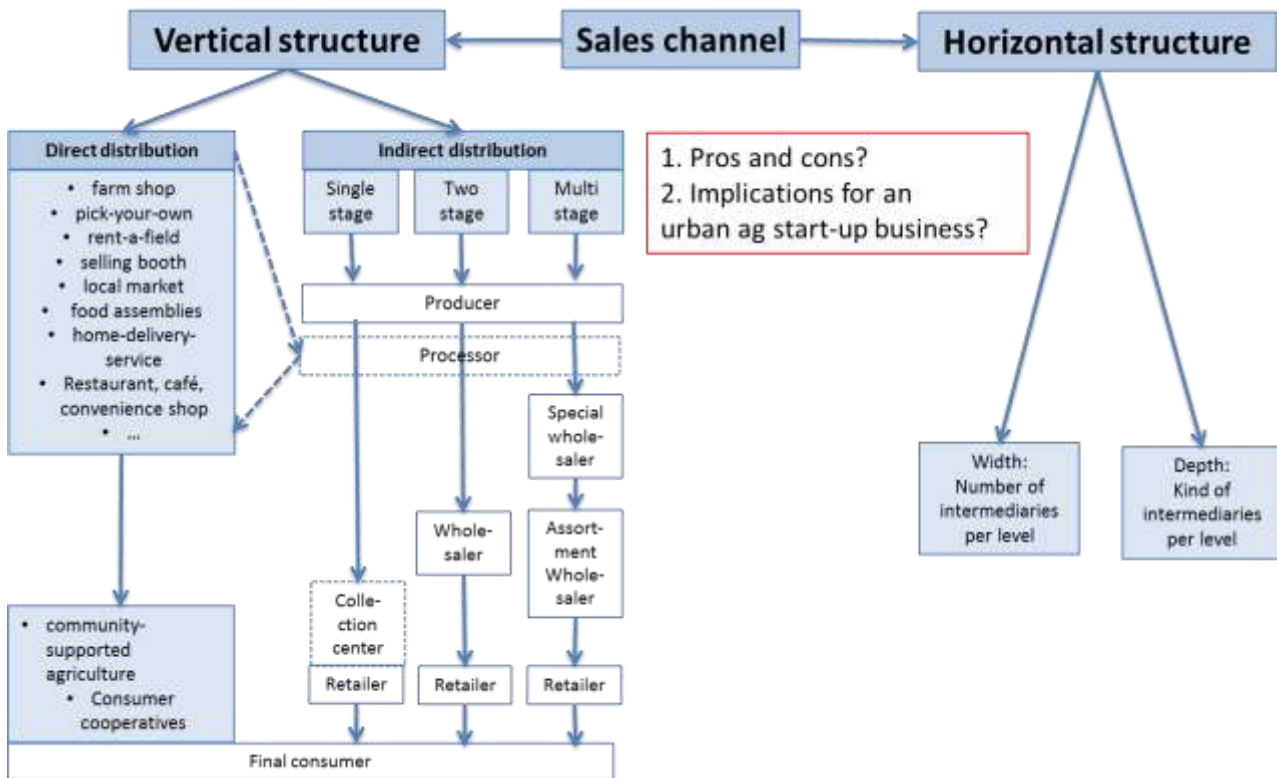
General trends in retail are:

- Structural change and concentration processes especially in food retail
 - Larger markets and „everything under one roof“-concepts
 - Special sales conditions of well-known consumer brand producers granted only to large retailers
 - Large retailers force their conditions on small producers
 - Small retailers cannot offer diversity demanded by many consumers at low prices but increase in convenience stores
 - Business closure of small retailers due to:
 - Lack of consistent succession plan
 - High working hours
 - Decreasing income levels
- Electronic commerce and flexible delivery service providers
 - Enlargement of potential distribution area
 - Lowering of market entrance barriers → specialty stores
 - Strong position of large platforms

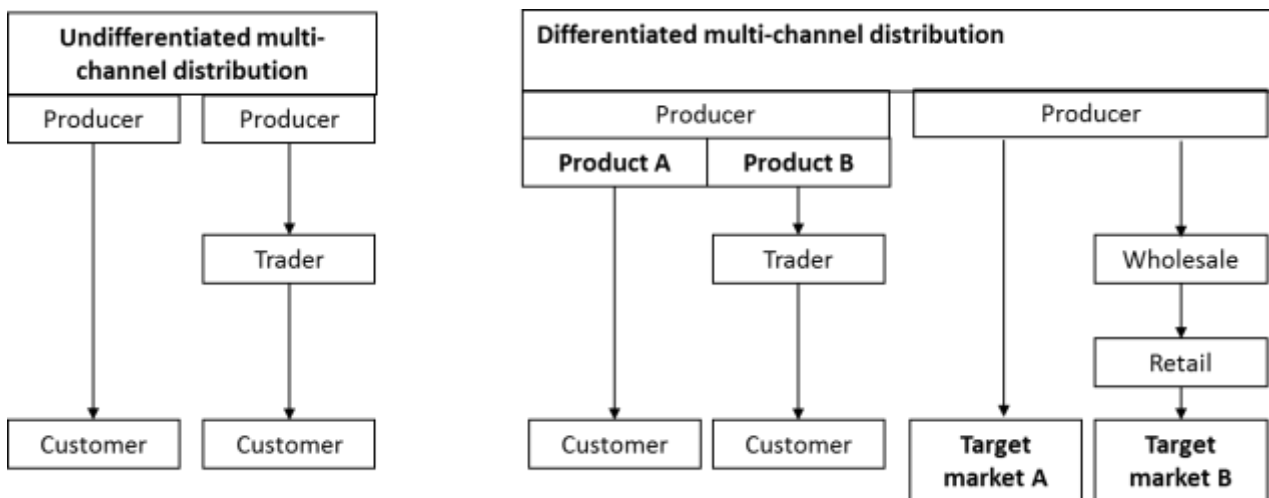
Management	Supply chain	Logistics
Legal, economic, informational, relational	↔	Physical
<ul style="list-style-type: none"> • Selection of distribution channels • Selection of chain actors • Supply chain policy / vertical marketing • Management of information sharing 		<ul style="list-style-type: none"> • Location decisions for production and storage • Selection of transportation means and routes • Decisions about storage time and capacity • Decisions about delivery service

Special characteristics of supply chain management and logistics:

- Decisions are strategic and long-term: difficult to revise
- Decisions impact on many other areas of action in a business/project (product, price, promotion)
- Supply Chain Management and logistics are key bottlenecks in consumer marketing
- Strong impacts of centralized, powerful retail-platforms by being able to exploit economies of scale



Producers choose different distribution channels for one or different products simultaneously: multi-channel distribution.



Key features which differentiate direct from indirect distribution:

Direct distribution

- Services, investment goods
- Physical distribution ill-developed
- High individualization
- High technical complexity
- High need for explanations
- Guarantee and service performance with high importance
- High price level
- Low shopping frequency

Indirect distribution

- Mass-consumption goods
- Physical distribution well-developed
- High standardization
- Low technical complexity
- Low need for explanations
- Guarantee and service performance with low importance
- Low price level
- High shopping frequency

High innovation level

- Low innovation level

Physical distribution and logistics

Physical distribution:

- All functions which are required for planning and execution of plans
- To ensure the physical flow of materials and products
- From the place of production to the place of consumption
- With the objective to meet customer requirements
- To make profits!

Logistics are limited to those activities which

- are executed or controlled by the producer and
- those commissioned by the producer!

The main objective of logistics is to achieve a certain level of delivery service with minimal costs or to achieve a maximum level of delivery with given costs.

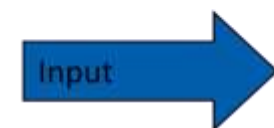
Basics principles of logistic systems cover:

- optimal degree of capacity utilization
- minimal storage functions
- minimal transport functions
- creation of large orders
- standardized physical size of orders

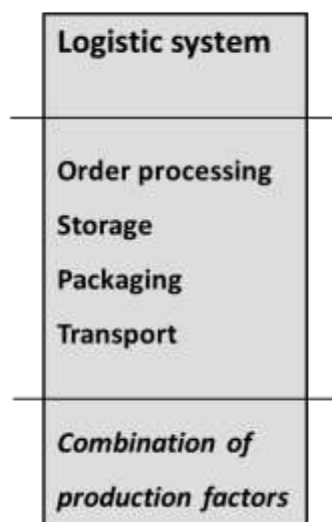
Delivery services result out of logistics:

Production factors

- Work
- Inputs
- Material
- Information



Logistic costs



Delivery service

- Time
- Availability
- Exactness
- Flexibility



Logistic performance

Determinants on the extent of delivery services:

- improvements in delivery service costs of logistics
- Market /customer / stakeholder requirements on delivery service
- Delivery service of competitors
- Possibility for substitution of products
- Physical product characteristics

Trade-offs in parts of the logistical system:

- Logistical systems: order processing, storage, transport, packaging
- Possible trade-offs:
 - o Transport costs and storage: larger transport volume can decrease transport costs but cause longer storage periods and higher inventories and thus increase storage costs
 - o Transport costs and packaging: optimal usage of transport space decrease transportation costs but require more efforts in packaging and thus higher packaging costs
 - o Transportation costs and storage facilities: reduction of transport by decentralized storage facilities causes higher costs through a higher number of storage facilities

5.4 - Practical work



Assignment 5.4.

Write a business plan for your business idea!

Please follow the proposed order of the business plan (ten chapters; see 5.2.3) and instructions given before in the chapters 5.2.3 – 5.2.6 and 5.3!