DEVELOPING BUSINESS MODELS FOR THE UNDERGROUND LABS

Purpose of this case study is to describe the process of developing business models for the underground labs (ULs) and the network of ULs in the Baltic Sea Interreg project (BSUIN).

Research Questions:

What are the challenges and opportunities when developing business models for the ULs and network of ULs?

What kind of business models the ULs in the project have?

How could their business models be developed by focusing on specific customer segments and services and their value propositions?

What kind of business model could serve best the network of ULs?

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i Concepts

Business model describes the logic of how a company intends to make money. It describes the rationale of how a company creates, delivers and captures value. Business Model Canvas is a useful tool with nine building blocks for describing, analyzing and designing business models. (Osterwalder & Pigneur 2010.)

Professional services, such as ULs also are, can be characterized by high labor content, high customization and high customer contact. The distinguishing feature of these services is their knowledge-intensive nature, and in general they are processes or journeys. (e.g. Beltagui, Sigurdsson, Candi & Riedel, 2017.)

In order to describe a *service offering*, the necessary service components needs to be analyzed and defined. Analyzing the components also enables an understanding of which service elements can be considered to be essential and which of them extra. The convenience of the essential core service can be enhanced by additional services and supporting services, being particularly useful to distinguish oneself from the competition. (Harkonen, Tolonen and Haapasalo. 2017).

Value proposition is at the core of the business model canvas. (Osterwalder, Pigneur, Bernarda & Smith, 2014). It is a strategic management's decision on what the company believes its customers value the most and what it is able to deliver that gives it competitive advantage (Rintamäki, Kuusela and Mitronen 2007).

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SERVICE DESIGN WORKSHOPS

Service Design (SD) was used as approach in the project. SD is a mindset, a process, a tool set, a cross-disciplinary language and a human-centered management approach (Stickdorn & Schneider 2018). Data was gathered by facilitating Service Design workshops and analyzed by qualitative methods. These main principles need to be considered throughout the service design process: exploration, creation, reflection and implementation stages (Stickdorn & Schneider 2011).

The methods and tools used in service design enable acquiring in-depth customer understanding, which will help overcome this dilemma. Customer data, information about who the customers are, is obtained from records of who has or is currently using a service, or by using the knowledge of staff or partners who are dealing with customers in delivering the service. (Keränen, Dusch & Ojasalo 2013.)

Intro | Project | **Method** | Results | Discussion

Exploration

Describing and analyzing the current business models of the ULs

Description of the Business Model of the UL

Tool: Business Model Canvas

1-7 in each

6 workshops - 1 with each lab

Key requirements of data storage and managing services

Tools: Context map, Business model canvas, Preliminary service ideas

19

Feb- -May 2018

Nov 2018

Feb 2019

Creation

-Focusing on specific customer segment
-Focusing on services with their value propositions

How to support geo-measurement companies in their R&D

Tools: Tree about collaboration, Value proposition, Service blueprint

8

Critical points of service process

Tools: Tree about collaboration, Value proposition

10

Apr 2019

May 2019

Requirements for companies using underground space as a touristic destination

Tools: Tree about collaboration, Four-fold chart, Interviews

14

Oct 2019

Reflection

-A developed business model for the ULs network
-Service offering
-Value proposition

Essential and additional services, Characteristics of value proposition

Tools: Interactive discussion, Research wall

4&7

2 workshops - with ULs and project partners

RESULTS:

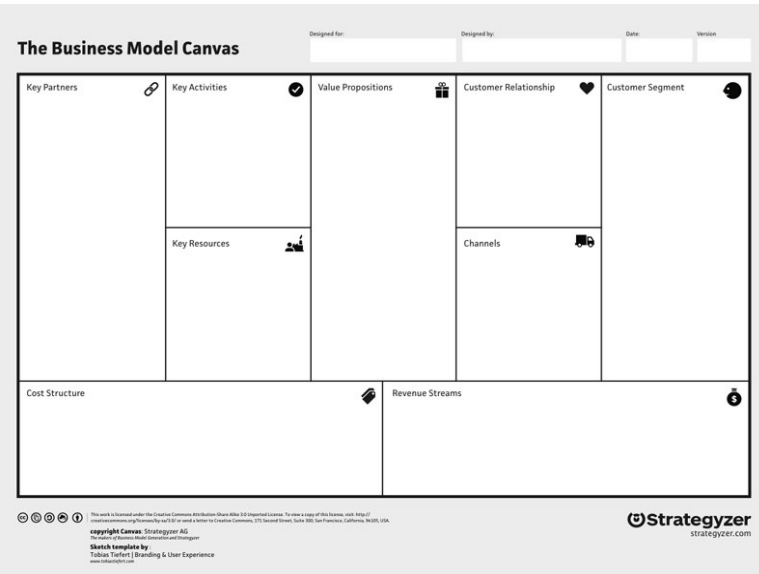## Current business models of the ULs

In the Exploration workshops the business models of the ULs were described and analyzed. Each UL is unique having specific know-how, expertise and infrastructure. See more Aro, Ahola & Vuorela 2019.

Opportunities

The most important customer segments are universities and research institutes
Personal relationships, conferences, publications are important
Financial resources are generally scarce
Human & intellectual resources are strong
Business functions are not very often mentioned as activities, e.g. marketing, communication
Partners are known well
Revenue streams from paying customers are not substantial
Fixed costs are significant

Challenges

The vision for the future; strategy
Attracting new paying customer segments
Finding new business opportunities and services
The cost structure is heavy
Organizational system / structure is complicated
Customer understanding; understand the business of the customer
Commercial customer relationships could be more actively strengthened
Customers should be asked for feedback to improve ULs' operations

Business models of the ULs focusing on specific customer segments and services

In Creation workshops the focus was on specific customer segments and services and their value propositions, e.g. data centers, research institutes, geo-measurement companies.

The outcomes of the workshops were promising and recommendations for the ULs were made. The ULs should look for new customer segments and create new services and value propositions based on their competitive advantages and communicate them clearly. In addition, they should create and describe business models for the chosen customer segments and services.

Service offering and the value proposition for the network of ULs

Essential services

- Research infra
- Underground infra
- Site characterization and knowledge
- Wide expertise for underground projects

Additional services

- Underground logistics
- Coordination of research projects
- Industry specific machinery & equipment
- Support for R&D project (e.g. funding and innovation)
- International co-operation
- Extensive networks
- References of successful projects
- Demonstrations
- Underground and industrial tours
- Meeting rooms

Multiple underground & research infrastructure of qualified ULs network with extensive database and unique profiles helps e.g. geo-measurement or underground construction companies who want to conduct underground development or technical development in real environment cost effectively in a service-oriented way by finding the characterized, safe UL and scientific experts, and supporting the customer in planning and implementing customized R&D&I (unlike a single UL or other European non-service-oriented ULs).

A generic business model for the network was described based on the data, results, analyses and feedback of all the previous workshops for the network of ULs


Business model for the network of the ULs

The purpose of the network-based service is to create a joint understanding of the content and the benefits for the customers. The role of the service provider or the integrator depends on whether the service offering consists of the existing services or a totally new service.
Developing the service network requires working on many issues, e. g. strategic, economic, common customer relationships, confidence and flow of information. (See more Valkokari, Valjakka, Hakanen, Kupi, & Kaarela 2014). Therefore, it is important to decide how partners positioned around a business model can be organized into a network-based business model that generates additional value for the core business model and for both the partners and the customers.
The Business Model Canvas framework has limitations in cases where several companies and individuals form a network in a new business model. The development of new interdisciplinary networks contains a number of barriers and challenges going forward. (Lund & Nielsen 2014).

Furthermore, when developing value propositions for the network and the individual ULs the nature and composition of value proposition can change as a relationship evolves from conducting a single project toward a more established customer relationship (Heikka & Nätti, 2018).
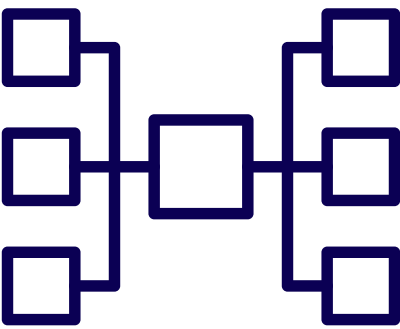
Discussion

It is challenging to develop business models for the ULs because they have not been business oriented. Every UL is unique and independent, and the expertise is related to underground sciences. Business orientation would offer them an opportunity to boost underground scientific research which is the key element in the business model.

Based on our experiences of using SD methods in developing business models for the ULs we propose that it is better to start describing the business models the ULs have to get insight of their strengths and weaknesses in doing business. In addition, they all have their unique features and contexts. To get more in-depth knowledge and practical ideas the existing business models can then be further elaborated by focusing on specific customer segments and services and their value propositions. On top of these analyses it is possible to find out ways to innovate business model(s) for the network of the ULs.

New innovative models or frameworks for network-based business models are needed to utilize the strengths of the network and the individual and unique ULs. In addition, online strategies to get new customers for the ULs, and advanced ICT systems to turn them into profitable business are also needed.

Thank you!

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