



Bern University
of Applied Sciences

Research Group

ICTM – E-Government

Competences

The E-Government research group focuses on developing management tools for the federal state. The interdisciplinary group has several years of experience in the development and implementation of such tools. We collaborate with an increasing number of partners in this field.

The group operates and provides platforms (see Infrastructure) for other Universities. We are planning an annual summer school with European Universities.

Key Projects

- Cockpit for municipalities
- Innovation Advancement in Swiss municipalities
- Infrastructural Management
- RDF-Pilot for the Swiss Federal Statistical Office
- Planning hospital provisioning
- Quality Management in Health Care

Partnerships

- Schweizerischer Gemeindeverband
- Fachorganisation Kommunale Infrastruktur
- Several municipalities
- Several cantonal authorities
- Swiss Federal Statistical Office
- Several universities
- bichsel bigler partner ag
- SWR Geomatik AG
- swissplan.ch
- Microsoft Switzerland GmbH, Public Sector
- Talus Informatik AG
- Verein eCH
- Verein eGov Schweiz

Infrastructure

- Various development environments, including Microsoft Business Intelligence Stack with associated servers and development tools
- Adonis server for Business Process Modelling
- ArcGIS server for Geographic Information Systems

Web Platforms

- www.gemeindecockpit.ch
- www.gemeindezukunft.ch

Collaborators

- Stefan Agosti
- Luca Bösch
- Patrick Haring
- Gina-Maria Musaelyan
- Gian Rossetti
- Urs Sauter
- Christoph Schaller
- Hans-Peter Zimmermann

Contact

Dr. Urs Sauter
Professor for Business Administration
+41 32 321 63 26
urs.sauter@bfh.ch

Bern University of Applied Sciences Engineering
and Information Technology
Institute for ICT-Based Management ICTM
Höheweg 80
CH-2501 Biel/Bienne (Switzerland)
+41 32 321 67 76



Bern University
of Applied Sciences

Research Group

ICTM – Strategy, Technology and Innovation Management

Competences

The research group «Strategy, Technology and Innovation Management» (STIM) focusses on the development of management methods and tools for the analysis, modelling, simulation and validation of corporate ecosystems.

The main focus is on practical projects and publications on topics such as innovation diffusion, instruments for the development of digital strategies and innovation management, as well as the application of simulation methods.

Selected Projects

- CIRCUSOL (ti.bfh.ch/circusol)
- ProsumerLab (https://www.ti.bfh.ch/service/news/news_details/article/prosumer-lab-an-der-bfh-ti.html)
- Use-it-wisely (www.use-it-wisely.eu), EU-FP7-Projekt
- BusinessLab: Development of a validation methodology for business models
- Medicine Shortages (http://www.cost.eu/COST_Actions/ca/CA15105)

Selected Publications

- Groesser S. N., Reyes-Lecuona A. and Granholm G. Dynamics of Long-Life Assets, Springer-Verlag, 2017 (<http://www.springer.com/de/book/9783319454375>).
- Huber D.; Kaufmann H.; Steinmann M. Bridging the Innovation Gap – Bauplan des innovativen Unternehmens. Springer-Verlag, 2015.
- Groesser S. N., Jovy N. Business model analysis using computational modeling: a strategy tool for exploration and decision-making. Journal of Management Control 2016; 21 (1): 61-88.
- Groesser, S. N. and Zeier R. Systemic Management for Intelligent Organizations: Concepts, Model-Based Approaches, and Applications. Springer-Verlag, 2012.

Collaboration

- University of St. Gallen
- University of Bergen
- Swisscom
- Verein Smart Grid Schweiz

- Industrie 2025
- PostFinance
- SBB

Staff Members

- Dr. Stefan N. Grösser, Forschungsgruppenleiter, Projektleiter und Forschender
- Prof. Bramwell Kaltenrieder, Forschender
- Prof. Dr. Ina Goller, Forschende
- M.Sc. Davood Qorbani, Wissenschaftlicher Mitarbeiter
- M.Sc. Adrian Stettler, Wissenschaftlicher Mitarbeiter
- B.Sc. Patrick Maag, Wissenschaftlicher Angestellter

Contact

Prof. Dr. oec. HSG Stefan N. Grösser
Professor for Strategic Management and Organization
+41 32 321 62 75
stefan.groesser@bfh.ch

Bern University of Applied Sciences
Institute for ICT-Based Management
Strategy, Technology and Innovation Management
Höheweg 80
CH-2501 Biel/Bienne (Switzerland)



Bern University
of Applied Sciences

Research Group

ICTM – Strategy, Technology and Innovation Management

Medicine Shortages - Reframing and negotiations of agreement between key stakeholders

Project Description

Medicine shortages have become a global phenomenon and are recognized to affect all health systems. It is a problem that has grown to become a crisis in terms of delivering patient care. Medicine affected by shortages includes those used to treat cancer, infections, emergencies, cardiovascular conditions, anaesthetic products, neurology and many more. The major challenge is that the economic incentive system in place is aligned in such a way that participating stakeholders are motivated to maneuver themselves into a deadlock situation. A critical issue today is that the key players do not collaborate sufficiently to guarantee a security of supply of essential medicines. What is needed is a systems perspective to understand and loosen this deadlock situation as well as to create innovative incentives on a legal and regulatory level.

Relevance of the challenge

Shortages result in the suffering of individuals and negative consequences for an economy. An option to overcome shortage situations is to use a different medicine as a substitute. However, alternatives are not always feasible and available. When shortages arise, risk increases through substitution from other excipients, other concentrations, foreign language vials, or untranslated package leaflets. Such risks have not yet been quantified in a scientifically credible way.

Project objectives

This project intends to contribute to how medicine shortage problems can be detected, reduced, or avoided respectively by employing a systemic ecosystems perspective. Several steps will need to be developed to fulfill the set objectives. First, the list of factors and causes for medicine and nutraceutical shortages need to be updated. Second, this research is to be shared with relevant actors. And third, a collaborative community of relevant stakeholders is to be established to overcome these causes.

Methodology

The general approach in this project is a multimethod research design. It follows the participatory action research principles with relevant system actors.

Results

This project intends to contribute to how medicine shortage problems can be detected, reduced, or avoided respectively by employing a systemic ecosystems perspective. All key players along the supply chain should have an up-to-date, written policy for managing shortages. That policy should include the need for risk assessment which will cover the impact of the shortage and the actions that should be taken to limit those effects. These key players assume their responsibility in cooperating with any internationally and nationally agreed scheme to reduce the effect of such shortages.



Project Team at ICTM

Project period: 2017 – 2019
Project leader: (TI) Prof. Dr. Stefan Grösser
Project members: Helena Jenzer, Patrick Maag

Contact

Prof. Dr. Stefan N. Grösser
+41 32 321 62 75
stefan.groesser@bfh.ch

Bern University of Applied Sciences
Institute for ICT-Based Management
Höheweg 80
CH-2501 Biel/Bienne (Switzerland)



Bern University
of Applied Sciences

Research Group

ICTM – Strategy, Technology and Innovation Management

Use it Wisely (UIW)

Initial situation

The current total of European Exports amounts to 1.5 Billion Euros a year of which machinery and transport equipment exports amount to 650 Million. The export industry employs 7.4 million people in 872'000 companies producing 5.5% of the GDP of the EU. The industries face major challenges such as global offshoring, rapid business environment changes, shrinking investment budgets and environmental pressures. The UIW project unites actors from research and practice from six different sectors (mining, shipping, spacecraft, trains, trucks, and office furniture). The product life cycle ranges from 9 to 30 years which results in different challenges in upgrading products and services.

Project objectives

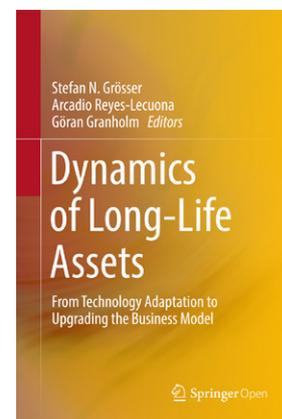
The project aims to provide a platform for the partners to improve the upgrading cycles in their industries. The resulting case studies provides input for web platform to distribute tools and methods to shorten upgrading cycles in capital intensive assets. By tackling this challenge the resulting products and services generate a lower environmental impact, increase employment in knowledge work in the European Union, and provide customers with resource savings. Longer lasting products and services enhance furthermore the use of resources and increase the competitiveness of the industries.

Methodology

Developing a dynamic model consists of developing first a causal loop diagram to document the causal relationships of the system in question. This is then used as an input to develop quantitative simulation models. Then, the behavior and structure of the models are discussed with the companies. This adds validity to the models. This step is then repeated multiple times until the structure and behavior are reasonable with available data and expert judgments. Finally, the model is populated with measured data and calibrated to the data entered. The calibrated model can then be used for scenario and policy analysis to foster decision support.

Results

The BFH provides modeling workshops for our partners. The modeling workshops allow partners to use the system dynamics methodology to structure and increase their understanding of their industry system they are operating in. The results of the modeling workshops are qualitative or quantitative simulation models. The BFH supports partners in the development of scenarios and policies and their respective interpretation. The models are mostly about organizations and industries. System dynamics models can be used to determine the effects of scenarios and policies but also to test a manager's decision-making and are used in a variety of sectors such as strategic management, corporate development, and public policy.



Some results are accessible in this Springer publication:
<http://www.springer.com/de/book/9783319454375>



Bern University
of Applied Sciences

More information

Project period: 2013 – 2016

Project leader

Prof. Dr. Stefan Grösser

Project members

- Stefan Katz
- Adrian Stettler

Partner

European Union

Website: www.use-it-wisely.eu

Contact

Prof. Dr. Stefan N. Grösser

+41 32 321 62 75

stefan.groesser@bfh.ch

Bern University of Applied Sciences

Institute for ICTM

Business Ecosystem Management

Quellgasse 21

CH-2501 Biel/Bienne (Switzerland)



Bern University
of Applied Sciences

Research Group

ICTM – Strategy, Technology and Innovation Management

Circular business models for the solar power industry: EU-H2020 Project CIRCUSOL

Project Description

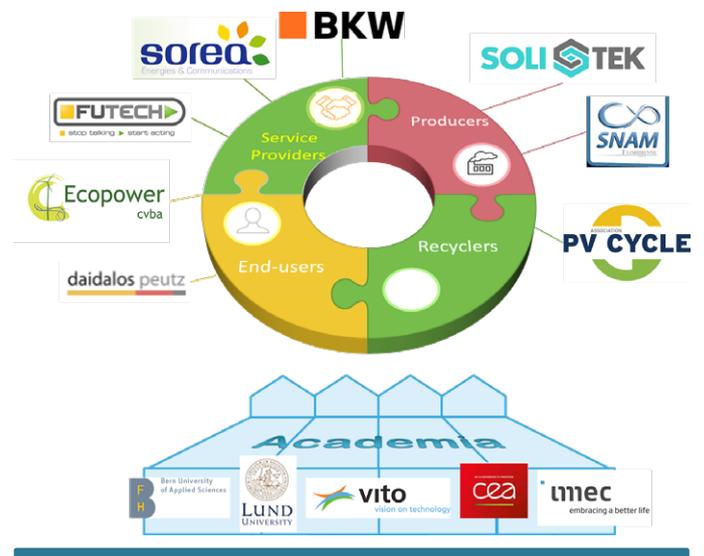
Solar power is a rapidly growing industry. The main objective of the **EU-H2020 research project CIRCUSOL** is to provide systemic circular business solutions to the solar power industry. The solar power sector is well suited for such business models. They have the potential to deliver double benefits on resource efficiency and low carbon emission.

Project Objectives

- **Demonstrate real benefits of product-service business models for resource efficiency in the solar power sector** by installing second-life PV-modules and batteries in three large-scale demonstrators under contracts in the project; and by simulating the long-term impact on circular economy indicators with the diffusion of designed business models.
- **Demonstrate market potential and business viability of solar power business models** in five large-scale real-life demonstrators covering three major end-user segments (residential, commercial and utility) in three European countries (France, Belgium, Switzerland). Early market adoption at regional level will be tested in two of the demonstrators.
- **Pave way for high supply quality and market confidence in second-life PV panels and batteries** by developing cost-effective labelling and certification protocols, which will be delivered to standardization committees and EU Ecolabelling initiatives before the end of the project.
- **Underpin economic viability of remanufactured electric vehicle (EV) battery for stationary renewable applications**, by developing an in-depth cost and application analysis for remanufactured EV batteries, and by deploying the remanufactured batteries at two demonstrator sites under commercial contracts.

Project Partner

The CIRCUSOL consortium has 10 industrial partners, representing the full supply chain: manufacturer, energy service provider, remanufacturer, recycler, and producer responsibility organization. Civil society participation is strong. End-user perspective is represented. Adjacent actors, such as the financing sector and public authorities, are engaged through the project stakeholder network.



Project Team at Strategy, Technology and Innovation Management

Prof. Dr. Stefan Grösser
Adrian Stettler
Davood Qorbani
Patrick Maag

Contact

Prof Dr. Stefan Grösser
Professor for Strategic Management and Organization
+ 41 32 321 62 75
stefan.groesser@bfh.ch

Bern University of Applied Sciences
Institute for ICT-Based Management
Strategy, Technology and Innovation Management
Höheweg 80
CH-2501 Biel/Bienne (Switzerland)