



**CENTRUM FÖR TJÄNSTEFORSKNING**  
CTF | SERVICE RESEARCH CENTER

# Annual report 2020

## Vision & Mission

CTF's vision and mission is to contribute to scientific knowledge and development of private and public organizations and the wider society through research on value-creation through service.



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# Highlights<sup>2020</sup>

SEK  
**27**  
million

## to strengthen innovation in the Swedish business sector

CTF received new funding from the Knowledge Foundation, within the framework of the Graduate professional development program, to develop and offer courses for professionals within the project “ISE, Improving value creation through service education”.



### Anna Fyrberg Yngfalk

was appointed associate professor in Business Administration at Karlstad University.

### Alexandre Sukhov

successfully defended his doctoral thesis “The human side of idea screening”.

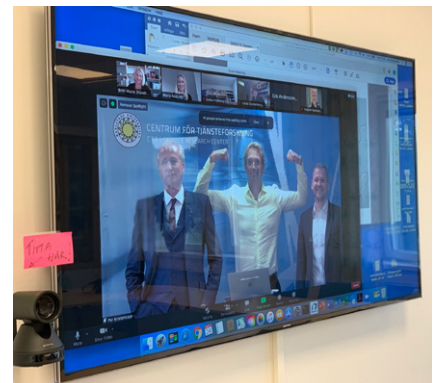


## The 5th edition of Service Convention Sweden

was successfully held. Some of the speakers were: Mona Lindström, Buurtzorg Sweden, Angela Yong, Swedish Agency for Economic and Regional Growth, Anders Ekholm, Institute for Future Studies, and Petter Falk, PhD student at CTF.

## Tjänsteinnovationsdagen

We learned all about arranging Zoom meetings and digital conferences during the year. Our Tjänsteinnovationsdag (Service Innovation Day) was held on Zoom and attracted over 120 participants.



# Researchers making an impact



**Bo Edvardsson** (rank 32 in Marketing), and **Margareta Friman** (rank 249 in Logistics & Transportation) were listed in the prestigious Stanford list that ranks the world's top two percent scientists.



**Helén Williams** and **Fredrik Wikström** were nominated for the "Sustainability Initiative of the Year" at "Dagligvarugalan 2020" for their contributions to the grocery retail industry.



**Stephen L. Vargo**, Shidler Distinguished Professor and Professor of Marketing at the University of Hawai'i at Manoa, and Ander Visiting Professor at CTF, was for the seventh consecutive year, named on the 2020 Web of Science's World's Most Influential Researchers in the Business and Economics discipline.



## SII 2019

The second survey of the Swedish Innovation Index was launched. Ikea was ranked as Sweden's most innovative company – for the second year in a row.

## Attention in Media

Our researchers received a lot of attention in media. For example our research on "phubbing" in retail conducted by **Markus Felleesson** and **Niklas Salomonson**. The study was highlighted in several news papers, for example in the Swedish women's magazine "Tara".



# Director's report

In our annual report we try to sum the year that have passed and share highlights from our work. Closing the chapter for 2020 implies leaving a challenging and different year behind.

Due to the corona pandemic the year was characterized by learning new ways and routines regarding health, socialising and work. 2020 started out nicely with a dissertation in Business Administration. We welcomed several new employees, and initiated a number of new research initiatives. Nobody knew what was waiting around the corner in terms of working from home, quickly applied skills in epidemiology, digital teaching etc.

Despite the challenges during the year, I believe that we managed to perform at a continuously high level. One example, and maybe the most noticeable, we achieved a new record in terms of accepted applications for external funding. The largest one is our Graduate professional development program funded by the Knowledge Foundation, called "ISE, Improving value creation through service education", where we create tailor-made advanced courses for professionals in Swedish business organizations.

We also managed to accomplish a number of digital events during the year. "Tjänsteinnovationsdagen 2020" and "Service Convention Sweden 2020" are two noteworthy examples that attracted many participants. We were also seen in national media where we talked about corona, food waste, digital healthcare services, behavior change and industrial transformation where manufacturing organizations move from product to service-oriented, which in turn helps us make an impact in our society.

In terms of numbers, we published 46 scientific articles in well-respected peer-reviewed academic

journals of high quality. 25 of them were co-authored with scholars, mostly international, outside the center, which show how much our research is internationally anchored. The advantages that follow regards, for example, future external funding, increases attractiveness for organizations working with us. It also provides our center with a good reputation as being a great place to work at.

I want to thank everyone, both at CTF as well as our important partners, for the work that was carried out during this challenging year. As of right now everything looks a little bit brighter, the US has a new president, the spring is here and the vaccination program will hopefully gradually put an end to this horrible pandemic, and we will see the start of a brighter future.

*Per Kristensson*  
*Director of CTF*





# Key numbers

76

SCIENTIFIC PUBLICATIONS IN TOTAL

46

SCIENTIFIC ARTICLES

39

NEW EXTERNAL FUNDING IN MSEK

In 2020, we set a new record in terms of accepted applications for external funding.

25

INTERNATIONAL  
CO-AUTHORED SCIENTIFIC ARTICLES

50

ONGOING  
RESEARCH PROJECTS

20

SEMINARS & CONFERENCES

270

HITS IN MEDIA

75

CTF PEOPLE

Including CTF people employed at Karlstad University, guest researchers and affiliated researchers.

1

PHD DEFENSE

# Chair's view

The saying “Going down in history” will probably define the year 2020. Let us hope that its legacy will be a more profound and positive gamechanger.

We have seen a rise in the awareness of the importance of social responsibility – and the consequences of its shortcomings, for example in the care of the elderly and their imposed seclusion. We also see a clear and much needed demand for scientific reliable facts to drive decisions, development and future strategies forward.

While facing our present challenges in lowering carbon emissions, keeping social distance to restrict the spread of the corona virus, minimizing food waste etc., it is imperative that we make choices and decisions based on knowledge instead of hunches or populist measures that has little or no effect.

As new situations arise, and with no established paths to walk, the interdisciplinary skills and knowledge of the researchers at CTF is of great help and importance. Thus, articles commenting the lack of effectiveness in public information on the pandemic, and the correlation between packaging,

package design and food waste has rendered a wide spread interest and appreciation.

When the world reboots as the pandemic comes under control, we will see massive efforts to create more sustainable development in the society, social welfare and in business models. We need to find new ways to change from consuming products to utilizing services and optimizing instead of maximizing the use of finite resources.

To succeed in the task to decouple growth from emissions, insights in behavioral science and service based logic will be success factors. I am proud to say, and to recognize that the drive, curiosity and expertise that lies within the community of researchers at CTF will be a force to be reckoned with in this transformation.

*Malin Thorsén*  
*CEO Bright Planet and Chair of CTF Advisory Board*





# Organisation

CTF, Service Research Center, is a multinational research center at Karlstad University, Sweden, established in 1986. Our staff members, and guest researchers, come from all over the world and are variously involved in research and education within Business Administration, Psychology, Religion Sociology, Information Systems, Environmental and Energy Systems, Political Science, and Machine Design.

## Management team

The daily operations is led by a director, Per Kristensson, supported by a vice director, Johan Quist, an administrative team (administrators, communication officer and accountant), and the strategic council consisting of professors and associate professors at CTF.

## Advisory board

The advisory board provides CTF with valuable insights, vital knowledge and experience.

- Malin Thorsén, Bright Planet AB (Chair)
- Kristina Heinonen, Hanken School of Economics
- Vilhelm Jensen, Nordea
- Hans Karlsson, Arvika Municipality
- Mikael af Kleen, Dalberg Advisors
- Jonas Matthing, Compare
- Peter Rovèr, Effect Management
- Anders Tufvesson, Ninetech
- Christina Öberg, Örebro University
- Per Kristensson, CTF
- Johan Quist, CTF
- Jenny Karlsson, CTF

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# Funders and partners

CTF works in partnerships with businesses, public organizations and academia all over the world. Our funders and partners are important factors of our success.

In addition to support from Karlstad University, we are grateful for the support from the following funders and partners:



In addition to: Riksbankens jubileumsfond (Swedish Foundation for Humanities and Social Sciences), Handelsbankens forskningsstiftelser Jan Wallanders och Tom Hedelius stiftelse samt Tore Browaldhs stiftelse (Handelsbankens Research Foundation), Anne-Marie and Gustaf Anders stiftelse för mediaforskning (Anne-Marie and Gustaf Anders Foundation), Vetenskapsrådet (Swedish Research Council), Konsumentverket (Swedish Consumer Agency), Trafikverket (Swedish Transport Administration), Sveriges Kommuner och Regioner (Swedish Association of Local Authorities and Regions), Mistra SAMS (The Swedish foundation for strategic environmental research), Skatteverket (Swedish Tax Agency), Region Värmland, Experio Lab Sweden, Karlstad Municipality, Compare, DigitalWell Arena, City of Helsingborg, Arvika Municipality, Karlstad Congress and Culture Centre, Lidl's Future Initiatives/Plastutmaningen, Volvo Technology, Valmet, Ikea, Löfbergs, Ica Maxi Supermarket, Tobii Technology, Miller Graphics, Kongsberg Maritime Sweden, QBIM, Thingssquare, BillerudKorsnäs, Voith Hydro, Cellcomb, Forskarskolan MIT (Swedish Research School of Management and IT), and many others.

# Selected scientific partners worldwide

CTF has a large international scientific network and collaborates with scientific partners all around the world. Here are some selected examples.



## Selected scientific networks and organisations:

- RESPONSE – Demand-Responsive Transport to ensure accessibility, availability and reliability of rural public transport
- BEST - Benchmarking in European Service of Public Transport
- Mistra (SAMS) - The Swedish Foundation for Strategic Environmental Research
- SIQ (The Swedish Institute for Quality)
- SQMA (The Swedish Quality Management Academy)
- MIT, Forskarskolan management och IT (Swedish Research School of Management and IT)
- The WASP-HS Graduate School



## Ander Visiting Professors

Five Ander Visiting Professors are associated with CTF. They contribute with an international perspective and knowledge from the absolute front within their respective fields of research. The professorship is funded by Anne-Marie and Gustaf Anders Foundation for Media Research during 2018–2020.

- Martin Schreier, University of Vienna, Austria
- Satoshi Fujii, Kyoto University, Japan
- Johanna Gummerus, Hanken School of Economics, Finland
- Joann Peck, University of Wisconsin, USA
- Stephen L. Vargo, University of Hawai'i at Manoa, USA

## Visiting researchers

Visiting researchers, who stay for shorter or longer periods of time, is an important part of our dynamic research environment. During the year we had the privilege of welcoming the following researchers: Jasper van Kuijk, assistant professor, TU Delft, The Netherlands. Qusay Hamdan, PhD student, Vlerick, The Netherlands. Martin Schreier, professor, University of Vienna, Austria. Marek Gnusowski, assistant professor, Poznan University, Poland, and Federico Artusi, PhD student, Politecnico di Milano, Italy. In the beginning of the year, CTF researcher Kaisa Koskela-Huotari, spent two months as a visiting researcher at University of Auckland Business School in New Zealand.

## Selected assignments outside Karlstad University

In 2020, several researchers were involved in assignments outside CTF and Karlstad University. Some examples are: Margareta Friman, chair of the International advisory board for "Smart Cities and Communities", Halmstad University. Carolina Camén, member of the steering committee for SQMA. Johan Quist, member of the Swedish Coast Guard transparency council. Kaisa Koskela-Huotari, assistant editor of AMS Review.



# Introducing new CTF people

During 2020, we welcomed several new colleagues.

**Mia Larson**, professor in Business Administration. Her research focuses on event management and tourism development from different perspectives. She will, among other things, be involved in the project "Trust and Empowerment in Digital Services".

**Madeleine Montiadis** is our new accountant, and has been employed at Karlstad University since 2018. Four new PhD students joined CTF:

**Anna Nilstomt** (Psychology) is studying how habitual behaviors, behavioral changes, motivation and information can be influenced in positive ways. For example how technical tools like smart watches and mobile phones can be used to facilitate behavioral changes. Central research questions are; what kind of data and form of data presentation can motivate individuals to healthy behavior.

**Amie Gustafsson** (Business Administration) is focusing on artificial intelligence (AI) and digitalization in the retail industry. She will, among other things, look at nudging and how customers can be influenced before making a choice. Amie also is part of MIT, the Swedish Research School of Management and IT.

**JanErik Odhe** (Machine Design) is investigating how to measure servitization in manufacturing companies, which involve development processes and business models. He is involved in the projects "Servzchall" and "DISCERN" at CTF. JanErik is a lecturer at Karlstad University since 2015, and PhD student (part-time) at KTH in Stockholm since 2018.

**Janna Dervisic** (Business Administration) is focusing on innovation, services and digital technology. Janna is also part of MIT, the Swedish Research School of Management and IT.



Mia Larson



Madeleine Montiadis



Anna Nilstomt



Amie Gustafsson



JanErik Odhe



Janna Dervisic

# Research framework and goals

Our research is driven by societal challenges with humans, users, customers, patients, citizens, and society in focus.

We conduct research on value creation through service based on the needs of individuals and society. We want our research to make a difference and help develop people, organizations and the world around us.

Through scientific research on services we develop new knowledge about value creating processes. With value creating processes, we refer to the effects that arise between an organization and a user in the form of a customer, citizen or patient.

Central research areas: service innovation, service management, service experience, transformative service research, service logic and service system transformation. CTF is always open to new research areas when societal transformation makes such areas relevant.

CTF's research is at the forefront internationally in service research and is conducted in collaboration with private and public organizations as well as academia.



Several projects and studies at CTF are related to the Sustainable Development Goals (SDGs) in the 2030 Agenda for Sustainable Development.

# Publications

In 2020, we published 46 scientific articles, 25 of them in collaboration with international scholars. Several of our researchers were acknowledged and awarded. Here are some selected examples.

Publishing research is one of the distinguishing factors for researchers. The publication process is important and brings quality assurance to higher education. In 2020, CTF publications followed the same high rate as previous years, except for conference papers which went down due to the pandemic and several conferences being postponed or cancelled. We published 46 scientific articles, 25 in collaboration with international scholars. Several scientific articles were published in leading journals with a high impact factor, for example: *Journal of Business Research*, *Journal of Retailing and Consumer Services*, *Journal of Product Innovation Management*, *Marketing Theory*, and *Journal of Service Management*. 20 conference papers were accepted. One doctoral thesis, one book, six book chapters, and two reports were published.

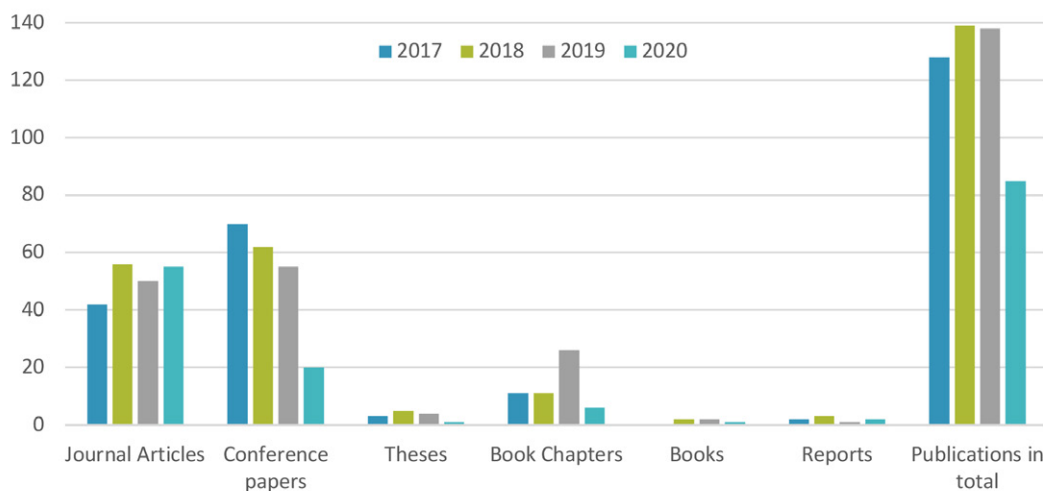
CTF publications made an impact in our research field and several researchers were acknowledged and awarded. Some examples are: Bo Edvardsson and Margareta Friman were in the prestigious Stanford list. The list ranks the top two percent

scientists in the world, based on standardised citation metrics across all scientists and scientific disciplines.

One of CTF's Ander Visiting Professors, Stephen L. Vargo, Shidler Distinguished Professor and Professor of Marketing at the University of Hawai'i at Manoa, was for the seventh consecutive year named on the 2020 Web of Science's World's Most Influential Researchers in the business and economics discipline.

Josina Vink, Oslo School of Architecture and Design in Norway, Bo Edvardsson, CTF, Katarina Wetter-Edman, Örebro University, and Bård Tronvoll, CTF, received the "2019 Robert Johnston Award: Outstanding Paper of the year" for the article "Reshaping mental models - enabling innovation through service design" published in the *Journal of Service Management*.

Alexandre Sukhov, was awarded with the prestigious Wallander Scholarship and the IMIT scholarship for his doctoral thesis "The human side of idea screening".





## Selected scientific publications

### Journal articles

#### New handbook will help improve travel experiences among vulnerable travel groups

How is travel with demand responsive transport experienced? What factors play a significant role, and what can be done to create better travel experiences? This has been studied by Per Echeverri and Nicklas Salomonson within the Interreg project Response. In 2020, the researchers released a new handbook with new knowledge and recommendations on how this type of travel can be developed to provide a better experience for the vulnerable travel groups.

Echeverri, P., and Salomonson, N., (2020). "Experiences of demand responsive transport among vulnerable travellers - a handbook on need, demeanour, and interaction". Karlstad University, 2020.

#### How experts screen ideas

Organizations use idea screening to select which ideas to develop into innovation projects. The question is how do experts decide if an idea is good? It is a complex interplay of intuition, analysis and sensemaking, according to a study from CTF.

Sukhov, A., Sihvonen, A., Netz, J., Magnusson, P. & Olsson, L.E. (2020). How experts screen ideas: The complex interplay of intuition, analysis and sensemaking. *Journal of Product Innovation Management*.

#### Increased mental health by mandatory intervention

Interventions increase the chances of succeeding in changing and maintaining a new behavior in the long run, according to a study by Frida Skarin and Erik Wästlund.

Skarin, F. & Wästlund, E. (2020). Increasing Students' Long-Term Well-Being by Mandatory Intervention – A Positive Psychology Field Study, *Frontiers in Psychology*, Vol. 11, p. 2567.

#### Larger food packages leads to more food waste

Choosing serving size packages and smaller packages is smarter for the climate. This according to a new study where researchers have mapped food waste in Swedish households. The study also shows that consumers' uncertainty over date labels and food safety are major contributing factors to food waste.

Williams, H., Lindström, A., Trischler, J., Wikström, F., & Rowe, Z. (2020). Avoiding food becoming waste in households- The role of packaging in consumers' practices across different food categories, *Journal of Cleaner Production*, Vol. 265.

#### It takes two to interact

How do frontline employees in retail react to and handle situations where the customer ignores them and instead looks at their mobile phone? This has been studied by Markus Felleson and Nicklas Salomonson, and the results show that it has a negative impact on the workplace environment.

Felleson, M. and Salomonson, N. (2020). It takes two to interact – Service orientation, negative emotions and customer phubbing in retail service work, *Journal of Retailing and Consumer Services*, Vol. 54.

#### Travel satisfaction is equally important to all age groups

There are differences in how people travel, and how they experience their travel, depending on which age group they belong to. Travel satisfaction, however, is equally important to all ages. This according to a new study that is based on public transport passengers from five different life stages.

Olsson, L. E., Friman, M., Lättman, K., & Fujii, S. (2020). Travel and Life Satisfaction - From Gen Z to the Silent Generation, *Journal of Transport and Health*, Vol. 18, pp. 100894.

# New funding and projects

During 2020, CTF had about 50 ongoing research projects. We applied for funding for approximately SEK 92 million for new research projects, and received SEK 39 million in new funding. Here are some selected new projects and collaborations.

## ISE, Improving value creation through service education

In 2018, CTF, and project leader Carolina Camén, received SEK 3 million from The Knowledge Foundation to develop and offer flexible courses for professionals at advanced level in the project “ISE, Improving value creation through service education.” In 2020, the foundation decided to support the project with an additional SEK 27 million to further develop and implement courses on a larger scale in cooperation with the business sector within the framework of the foundation’s graduate professional development program until 2024. Read more about ISE on page 27.

## Life events and energy-efficient travel across generations

Lars E. Olsson received funding for the project “Life events and energy-efficient travel across generations”. The aim of the project is to study life events and other psychological factors in different generations to identify what influences sustainable and resource-efficient travel. Important factors will be compared between generations to see if there are lessons to be learned from one generation to another. The project has a budget of SEK 4.8 million, and is conducted within the Swedish Energy Agency’s program “Curiosity-driven research for a sustainable energy system”.

## Potential for energy efficient travel in an aging population

Margareta Friman received an additional SEK 1.4 million from the Swedish Energy Agency, and one additional year’s extension, for the project “Potential for energy efficient travel in an aging population”. The aim of the project is to study how the current corona pandemic is affecting elderly’s daily travel. The project, which was first launched in 2018, now has a total budget of just over SEK 6 million. It is carried out in collaboration with the European network BEST, Benchmarking in European Service of Public Transport, with actors in Bergen, Oslo, Copenhagen, Helsinki, and Stockholm.

## New initiative to develop a sustainable transport system

Margareta Friman received funding from Formas, to plan and further develop the project “Social dimensions in urban and regional planning: the importance of perceived accessibility”. The aim is to develop a joint project about everyday travel and perceived accessibility, in collaboration with urban and regional planners and practitioners.



Carolina Camén



Lars E. Olsson



Margareta Friman

## IoT for sustainable societal benefit and a better life for everyone in an interconnected world

CTF, led by Erik Wästlund, will investigate how the Internet of Things, IoT, can be used in creating a better school environment and improving student health and find out how IoT can measure children's and young people's health at school. The project is part of the research within DigitalWell Arena. It is carried out together with a number of actors, and is based on a secondary school in Arvika Municipality. The project is a part of the collaborative project "IoT for sustainable societal benefit and a better life for everyone in an interconnected world" led by Arvika Municipality until 2022 as part of the strategic innovation program for the Internet of Things (IoT Sweden), a joint venture by Vinnova, Formas and Swedish Energy Agency.

Read more: [digitalwellarena.se/aktuellt/forskning](https://digitalwellarena.se/aktuellt/forskning)

## Självstyrande team

Martin Fransson is a researcher within "Självstyrande team" (Self-governing teams) a so-called hypothesis lab that aims to explore alternative ways of organizing the public sector based on trust-based governance and management. Självstyrande team is part of the project "Den (ut)forskande staden" lead by FoU Helsingborg.

Read more: [fou.helsingborg.se/denutforskandestaden/sjalvstyrande-team](https://fou.helsingborg.se/denutforskandestaden/sjalvstyrande-team)

## New arena for person centered and integrated care

CTF, led by Johan Quist, is one of the initiators of a new arena for learning and experimentation to support the transition of the health care initiative towards a more person centered and integrated care. The initiative is conducted in cooperation with the Swedish Association of Local Authorities and Regions, Experio Lab Sweden, Design at Linköping University and the City of Helsingborg. They will together with municipalities and regions create a neutral arena for co-creation, develop new work routines, and learn about the complex challenges that are linked to health and the development of person-centered and integrated care.

Read more: [experiolab.se/vad-ar-halsolabb](https://experiolab.se/vad-ar-halsolabb)

## IndBygg - Industriell Träbyggnation

CTF is part of the EU project "IndBygg - Industriell Träbyggnation". The project was initiated in January 2020, and aims to increase the competence within industrial wood construction and to promote collaboration in the industry. The project is led by Paper Province in collaboration with IUC Dalarna, Karlstad University, and Region Värmland.

Read more: [paperprovince.com/projekt/indbygg](https://paperprovince.com/projekt/indbygg)



Erik Wästlund



Johan Quist



Martin Fransson



# Selected research related to Covid-19

Here are some examples of our research related to the coronavirus pandemic (Covid-19).



## The music industry: challenges and solutions in the wake of the pandemic

A study on how different actors in the music and event industry are affected by the corona pandemic, what they need to handle the current situation and how it can lead to development and innovation in the industry. A survey was conducted during the summer. About 70 actors, including light and sound technicians, suppliers, music companies, musicians and artists, mostly from Värmland, but also from other parts of the country, responded to the survey. The study is conducted within the MECO project with support from Interreg Sweden-Norway, the EU, Hedmark County Municipality, Arvika Municipality and Region Värmland. The project leader of MECO is **Jenny Karlsson**.



## What impact does the corona pandemic have on elderly's daily travel?

A study, led by **Lars E. Olsson**, on how elderly travel before, during and after the corona pandemic, and what consequences for energy efficient and sustainable travel. The researchers will look at how the elderly have changed their travel habits, how this is experienced, and what significance the travel has for wellbeing and the opportunity to live the life they want to. They will also look at how older people can be motivated to travel more energy-efficient in the future, and what conditions are necessary for older people to replace their everyday travel by car with more environmentally sustainable transport. The project is carried out in collaboration with the European network BEST, Benchmarking in European Service of Public Transport, in cooperation with actors in Bergen, Oslo, Copenhagen, Helsinki, and Stockholm, and is funded by the Swedish Energy Agency.



## How does the coronavirus change people's habits and behaviors?

A study, led by **Erik Wästlund**, on how people's habits, behaviors and experiences are changed and affected by the coronavirus. A survey was made during the spring, and the researchers want to investigate how people's habits and behavior are changing as a result of the coronavirus crisis. What new habits arise, and which ones do you want to continue after the crisis? What old habits are impossible to maintain with the help digital technology, and which will you resume when the crisis is over? The study will generate more knowledge about how digitalized services can be used in the best possible way, and what significance physical places have for people. The study is conducted within DigitalWell Arena.

# Research highlights and impact stories

## DigitalWell Arena: 10 years to co-create future wellbeing

By joining forces with the public sector, academia, civil society, entrepreneurs and business, CTF is addressing challenges regarding the digitalization of health and welfare services as one of the partners within DigitalWell Arena.

CTF has, together with Computer Science, Nursing, and Gender studies at Karlstad University, been a part of the initiative “Academy for smart specialization” focusing on the digitalization of health and welfare services since 2015. The aim of the academy has been to strengthen the collaboration between the academic research and the surrounding industry.

In 2019, the work of the academy evolved into the ten-year Vinnova initiative “DigitalWell Arena” focusing on co-creating digital solutions to increase the individuals capability to live a healthier life, and enables the individual to co-create their own health. The initiative is driven by Compare and involves the public sector, academia, civil society, entrepreneurs and business.

CTF has been involved in the initiative since the start. Researchers have, in collaboration with participating partners and actors, conducted several activities to create new knowledge and

transformation within digital health and future wellbeing.

During 2020, several arenas for health (Hälsoarenor) - physical places and environments where the public sector, academy, business and society can work together on how to solve challenges related to health - were initiated in Värmland. Arvika and Karlstad municipalities, the academy and business are working together in projects that focus on how to use Internet of Things (IoT) technology to strengthen the work with health promotion.

“The arenas for health that were initiated during the year is a receipt that the work that was started in 2015 is still evolving in collaboration with the surrounding society,” says Erik Wästlund, associate professor of Psychology at CTF and one of the researchers within DigitalWell Arena.

Read about DigitalWell Arena at [digitalwellarena.se](https://digitalwellarena.se)

CTF has contributed to the development of interdisciplinary research within DigitalWell Arena in various ways. The researchers have strongly contributed to the success of our innovation cases, played an important role in supporting entrepreneurs and the public sector, and contributed to spreading knowledge in our various events. During the year, we have also had an exciting dialogue about how we together can form a new transformation support, to facilitate innovation and collaboration between the public sector and innovative companies.”

**Magnus Bårdén**

Managing director in DigitalWell Arena



# Hello there, Stefan Roxenby, Director Business Development at BillerudKorsnäs...

... you are one of our partners within the project Servzchall. In what way is research conducted by CTF, and our collaboration important for your company?

"CTF has an extensive and valuable knowledge on services and value creating through service. BillerudKorsnäs is mainly a product-oriented company. Our collaboration has provided us with new perspectives, and have pushed us to continuously return and reflect on the service perspective. It has also given us an opportunity to interact with companies in other industries, with similar challenges, to gain inspiration and to share experiences. Furthermore, our collaboration has helped us drive discussions related to services further internally and provided a base for new perspectives."

## How is servitization important for your competitiveness?

"To work from a customer's perspective, and in various ways complement our product offers, makes us more relevant to our customers and differentiates us from competing offers. Continuous development is crucial in order to keep up with the latest developments, and to stay in the forefront. Having a servitization approach helps us better understand other actors in the packaging value chain that we operate in, and it makes us a more interesting business partner."

## What is the significance of servitization in your organization today, compared to ten years ago?

"We may not think of it as servitization, but in a mature industry, customer focus, differentiation and development of the offer related to core product are important parts in maintaining and developing our competitiveness. Collaboration between different actors in the value chain in new constellations is also more common, and increasingly important to create change and innovation."



## Can you give an example of what you do different today as a result of our collaboration?

"Although we may not call it or speak of the term servitization, I think we are mentally better prepared and equipped to capture and frame ideas that fall under the meaning of servitization. Our collaboration with CTF has made it easier for us to include parts of servitization in our business development when they naturally appear and fit in."

"The project ServzChall, led by Maria Åkesson, aims to create more knowledge on servitization in manufacturing companies. It is conducted in collaboration with BillerudKorsnäs AB, Kongsberg Maritime Sweden, Voith Hydro AB and Cellcomb AB, and is funded by the Knowledge Foundation, Karlstad University and participating companies during 2018-2021.



# The Swedish Innovation Index

## - innovation from the customers' perspective

CTFs' work with the Swedish Innovation Index is one way to share our knowledge on service innovation and to contribute to a sustainable development of business and society.

In September 2020, we presented our second survey and the Swedish Innovation Index 2019. Ikea was, for the second year in a row, ranked as Sweden's most innovative company. Followed by Spotify and MTR Express in second and third place respectively.

Common for Ikea, and other companies who customers view as innovative or that have become much more innovative since our first study, is that they have succeeded to adapt to a changing market. This by introducing new services and implement changes that are important and noticeable to customers. One important key to increased innovativeness, is to listen to customers and to capture upcoming needs and use this to shape the future of the market.

According to the Swedish Innovation Index 2019, Ikea's leading position is due to the fact that they introduce new products and test new services and business models to a greater extent than their competitors. Their success is reflected in international innovation studies in the US and Norway. In these studies, Ikea is considered more innovative than firms such as Apple and Amazon.

The Swedish Innovation Index 2019 includes responses from almost 14,000 customers who

have ranked the degree of innovativeness of approximately 80 companies and organizations in ten industries. The customers have evaluated the company's offer, delivery, encounters, and interactions to better understand how customers experience the company's innovativeness, and how attractive these innovations are perceived.

The purpose of the index is to complement traditional ways to measure innovativeness, such as patents and R&D expenditures, and contribute to a better picture of innovation in service industries. This provides politicians and business leaders with a better measurement tool that provides knowledge of how Swedish businesses are doing when it comes to innovation.

*Lars Witell*  
*Professor in Business Administration*



The Swedish Innovation Index was first launched in 2019. It is developed by researchers at CTF and Karlstad Business School in collaboration with NHH Norwegian School of Economics and Fordham University, USA. Read more at [ctf.kau.se](https://ctf.kau.se)



Our founder Ingvar Kamprad was a true entrepreneur whose innovative spirit lives on in our organization to the highest degree. We believe that our innovative power basically comes from listening to employees who dare to think differently, are curious and questioning. Our desire to be close to people's everyday life and understand the life at home also helps us to constantly challenge and create smart solutions that better meet our customers' needs.

**Susanne Jensert**  
Customer manager at Ikea Sweden



# Research on how to ensure a well-functioning digital market

CTF and the Swedish Consumer Agency have been collaborating in various projects, focusing on consumer behavior and how to safeguard consumers' interests when purchasing goods and services. The latest project is focusing on barriers to a well-functioning digital market.



In 2020, the Swedish Consumer Agency was assigned by the Government of Sweden to identify and analyse significant barriers to well-functioning consumer markets and to sustainable consumption. The research was carried out by Erik Wästlund and Agnieszka Kitkowska who has been involved in this project, contributing with their expertise in behavioral science focusing on consumer behavior.

"Consumers constantly experience barriers and challenges that make their purchase choice more difficult. In this project, we have focused on creating more knowledge about these barriers," says Erik Wästlund, associate professor of Psychology at CTF.

The researchers have made a systematic literature review to identify so called dark patterns in digital markets. Based on the findings, they re-

categorized the identified dark patterns according to their impact on consumers and mapped them to the behavior change COM-B (Capability, Opportunity, Motivation-Behavior) model and behavioral change wheel. Additionally, the literature review and a series of expert interviews were used to recognize barriers to understanding and acting according to the disclosures included in terms & conditions agreements.

The results are compiled in the report "Barriers to a well-functioning digital market – effects of visual design and information disclosures on consumer detriment" (published in March 2021). The report provides in-depth information on barriers to a well-functioning digital market, and what measures could be taken, mainly by regulators, to ensure a well-functioning market. The findings might be useful to policymakers and regulatory bodies, as well as a basis for future research on this topic.

During 2021, the results will be presented and distributed to consumers, consumer organizations, companies and others, both national and internationally, as well as within the Swedish Consumer Agency. This will be an ongoing work through the year, that partly will include the researchers. The Swedish Consumer Agency will also present the results of the assignment to the Swedish Government in the end of the year.

Read more at [konsumentverket.se](https://konsumentverket.se)



Behavioral science is significant in our work to protect consumers' interests in relations with businesses. Collaborating with researchers at CTF is a way for us to have a scientific base in our work and access to the latest research in the field.

**Johan Högberg**

Behavioral scientist at the Swedish Consumer Agency

# Collaboration within Service Convention Sweden - co-creating and shaping future welfare services

CTF is collaborating with Karlstad Congress and Culture Centre, Karlstad Municipality, Region Värmland, Compare and DigitalWell Arena, as the organizers of the biannual conference Service Convention Sweden. This work continued to flourish in 2020, when the fifth edition of the conference was held.

Service Convention Sweden is a national conference that gather representatives from the public sector, academia and the business sector to focus on how some of today's most important societal challenges can be solved with the help of new digital solutions, business models and working methods. It is also one example of an ongoing collaboration between academia and practice.

"Just like our research at CTF, the conference highlights the importance of focusing on user needs when developing new services. To be more successful in developing future welfare services, we must start from the users' – the customers, patients or citizens – perspective," says Per Kristensson, director of CTF.

The fifth edition of Service Convention Sweden was held in November 2020, and focused on collaboration, data, and service design.

"We live in challenging times where we constantly need to adapt and adjust – something that most of us have experienced during the current pandemic. The question is, how can we together find solutions and help each other rethink and think in new ways? This was the starting point for the conference," explains Per Kristensson.

The work with arranging the conference was, as everything else during 2020, affected by the ongoing pandemic. The conference is usually held at Karlstad Congress and Culture Centre, but half way through the planning stage the conference was transformed into a hybrid event, due to corona restrictions, and in the end it was held fully digital. Both speakers and delegates were quick to adapt to the new situation, and the conference was held with good results, and satisfied participants and delegates.

The conference was initiated in 2014, and is a co-arrangement between CTF, Karlstad Congress Culture Centre, Karlstad Municipality, Region Värmland. In 2020, Compare and DigitalWell Arena joined the collaboration.

"Collaboration is an essential part of our work. CTF has, for more than 30 years, conducted research in collaboration with business and public organizations. Disseminating research results and sharing new knowledge is essential. This is why CTF is one of the co-organizers of Service Convention Sweden," says Per Kristensson.

Read more at [serviceconventionsweden.se](https://serviceconventionsweden.se)

Our collaboration with CTF, in regards to Service Convention Sweden, is very important since it enables us to co-produce an event with substantial and important content and anchoring the conference in the service research community. We are proud and happy with the results of Service Convention Sweden 2020, and are already starting to set the frame work for the 2022 edition.

## **Maria Alm**

Project manager of Service Convention Sweden and Congress manager at Karlstad Congress Culture Centre



# Communication and dissemination activities

Research communication is an important part of CTF's activities. During the year, we arranged several events and presented our research nationally and internationally.

In 2020, we arranged, and co-arranged, several seminars and events. For example:

- Service Convention Sweden 2020 was arranged on November 25–26 in collaboration with Karlstad Congress Culture Centre, Region Värmland, Karlstad Municipality, Compare, and DigitalWell Arena. The conference gathered the public sector, academia and business to discuss and present how some of our most important societal challenges can be solved with the help of new digital solutions, business models and working methods.
- Tjänsteinnovationsdagen 2020: Kunddriven tjänsteutveckling was held on September 24 as a digital "Service innovation hour" on Zoom with a focus on customer-driven service development and the results of the Swedish Innovation Index. The event attracted over 120 participants.
- The Ninth National Conference in Transport Research was hosted by CTF on October 21, and co-arranged with Chalmers University of Technology, Gothenburg University, Centre for Transport Studies at KTH Royal Institute of Technology, Linköping University, Lund University, and the Swedish National Road and Transport Research Institute, VTI. The annual conference gathered Swedish transport researchers around issues concerning the Swedish transport system. The conference is an arena for networking, exchange of experiences, and an opportunity for doctoral students to present and discuss their dissertation projects.
- The Fifth Sustainability Day was held on December 7, and was arranged by Karlstad Business School in collaboration with CTF.

Several researchers were invited to speak at seminars, public events and research conferences during the year. For example at:

- "VIP Graduate School's Grand Finale Seminar" in connection with Paper Province Papermakers Light, November 12.
- DigitalWellCongress, August 28.
- ServSig - American Marketing Association International Service Research Conference, July 9–12.
- Vienna Music Business Research Days on Emerging Music Markets", 21–23 September.
- Hawaii International Conference on System Sciences (HICSS), January 7–10.
- Virtual Edition of the Forum on Markets and Marketing 2020, September 8–9.
- AMA Winter Academic Conference, San Diego, February 14–16.

During the year, we published eleven national and seven international press releases and news articles. Six electronic newsletters (in Swedish and English) was published and distributed to national and international subscribers. Eleven blog posts and seven book tips, written by our researchers and guest researchers, were published on our webpage [ctf.kau.se](https://ctf.kau.se). We were active in the following social media channels during the year:

- Twitter: [@CTFse](https://twitter.com/CTFse)
- Facebook: [CTFServiceResearchCenter](https://www.facebook.com/CTFServiceResearchCenter)
- LinkedIn: [ctf-service-research-center](https://www.linkedin.com/company/ctf-service-research-center)
- Youtube: [CTFse](https://www.youtube.com/CTFse)
- Instagram: [@kauresearch](https://www.instagram.com/kauresearch)



# CTF in Media

2020 broke all records in the amount of media articles written about our research, with about 270 hits in media. Our research on food waste and food packaging, human behavior in relations with corona, and phubbing received the most attention, and appeared for example in: Svenska Dagbladet, Aftonbladet, Expressen, Dagens Nyheter, SVT, SR, Nya Wermlands-Tidningen, and Värmlands Folkblad.

Selected articles in media:

- Covid-kommunikationen biter inte tillräckligt – trots stora satsningar (Nyhetsmorgon TV4)
- Plastemballage mindsker madspild - men danskerna er ikke begejstrede (alltomteknik.dk)
- De forskar om hur coronakrisen drabbar musiken (SVT)
- Byter vi resvanor när livet förändras? (Tidningen Extrakt)
- Forskaren inför Black Friday: "Butikerna har ett ansvar" (NWT)
- Ny studie: Tvång kan få dig att leva mer hälsosamt (SR)
- Så minskar du matsvinnet - forskarens enkla tips (forskning.se)
- Klisterlappar ändrar inte folks smittsamma beteende (DN Debatt)
- Ikea mer innovativt än Amazon och Apple (forskning.se)
- Låt ditt barn cykla till skolan (forskning.se)
- Vi tar alla chanser till underhållning (SR)
- Det vill många göra när pandemin är över (P4 Värmland)
- Forskare undersöker hur coronakrisen påverkar våra vanor (svt.se)
- Storpack i butiken ökar matsvinnet (Aftonbladet)
- Mobil i kassan kasst för personalen (Göteborgs Posten)
- Bilen har blivit vårt eget mystiska rum (Aftonbladet)
- Handbok ska göra färdtjänstresan bättre (bussmagasinet.se)
- Klimatångestdoktor om tygpåsar och miljöpåverkan (P4 Värmland)



Helén Williams, associate professor in Environmental and Energy Systems, was one of our researchers that was most visible in media. She appeared, for example, in several news articles and in the radio series "Klimatångestdoktor" where she commented on different topics related to the climate and how to reduce our impact on the climate.



# Education

In addition to research, our researchers are active in and have important roles in undergraduate, graduate, and postgraduate education. Several researchers are also involved in education for professionals. Here are some selected examples of how researchers at CTF contribute.

Researchers and PhD students associated with CTF are active in teaching and supervising at different levels. Particularly within Karlstad Business School and in Business Administration, but also in other disciplines such as Psychology and Environmental and Energy Systems.

In 2020, researchers at CTF had leading roles in two education programs offered by Karlstad Business School (Business and Economics and International Business), and in two master programs (Master in Service management and Master in Marketing). 21 master's theses in Business Administration were connected to streams of research at CTF. Researchers at CTF contributed to the Master of Science in Psychology Programme, and had leading roles as "Head of discipline" and "Director of studies in doctoral education" within Business Administration and Psychology.

## New master programme with a unique combination

In 2020, the Master Programme in Innovation and Service Development was introduced at Karlstad Business School. It combines innovation with a focus on services and business creation, a combination which is the first of its kind in Sweden. The programme is based on research conducted by CTF, and was developed in close collaboration with leading businesses. Several researchers were involved in this work.

"This programme is a way for to take advantage of the world leading research at CTF in the areas of service development and innovation management and use it in education," says Antti Sihvonen, former

researcher at CTF and lecturer at Karlstad Business School. "In this way, we create courses of excellent quality in this area of study."

## Doctoral studies

During the year, 20 PhD students in the disciplines Business Administration, Psychology, Political Science, and Machine Design were associated to CTF. Seven of them are associated with MIT, the Swedish research school of Management and IT, a national research school and arena for exploring IT-related phenomena that intersect several disciplines in the area of management and IT.

Petter Falk, PhD student in Political Science, was associated with the WASP-HS graduate school, which addresses challenges and consequences of autonomous systems and AI in society. Alexandre Sukhov successfully defended his doctoral thesis in Business Administration. CTF researchers and administrators were involved in arranging the PhD course "Overview course in business administration".

## Education for professionals

Many of our researchers were also involved in education for professionals during the year. For example within ISE (read more on page 27), and in collaboration with Karlstad University's Uppdrags AB commissioned education in the course "Facility Management from a service perspective".

# **ISE** - a graduate professional development program to strengthen the Swedish business sector

Within “ISE, Improving value creation through service education” we develop and offer flexible courses at advanced level for professionals in collaboration with businesses and organizations.

In 2018, CTF received funding from the Knowledge Foundation to develop and offer flexible courses at advanced level for professionals in the project “ISE, Improving value creation through service education”. The funding is within the framework of the Knowledge Foundation’s Graduate professional development program - a program that aims to develop courses and education by matching the skills and development needs in the business sector with the knowledge and skills that exist in strong academic research environments.

The overall vision for the ISE is to equip Swedish companies with knowledge and skills to explore, exploit, and benefit from understanding the service challenge, including service development and innovation, service management, servitization, and customer experience.

The aim of ISE is to develop courses in collaboration with partner organizations and companies that match and support their specific competence development needs and thereby strengthen their competitiveness.

Our partners contribute with important and valuable knowledge and experiences that are essential for the project. Some of our partners are: Almega, Attitude, BillerudKorsnäs, Cellcomb, Compare, Färjestads BK, Live Nation Nordic AB, Löfbergs, NWT, Miller Graphics Group, RISE, SMA Mineral AB, Uddeholm AB, and Volvo Bus Corporation.

During Step 1 within ISE (2018-2020), two pilot courses were developed and effectuated. Pilot course 1: “Designing and Implementing Service Strategies” (10 credits), was based on a computer simulation of a functional service. Participants examined different decision alternatives and

analyzed and discussed the implications for a service business based on service theories. The course provided knowledge and experience needed to create and implement a long-term, competitive and sustainable business strategy.

Pilot course 2: “Applying service research for professionals” (5 credits) aimed to provide participants with a greater understanding of service research and how it can be used in practice to increase competitiveness and profit due to today’s challenges. During the course, concepts, theories, and models about service management and service innovation were presented and discussed.

In 2020, CTF applied and received additional funding to further develop and implement courses on a larger scale in cooperation with the organizations and companies. ISE step 2 started in September 2020, and will run until 2024.

*Carolina Camén*  
*Program manager for ISE*

Learn more about ISE at [ctf.kau.se](https://ctf.kau.se)







# **CENTRUM FÖR TJÄNSTEFORSKNING**

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