A workshop based approach to facilitate **Danisch companies** in the new competences needed to **lead** in today's **digital** society.

I4L
Innovation for Leadership

INDUSTRIENS FOND FREMMER DANSK KONKURRENCEEVNE
The Danish Industry Foundation

IT UNIVERSITY OF COPENHAGEN

Management Summary

IT has become a vital part of our daily lives, requiring new skills among today's leaders, who need to keep up with competitors and meet the needs of employees and customers. This applies to nearly every industry - from clothing manufacturers to logistics companies.

However, many leaders find it difficult to keep up with the impacts of digitalization, but the ability to think and act in a digitally innovative way, is absolutely essential for business leaders. For example, most leaders need to be capable of exploiting the potential of collaborating virtually with employees, customers and business partners.

If companies are not aware of "new digital opportunities" they will fail to provide their employees with the appropriate digital tools that support their daily tasks. For instance, we see the increase of 'Shadow IT': Employees use IT that is not officially approved by the company and that they own privately. This does not happen because the employees want to do something "illegal", but simply because they feel it is necessary to use a more efficient tool (such as Whatsapp or Dropbox) to execute their tasks. This may have negative consequences for the companies. However, leaders who know how to leverage the use of shadow IT and think innovatively can gain a lot for their company.

From September 2017 until January 2019, we tried to inspire the leaders and provide them with an overview of specific methods and tools to exploit digitalization, whilst reducing the risks associated with it.

_____

„With a series of workshops and a conference we aimed to inspire Danish leaders and provide them with knowledge of specific methods to embrace and use the benefits of the ongoing digital transformation of our economy and society."

_____

I4L
Innovation for Leadership

Content sumary

I4L
Innovation for Leadership

Facts & vision

Vision & Mission

- **Inspiring and upskilling** leaders to deploy new forms of digital innovation

- **Enhance** Denmark's strength and competitiveness in the Digital Society

- **Enabling** leaders to manifest new leadership styles in their organizational practices

- **Strengthening** A2I (Academia to Industry) **relations**

Key facts

- It was developed by a strong group of researchers at the **IT University of Copenhagen (ITU)**

- I4L (Innovation for Leadership) was funded by the **Danish Industry Foundation**

- The program took place from **September 2017** until **January 2019**

- In **various workshops** participants were provided with cutting-edge insights into the requirements for **leaders** in today's **digital economy**

INDUSTRIENS FOND FREMMER DANSK KONKURRENCEEVNE
The Danish Industry Foundation

The Danish Industry Foundation (Industriens Fond in Danish) was founded in 1898 under the name Kredit-foreningen for Industrielle Ejendomme.
The Foundation develops and supports innovative, inspirational and economically sustainable projects and initiatives that strengthen the competitiveness of the danish industry.

IT UNIVERSITY OF COPENHAGEN

The IT University of Copenhagen (ITU) was established in 1999 and is Denmark's leading university focusing on IT research and education. ITU´s aim is to deliver state-of-the-art teaching and research within computer science, business IT and digital design.

I4L
Innovation for Leadership

What is leadership?

Leadership defines what the future should look like, aligns people with that vision, and inspires them to make it happen despite the obstacles.
(John P. Kotter)[1]
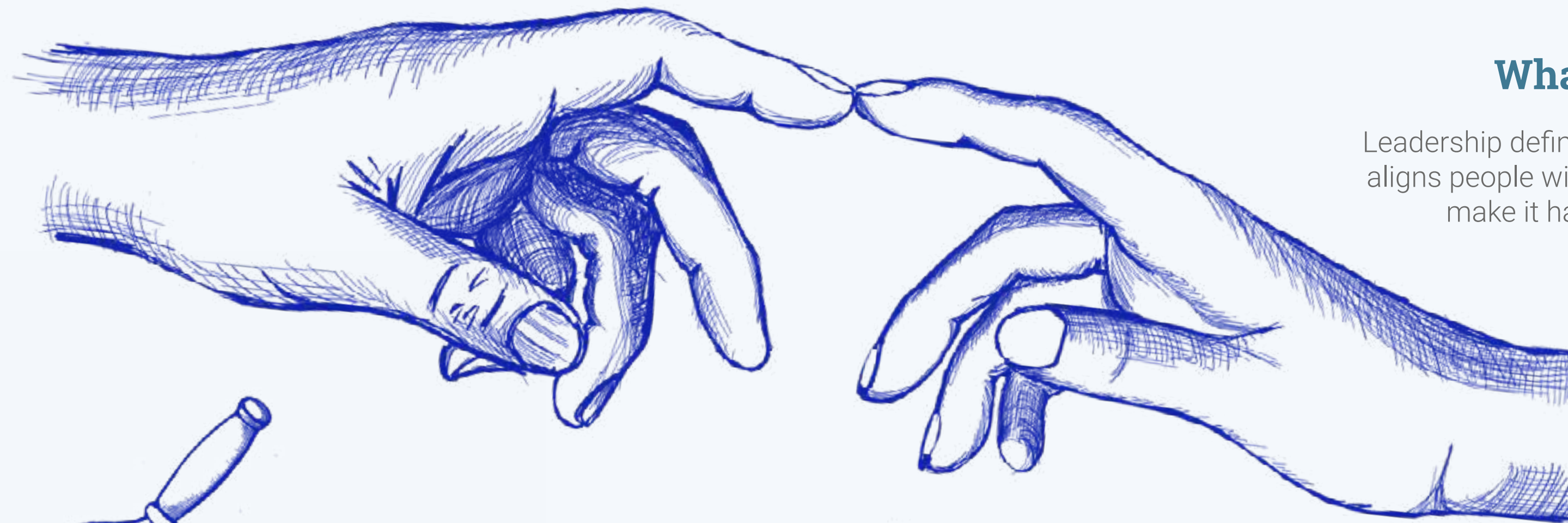
What is management?

Management is focused on well-known processes, planning, and budgeting with general emphasis placed on administrative tasks.
(John P. Kotter)[1]

What is digital leadership?

A social influence process mediated by technology to produce a change in attitudes, feelings, thinking, behaviour, and/ or performance with individuals, groups, and/or organizations.
(Richter und Wagner)[2]

i4L
Innovation for Leadership

#1 Digital Leadership and Communication

The first workshop "Digital Leadership and Communication" took place at ITU on September 8, 2017. Through inspirational presentations from experts, idea generation and group work, the first workshop touched a variety of topics.

The workshop was kicked off by an inspirational keynote on "Leading Creativity in the Digital Workplace", by Mette Kim Bohnstedt. With many hands-on examples Mette illustrated how our jobs are changing, how we are bombarded with information, and how creativity occupies an important role in the new digital society.

Central themes

• Digital Leadership

• Digital Communication

• Digital work: Why, what, how

Participating companies representing:

• Food and beverage

• Medico

• Media

• Insurance fund

• NGOs

Individual action points that leaders took home

――――――

„be more inclusive towards digital workers and have more frequent communication, despite the time zone difference"

――――――

„a really useful framework for continuing my work within digital transformation"

――――――

„focus on building an atmosphere for creative thinking"

I4L
Innovation for Leadership

The central pillars of digital leadership

Communicate

- Built group pride
- Prompt, predictable and frequent communication
- Persuade, engage or summarize in writing
- Provide constructive feedback
- Signaling roles and responsibilities

Adapt

- New technology
- Performing multiple leadership roles simultaneously
- Culture and values of the group or organization
- Building a sense of presence online
- Technical uncertainties

Listen

- Solicit input
- Enterprise Social Network or public town halls and groups
- Read online communication attentively
- Personal knowledge Infrastructure

Understand

- Motivation
- Challenges and opportunities of digital communication
- Technical needs of your employees
- Physical and digital social networks and their unspoken norms

Empathize
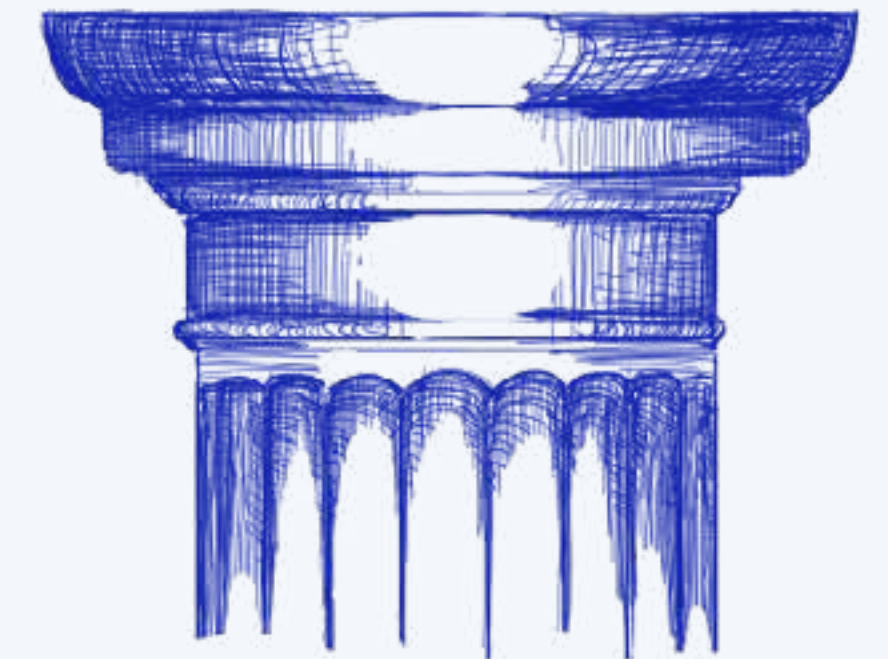
- Contextual awareness
- Appreciative of team members opinions and suggestions
- Needs and feelings of (digital) employees
- Sensitive to team members schedules
- Exhibits care and concern over team members problems

(Raluca Alexandra Stana, Alexander Richter, Matthias Trier, Hanne Westh Nicolajsen)[3]

i4L Innovation for Leadership

Associate Prof. Dr. Alexander Richter

What does digital leadership mean to you?

Digital leadership means acknowledging the impact of digital technologies on how we work and on leadership specifically and how leaders have to adapt their approach to leadership. They should be aware of this change.

What importance do you attach to new developments in information technologies, for example social network tools?

Digital leadership is also about digital tools or information technologies but it's first of all a mindset. As a leader I have to understand the implications, the chances and opportunities, but also risks of new ways of work and virtual communication. From my perspective leading in the digital age it is not so much about knowing how a tool works. It is more about understanding what impact this tool has on my team or my organisation and how I should react to this.

From that perspective I would say there is a lot of critical issues to know about and a lot of experiences to be made. There is a lot of different approaches and opportunities to address this change but every leader has to find her or his way to do that. There are also many circumstances that have to be considered, not only the experiences and the background of the leaders but also the ones of their team. It is also about the organisational context and the practices in the organisation and other things. This is why we initiated the i4l project: we were aware that Danish organisations faced various challenges depending on their organisational context. We

wanted to support them to make sense of this digital transformation and inspire them with solutions which others have found. We also wanted to provide them with knowledge and specific approaches to address this change.

Do you have any examples for positive and negative effects when pushing digital transformation forward?

There are a lot of effects that we are aware of and connected with that is a lot of anecdotes to be told. Positive and negative. I guess it is important to be aware of both, to reduce the negative impact as much as we can and then put the positive in the forefront.

„Leading in the digital age it is not so much about knowing how a tool works. It is more about understanding what impact this tool has on my team or my organisation."

Let me start with a negative one, for example social media and also other forms of written communication reduce the richness of our communication and there is a big risk involved to misunderstand others. To write things that we wouldn't say if we were confronted personally. On the receiver side, it is also about misjudging communication and coming to wrong conclusions from it. We have to be aware of that and think about whether we should communicate in

this situation with a digital tool or not. Some cases, for example video calls, are better than written communication, but we cannot have video calls in every situation. An important decision, a leader has to make is, how to communicate.

On the positive side, especially social media can increase transparency a lot, especially for people who would normally not be part of the communication because it is behind closed doors. What we see is, that social media can be very inclusive, that means it can let people be part of a conversation they wouldn't have been part of otherwise. And this is a great opportunity for a company for example when it comes to innovation. So how can we include more people to innovation, how can we make more democratic decisions in a company or organisation or even as a government. Or just making people aware so that they understand our decisions.

You talked a lot about communication, this was also a major topic in several workshops, where we came up with the kindness factor and how to establish trust, what is meant by that?

Yes, that's one of the issues that have to be considered. As I just mentioned, text based messages reduce the richness of communication. So when we write an email, we have to consider that the other person does not see whether we laugh or smile or think something is funny, we are annoyed or angry when we write a message. The other person will judge what we write against their

i4L
Innovation for Leadership

own mood, background or perception. We have to be really careful how we write things because the other person might understand our message in another way. This reduced channel richness actually contributes to a lot of miscommunication. Being kind in an email is always a very good idea because it helps the other person to believe that you had only the best intentions when you wrote your email. It helps us to find a more truthful way of communication.

Trust is another topic and it is for me personally one of the most essential ingredients of successful cooperation. More trust means cooperative behaviour and less transaction costs. All our behaviour creates or reduces trust. What we know from many studies is that it is easier for us humans to trust, when we can relate to other people. A person might be in a similar age, have the same interest or background… but it is also very helpful to get visual feedback from another person. Nodding or smiling during a conversation. And when we work remote, it is harder to relate to each other in that way, but IT can help to improve that.

What is the status quo of digital leadership in Denmark?

Since we had quite a number of companies across our four workshops and our conference, we saw nice examples or helpful examples from many leading danish companies like Maersk, Danske Bank, Pandora, TV2, Carlsberg, … but also smaller companies. What we saw is that Danish companies are open to new ways of communication and to digital leadership and they are very aware that this is an important topic for how they work now and how they will work in the future. What we saw, as well, is that for many Danish companies that act internationally it is very important to stay in close contact with their colleagues overseas, in the US, India or China. And they are appreciating this new way of com-

munication, but still they are also hesitant and a bit worried about what this will do to their daily work and need guidance. I think with the project we contributed to this by informing a few dozens of leaders. However, this is not a one off thing, so I think what we need is a continuous conversation about how we work and how we lead in the digital context, so this project has just been one of the starting points and we hope that this report will also contribute to a bigger conversation about digital transformation in Danish companies.

What was your best learnings from the workshops?

Digital leadership is a very complex undertaking. The reason why we decided to have the workshops opposed to have quantitative studies where we tried to find out the top ten sectors or something is, that with workshops or communicating around best practices and case studies and about the specific examples of the companies is actually acknowledging the fact that there is not some ultimate factors.

> „What we saw is that Danish companies are open to new ways of communication and to digital leadership and they are very aware that this is an important topic for how they work now and how they will work in the future.“

It is rather about creating some experience to enable people to take the right decision in their context. I wouldn´t refer to one or two or five best things to do. I think it is more important to point to the fact, that digital leadership and how to lead the digital transformation and changing

a company, is something that needs to acknowledge all the different background informations about the leader, about the company, about the team's or the organisation and to take decisions based on that.

i4L
Innovation for Leadership

From a managers perspective, what keeps people from using digital tools?

Knowledge

- Difficulties to find certain information
  (due to the Enterprise Social Network structure)

- Relevant information is not being identified
  (and acknowledged)

- Danger of not to receive the
  important information

- Potential obsolescence of information

- Conflicting information

- Not replacing other existing tools

- Lack of feedback

Skills

- Loss of the information context
  (informative value)

- Higher complexity due to coordination
  of more channels

- Expenditure of time
  (due to the scope of their normal)

- Determination of the boundaries between
  private life and work

- Potential for conflict

- Lack of processed information

Attitudes

- Rejection of the public (due to large
  number of users)

- Reservations about new tools and
  communication forms

- To adhere to accustomed work routines

- Secrecy of knowledge

- Rejection of new information channels

- Pressure to take an active part in the
  Enterprise Social Network

(Alexander Richter, Corinna Hetmank, Julia Klier, Mathias Klier, Maria Müller)[4]

#2 Transformational Leadership and Disruptive Innovation

The workshop "Transformational Leadership and Disruptive Innovation" took place at ITU on April 9, 2018. The main focus was on providing knowledge, tools, and methods to both recogniz the opportunities and tackle the challenges related to disruptive innovation and digital transformation. The central questions were: How can leaders stay informed and have a creative attitude towards new business models and opportunities, opened by disruptive innovation? How to plan for the hierarchical impacts of technology? How should your organization be structured to be able to explore new business opportunities?

Central themes

- Transformational Leadership
- Disruptive Innovation
- Open Innovation

Participating companies representing:

- Finance
- Medico
- Shipping
- NGOs

Participant feedback on understanding the problem

"In my experience there is a need for a new innovation process. We have much that can be improved

Participant feedback on what they have learned

„How to work with discontinuous innovation"

„Not to be afraid of just starting, to try"

i4L
Innovation for Leadership

Golden circle of digital work

Why

- Being an attractive employer
- Reducing cost (e.g. rent, maintenance)
- Employees demand more flexible working conditions
- Fostering communication and collaboration
- Fostering remote communication
- Increasing knowledge exchange and transparency
- Providing home office opportunities for employees
- Providing place and timeindependent working conditions
- Supporting open organizational culture

How

- Digital townhalls, Q&A sessions
- Initiated by top management
- Roadshows
- Pilot projects
- Directives and (social) guidelines
- Viral rollout
- Mentoring system
- Incremental rollout strategies
- Training & Information campaigns

What

- Collaboration platforms
- Co-working spaces
- Digital desktop
- Enterprise social networks
- Feedback systems
- Innovation platforms
- Meeting planning systems
- Mobile access to emails and calendars
- News apps (mobile)
  Team Collaboration (Skype, …)

How

what

why

(Sven Dittes, Shahper Richter, Alexander Richter, Stefan Smolnikr)[5]

i4L
Innovation for Leadership

Associate Prof. Dr.
Hanne Westh Nicolajsen

What does digital leadership mean to you?

This is a broad question! Digital leadership is performed on different levels within the organisation. Digital leadership at the top management level, includes both IT leaders and business leaders. However, everyone can execute some digital leadership, but it means different things depending on which level you are. Digital leadership is primarily about understanding what it takes to make digitalisation and digital transformation in your organisation. Digital transformation requires leaders to build a different mindset and to understand how we need to collaborate and work differently inside and outside of the organisation.

Currently, one of the primary challenges concerning digital leadership is at the top management level. There is an urgent need for top management to understand what they don´t understand. They need to find ways to build an understanding of digital transformation, what it could be for their organisation, how to get started, and how to develop the competencies needed. They won't be able to create this understanding by themselves. Thus, they need to find people they can rely on, in terms of getting more information about what doable, where to start etc. I think this is difficult because none of us has full insights where digitalisation and the digital transformation will take us. Most, if not all, companies need to open up, to bring in new knowledge to build these new ways of understanding digitalisation and digital transformation.

Is the big thing regarding digitalisation collecting data?

For me, it is not only about data. Data management is one of the big things that change markets, processes and jobs in organisations.

> „Digital leadership is primarily about understanding what it takes to make digitalisation and digital transformation in your organization. Digital transformation requires leaders to build a different mindset, to understand how we need to collaborate and work differently inside and outside of the organization.“

However, digitalisation is also new ways of producing and doing things differently, like collaborating in new ways with users (citizens or customers), competitors, suppliers and the like. It is also about understanding new ways of working and acknowledge that more substantial parts of our living and communication takes place virtually.

We talked about the kindness factor in the workshops. What is your opinion about kindness in relation to digital leadership?

I think kindness is needed to create a good tone – a good atmosphere -which helps keep up the

trust, and that people want to do good for each other.

> „Trust and the understanding, that your leader will back you up is needed if people should allow themselves to think in new ways and to experiment, which is needed to build new competencies and understanding to drive digital transformation in organizations.“

Some studies show that this is challenging in online communication, and we are better at showing kindness and building trust face to face. If you have the belief and attitude that, there is a good reason for what is communicated, rather than getting upset when people approach you, then I believe this helps you to find out what is needed. Meeting people with kindness then you establish trust - this, I believe, creates good energy and a good base for constructive communication.

Trust was, as well as kindness, one of the topics we dealt with in the project. Do you see kindness as a base to establishing trust?

Trust, including the understanding that your lea-

der will back you up, is needed if people should allow themselves to think in novel ways. Also, experiments are necessary to create new competencies and understanding that drive digital transformation in organisations. I am not saying that employees should experiment just as what they like. Of course, it should be directed by their leader, but people should not be afraid of making mistakes. They need to trust that their leaders believe that they are doing their best. It should be possible to discuss what works as well and what does not work well (which many calls failure). Thomas Kastrup from Ørsted painted a nice picture describing this need. His argument is, that to build understandings of how new technologies can help you transform your organisation, you need to try out stuff. When the risks are high it is advantageous to fail fast. This means it is better to pursue eight small experimental projects rather than setting up one big. It makes sense as one of the eight will likely succeed - to an extent which makes all the eight worthwhile in the short run. On a longer term, Thomas Kastrup argues that most experiments are worthy. His experience is that even unsuccessful projects help you build insights and competencies that are valuable in the long run. Experimentation and failure are needed to create the learning process for producing the required understanding in digital transformation.

> „I think this has something to do with innovation and creativity. If you kill the trust you kill the creativity as well, because people becomes afraid of failing."

I think this has something to do with innovation and creativity. If you kill the trust, you kill the creativity as well. Many people are afraid of failing.

My area is organisational innovation, so I am interested in these matters. I think what organisations need is for top management to show the direction and be open for the required changes and innovations. I believe there is a growing understanding that you, as a leader, need to involve people at all levels to create useful solutions.

How is digital leadership developing in Denmark, are there actually any projects or initiatives you know about?

My department manager is involved in a forum on leadership hosted by a union for leaders. She is engaged in making sure, that digital transformation and digitalisation is on the agenda for all leaders no matter the type of organisation. At the political level and in most organisations, there is a growing understanding and responsibility for setting up initiatives to investigate the potential and needs - including building a plethora of digital capabilities in organisations.

What were your best learnings from the workshops?

My take-away from the workshops is that the biggest challenges are the lack of understanding of digitalisation at the top-management level and the boards of directors. Participants asked if we could initiate education for top-management and board members. Business managers that attended argued that, if you have a good understanding of digitalisation, the biggest task is leading upwards. Meaning, making sure your leader gets the needed knowledge to support your initiatives. Leading upwards is seen as a prerequisite to success. On a final note: nobody has the answer, which means that every organisation needs to start understanding what it means in their domain and for their particular company. Even it might be very different what is needed in the individual situation it is possible to learn and

get inspiration from other organisations and situations, you need however to consider to what extent you have the same premises etc.

#3 Designing Tangible Ecosystems

The workshop "Designing Tangible Ecosystems" took place at ITU on January 18, 2019. The workshop gave an understanding of the cooperation between stakeholders in the design, and analysis of software systems. It enabled the participants to encounter challenges in the conception and modeling of these. The participants were introduced and worked with a method, the so-called "Tangible Ecosystem Design," that promotes the cooperation between stakeholders with the help of Playmobil® toys in a workshop context.

Central themes

- Disruptive digital services
- Digital ecosystems
- Tangible Ecosystem Design

Participating companies representing:

- Digital marketing
- Oil
- Digital service providers
- Telecom
- Law

Examples of Digital Ecosystems

Smart Farming, Smart Mobility, Smart Teams, Indutry 4.0, Smart Health, Smart Rural Areas, Smart Energy, Smart X

Key Challenges in Digital Ecosystems

Diversity, Uncertainty, End-to-End Qualities, Value Networks, Complexity, Data Driven Business

---

i4L
Innovation for Leadership

#4 Digital Leadership and Communication

The workshop "Digital Leadership and Communication" took place at ITU on January 25, 2019. The workshop gave insight into selected leadership skills and provided the participants with the foundation needed for digital leadership to succeed and create change. These insights were given through inspiring talks on topics such as digital leadership, communication, innovation and various forms of interaction.

Central themes

• Progress digital leadership skills

• Improve the ability to remote leadership communication

• Locate key features when creating digital transformation

• Work with frameworks enabling further and approved communication

Participating companies representing:

• Retail

• Publishcers

• Consultancy

• Insurance

Participant feedback on understanding the problem

———

I manage a national infrastructure tender. The processes in our organisation need to be more streamlined and effective. We need to be more clear and sharp on decisions at the business level. We invent the processes on tenders over and over again, which is an extreme misuse of resources, costly and just stupid.

———

i4L
Innovation for Leadership

Associate Prof. Dr. Lene Nielsen

What does digital leadership mean to you?

The question of digital leadership, and the reason why I participated in the I4L project is a wish to explore how I can enable leaders to consider other aspects of leadership? The leaders need to consider who the end-users are, and they need to consider how to push innovation. In my work, I encounter managers and leaders who have an overview of the product from a business perspective, but they lack the end-user perspective and, based on that, drive innovation.

Personas play an important role in your job?

Yes, both in my research and when working with companies, I have used the concept of personas. I see how managers are interested in numbers and driving the company forward using numbers only. When they drive innovation, they do it from the perspective of numbers and not people. They lack the feeling of the change they can make for the user group - why the product is important for the users. There sometimes are a knowledge gap between those who work with a specific product and the managers.

You introduced the human centered perspective inside the project and attempted to link the concept of personas to communication in the digital age?

In the first workshop, we tried to create moments where leaders could experience different innovation drivers. In the workshop, we introduced the newest technologies and worked with "What if".

It could be "What if my company has to use AI?" They had to answer the questions: What would we use it for? And, who should use it? This included an introduction to personas and the participants had to define who the users could be.

„I see how managers are interested in numbers and driving the company forward using numbers only. When they drive innovation, they do it from the perspective of numbers and not people. They lack the feeling of the change they can make for the user group - why the product is important for the users."

For the fourth workshop, we had invited Marcus Trapp and Patrick Menning, from Fraunhofer IESE who together with Claudia Nass, has developed the "Tangible Ecosystem Design" Method (TED). The method supports the conception of Digital Ecosystems by using tangible elements. It is a board game where you look at future products from every aspect and maps connections between partners, users and service providers.

What are the challenges for leaders in the digital age?

Most of the participants in the workshops were not CEOs, but leaders. I see it as aligning the demands from top management to the group of people that the leader has to care for. For large companies, the challenge is that you are responsible for people in many countries. When there is no co-location, how can you create a feeling of being a unit? It is about finding new ways to communicate.

Do you have any best learnings from the workshop?

My key learning is: the participants had high interest in the subject and got very little help from their companies in the difficulties of being a digital leader.

„For the large companies, where you are responsible for people in many countries. When there is no co-location, how can you create a feeling of being a unit? It is about finding new ways to communicate."

It is not something they had learned anywhere, and there are no courses at universities. So it is something they had to struggle to figure out on their own.

I4L conference

The conference took place at Scandic Sydhavnen on September 7, 2018. Leaders was invited to participate in the I4L conference, with intriguing talks on topics such as digital leadership, communication, innovation and various forms of interaction.

The day was a great opportunity for insights on the trends and challenges within today's leadership, with enough time to discuss and to network.

The conference was introduced by ITU Pro-Rector Associate Professor Jens Christian Godskesen, Communication director of the Industry Foundation Ole Østrup & I4L project leader Associate Professor Alexander Richter. It was moderated by Aleksandra Kiebdoj.

Speakers

- Camilla Krogsgaard "Leading change in the techstorm"

- Associate Prof. Dr. Hanne Nicolajsen & Raluca Stana "I4L and its results"

- Raul Cordero "The human side of digital collaboration"

- Sandra Jensen "Empowering global employees – How to grow your business with social collaboration"

- Marco Maier "How emotions AI drives innovation – a new era of how humans live together with machines"

- Jennifer Dooley "Planning, communicating, & measuring digital campaigns"

- Associate Prof. Dr. Oliver Müller "Data-driven leadership – The big fight between intuition and facts"

Quotes from the speakers

„The digital leader must remain human and adapt to his digital environment."

„The world has changed, you as a leader should embrace these changes rather than fighting Back. Use Technology to help."

„Times of online presence are no longer the same. Consider work life balance, family, cultures and religions."

Associate Prof. Dr. Oliver Krancher

What does digital leadership mean to you?

Organizations are making substantial efforts to digitize their businesses processes, that is, to automate or support their daily work with IT. A critical mission for digital leadership is to make sure that these digitization initiatives are successful. They should yield new products or services enabled by IT or make business processes more efficient, ideally in short time and without wasting resources. Given the complexity of most digitization initiatives, it is not easy to meet these goals. In my research, look at the role of leadership in software development and implementation projects, asking what managers can do to make them successful.

You speak as a digital native who is very experienced in digitalization. There might be leaders who, for the first time, get to know, what digitalization is.

I got my first computer at the age of 6 and started programming at the age of 12. So it's probably correct to say that I am a digital native. Does such a background make me a better digital leader? I'd say, the answer is yes and no. On the one hand, there is evidence showing that IT projects are more successful when business representatives or project managers have solid technical knowledge.
On the other hand, IT projects are not only about technology and not only about individuals. IT projects are team efforts where different people from business and IT integrate their knowledge to develop new software and change the way people work. A good leader is a person that has

the skills to facilitate the social processes so all these exciting things can happen.

For you, as an expert, what are the challenges of digital transformation?

A key challenge in almost any digital initiative is complexity. At the beginning, business representatives often do not know what they aim for. They have rough goals, but they do not see how the specific solution should look like in the end. It is challenging for the human mind to anticipate how a new piece of IT should support a business process or a new product, something that does not yet exist in this form.

> „Organizations are making strong efforts to digitize their businesses processes, that is, to automate or support their daily work with IT. One important mission for digital leadership is make sure that these digitization initiatives are successful."

When goals are fuzzy, it is also difficult for engineers to identify effective technological solutions that help address these goals. Given the uncertainty at the start of most IT projects, it is useful to think of IT projects as learning endeavours where people gradually gain clarity about requirements and about effective solutions. The agile movement has made many realize this complexity. Now, projects often rely on iterati-

ons to get closer to a solution and on teams that work closely and interactively together to arrive at these solutions.
If you buy the perspective of IT projects as learning endeavors, a key question is: how can managers in IT speed up the learning process - a process that is below the iceberg of IT projects or digital transformation projects?

Do you have any advice, where to start learning about digital transformation?

One of the key issues is to start small, such as by building prototypes and then leveraging feedback. Many people are now talking of minimum viable products. I think this is a beneficial concept. The basic idea is to avoid planning too far ahead or spending too much effort upon analyzing particular technologies and their technicalities. The idea is, instead, to start with a minimum solution as early as possible and then to see how the solution could be useful for a particular business process or for a specific product or service. A minimum viable product helps start the learning process early and allow leveraging feedback throughout the project. If people in a project continuously develop and refine prototypes, share them, use them, see how useful they are, and plan the next steps based on these results, they will gradually gain greater clarity about what they actually need and how that solution can be built. And they can take the important decisions after, rather than before, most of the

learning has occurred.

Another advice is to have technology in place that allows IT project teams to be as quick and lean in this learning process as possible. For instance, projects should consider investing in continuous integration and continuous delivery (CI/CD) solutions. CI/CD solutions are technology that allows engineers to quickly put together their code changes with other engineers' code changes, and to show the new software to users immediately. In our survey, we saw that CI/CD helps promote trust among teams and speeds up learning processes. Thus, leading to a higher likelihood of on-time delivery, including software that is perceived to be more useful by users.

The use of cloud-based software development platforms ("Platform-as-a-Service") can have a similar effect because this technology makes it very easy for developers to integrate their work and show it to end-users. Whenever there is much to be learned, then whatever helps accelerate feedback processes can be useful.

Another advice is to rely on joint decision-making by business stakeholders and IT specialists as early and as often as possible. Our survey results show that joint decision-making makes IT projects more successful, probably by creating opportunities for knowledge integration among different stakeholders throughout a project.

You see digital transformations predominantly as a transformation from the waterfall method to the agile thinking?

I believe that the transformation to agile thinking can be useful for many organizations under many circumstances, in particular, when reality is complex and when teamwork is possible. But organizations do not need to engage in years-long agile transformation efforts to benefit from the

strategies mentioned before. What is interesting about our survey is that we collected most of the data in public sector projects in Switzerland. The public sector is not known for being the spearhead of the agile movement. Most of the organizations in that study traditionally relied very much on plan-based or waterfall approaches. But the survey results show that even within these approaches, IT project teams have opportunities to leverage feedback processes. For instance, even plan-based projects can set up technology for CI/CD, even though the feedback may then be limited to later phases of the project. Joint decision-making is also something that organizations can leverage even if they are doing mostly plan-based projects. It is then necessary to have stakeholders both from business and IT involved in the phases.

In the i4l project, we talk a lot about communication and how communication is transformed in the digital age. For example, we talk about the kindness factor and how to establish trust. Do you have anything to say about communicating in the digital age?

One thing that we looked at in this project is what managers can do to create the trust that is needed to enable effective communication. The strategies that I mentioned before – early prototypes, continuous feedback practices, team approaches – all help create trust within IT project teams. They can generate transparency about: where a project is right now, where the project is heading at, and where the problems lie. This transparency helps to build trust and thereby enables effective communication.

While these modern practices are useful, our survey also shows that some of the recipes from traditional project management can still help create trust and thereby facilitate effective communication. Detailed contracts can help create

trust because they allow people to base their communication on things that have been agreed upon. Although detailed contracts and trust might seem like a contradiction, there is now a lot of empirical support showing that these two are complementary most of the time. Another effective traditional strategy is outcome control.

„IT projects are team efforts where different people from business and IT bring in and integrate their knowledge to develop a new software and to change the way how people work. A good leader is a person that has the skills to facilitate the social processes through all these wonderful things can happen."

Outcome control means that project managers have a clear picture of the outcomes that the project shall ultimately achieve and that they frequently measure progress against these objectives and talk about the development. This helps create trust. It is also important how project managers exercise this control. If managers are aware that they manage a project to coordinate rather than to put pressure or to safeguard against opportunistic behaviour, it results in more trustful relationships.

Do you have any best learnings from the last workshop?

The last workshop was about trust. We talked about trust in general, trust in distributed work, and trust in software development teams. I guess the bottom line is that trust is about people. It is about what you do in your project, it is about symbolic action. If a leader wants to create a culture where working from home is appreciated and wants to enable that, then the leader would need to communicate it, to reinforce the norm that this is acceptable and this is normal.

„Our survey results show that joint decision making makes IT projects more successful, probably by creating opportunities for knowledge integration among different stakeholders throughout a project.“

In a similar vein, if a software project manager is aware and shows that his mission is to coordinate rather than to safeguard, this promotes trust. Leaders need to be good role models. This requires, of course, that leaders are aware of what creates a trustful work environment. I believe that the workshop provided valuable insights in these areas to all participants.

i4L

Innovation for Leadership

Insights

Digital leadership

Information Technology (IT) enables challenges and opportunities for how enterprises organize themselves and how work unfolds in digital settings. The changes in technology, work, organizations, and humans' mindset, call for new ways to discuss leadership. In these new

digital settings, traditional leadership no longer holds. Instead, new forms of digital leadership are needed. In this paper we review the IS research perspective on digital leadership. We conduct a systematic literature review combined with a hermeneutical approach. We compare the findings from our literature review with a theoretical lens inspired by e-leadership. We find that IS research has an exclusive scope on strategic implications, leaving out topics such as followership and emotions. On the other hand, IS research contributes with exactly these issues of strategic leadership and business transformation to the digital leadership discussion. We contribute to IS research by defining digital leadership, proposing a theoretical lens of three levels of analysis of digital leadership, as well as paths for future research.

Stana, R., Fischer, L. H., & Nicolajsen, H. W. (2018). Review for future research in digital leadership.Århus, Denmark: Information Systems Research Conference in Scandinavia (IRIS41) [6].

Micro politics and emotions in digital leadership and communication

Over the past decades, digital tools have been increasingly employed in organizations as a means of communication. Leaders and followers alike have the option to interact with each other using emails, instant messaging, social networks, or mobile phones, and often, as in the case of remote workers, they don't have the option to interact face-to-face.

With the pervasiveness of digital tools, researchers point out that there is a need for a better understanding of the mechanisms behind digital interactions, such as transmission or perception of emotions. Emotions in leadership are important, although the understanding of these in the context of digital leadership and communication is limited.

With this study, we aim to contribute to a better understanding of interactions in the context of digital leadership, from a sociology of emotions perspective. Two case studies are being analyzed through the theoretical lenses of micropolitics of emotions.

Amongst our findings, we find that remote work makes it more difficult to elicit obligation from subordinates, while access to communication tools might make leaders feel obligated to stay in touch constantly. Exploring digital leadership and communication through the lenses of micropolitics of emotions allows us to emphasize aspects of digital leadership that haven't been previously explored.

Stana, R. (2018). Micro politics and emotions in digital leadership and communication. Edinburgh, United Kingdom: The 8th Midterm Conference of the ESA Sociology of Emotions Research Network (RN11) [7].

Digital Leadership practices: A social intelligence perspective

The digital transformation of the workplace impacts all involved individuals, including leaders, who have to balance institutionally implemented traditional organizational structures and new ways of working, enabled by digital platforms and (often) needed by their employees. Studies show that many

leaders are still struggling to find their new individual leadership role and interaction style in the openness of the digital work environment. With this study, we want to contribute to a better understanding of actual digital leadership practices, i.e. how the digitization of the workplace changes leadership styles and approaches. Based on the theoretical lens of social intelligence, we

identify five interwoven categories of digital leadership practices through a rigorous literature review and empirically refine them through a focus group as well as an illustrative case study: communicating, adapting, listening, understanding, and empathizing. Framing digital leadership through the lens of social intelligence allows us to emphasize the human perspective of this reconfiguration, which goes beyond 'rewiring' the work environment and acknowledges the fact that digital leaders need to learn socially intelligent behaviors.

Stana, R., Richter, A., Trier, M., Nicolajsen, H.,W., (2017) (forthcoming) Digital Leadership practices: A social intelligence perspective [3].

i4L
Innovation for Leadership

People behind the project

Alex led the I4L project. From March 2016 until January 2019 he was an Associate Professor for „Workplace Studies" at the IT University of Copenhagen. Since February 2019 he is a Full Professor at Victoria University of Wellington, New Zealand. Over the last 10 years, Alex was involved with more than 30 projects with leading companies and research institutes aiming to contribute to the design of digital workplaces. For example, he led the requirements analysis in the major European project "Worker-Centric Workplaces for Smart Factories" from 2014 to 2018 and facilitated industrial change projects for companies like Airbus, Allianz, Bayer, BMW and Bosch.

Hanne is an Associate Professor at the IT University of Copenhagen. Hanne completed her masters at CBS within business administration. Her interest on how IT supports organizational processes, particularly collaborative processes led her to do research in knowledge management and organizational learning. With a PhD from DTU (Technical University of Denmark) on malleable systems, Hanne's focus has been on the socio-technical. She states: "My interest is in technology, and how it affects practices in companies. I am also interested in some of the existing design aspects affecting how those technologies will be used." With over 17 years of experience working with Rambøll and carrying out projects in Novo Nordisk, Roskilde University Library and currently Viborg Municipal, Hanne's experience traverses organizations in different sectors.

Lene is an Associate Professor at the IT University of Copenhagen and Head of the professional Masters in Interaction Design. Personas, is one of Lene's core areas. An area she's been working on for over 20 years, being one of the first researchers to publish articles about Personas. With over 5-6 years of experience working in consulting before being hired at ITU, Lene Nielsen offers significant and valuable knowledge to industry. Equipping students with the latest knowledge on UX and agile development, Lene works with industry to help them in the process of knowing who their users and clients are, and to get this knowledge into the development phase of their research and design.

People behind the project

Oliver was an Associate Professor at the IT University of Copenhagen. He equips students with the latest skills in data analytics. With a master's degree in Information Systems and a PhD from a business school, he describes himself as the 'quantitative guy'. Industry experience as a management consultant, dealing with practical matters impeding efficient supply chain management, encouraged him to carry out research in this area. Oliver's research on supporting data-driven decision-making now traverses numerous types of industries and organizations. Recently, he started working on the problem of extracting insights from unstructured data. He states: "Actually 80% of all data is unstructured data and its potential is largely ignored by today's organizations." Oliver is design-oriented and aims towards building solutions.

Oliver Krancher is an Associate Professor at ITU. His research focusses on learning in the development, use, and management of information systems. Oliver has published in outlets such as the Journal of Management Information Systems, the Journal of the Association for Information Systems, and the International Conference for Information Systems. He received the McKinsey Business Technology Award for his dissertation on knowledge transfer in offshore outsourcing.

Raluca is a Masters Graduate from the IT University of Copenhagen, with a degree in Digital Innovation & Management. Creating value for organizations from Big Data has been one of Raluca's core focus areas during her studies. A strong track record working with business transformation, has equipped her to take on a variety of roles such as training and communicating strategic changes to employees. First-hand encounters with challenges leaders face in the process of introducing new technologies has pushed Raluca towards evading 'missed opportunities'. Questions along the line of how leadership behavior is mediated by technology and how employees interact with a new system particularly occupy Raluca.

Pia holds a masters degree in Economics from University of Copenhagen. She spent one year abroad studying at York University in Toronto. After graduating, she worked as a civil servant for the Ministry of Environment and Food. She has also worked at the Danish Embassy in Japan. Furthermore, Pia has over 5 years of experience at the British Retail Consortium, representing retailers in matters ranging from introduction of chip cards, the euro and London Spatial Development. Prior to entering the IT University of Copenhagen (ITU), she worked 10 years for the Ministry of Agriculture, Food & Fisheries. Pia joined the Finance Department at ITU in 2012, and has since the summer of 2015 been a part of the Research Support unit. The provision of administrative support in various research projects, predominantly EU projects, is at the core of Pia's work.

References/ Publications

References

[1]**John P. Kotter (2012)** Leading change. Boston.

[2]**Richter und Wagner (2014)** Leadership 2.0: Engaging and Supporting Leaders in the Transition Towards a Networked Organization. 2014 47th Hawaii International Conference on System Sciences (HICSS).

[3]**Raluca Alexandra Stana, Alexander Richter, Matthias Trier, Hanne Westh Nicolajsen (to be published)** Digital leadership practices: A social intelligence perspective.

[4]**Alexander Richter, Corinna Hetmank, Julia Klier, Mathias Klier, Maria Müller (2012)** Enterprise Social Networks from a Manager's Perspective. 2016 49th Hawaii International Conference on System Sciences (HICSS).

[5]**Sven Dittes, Shahper Richter, Alexander Richter, Stefan Smolnik (2019)** Toward the workplace of the future: How organizations can facilitate digital work. Business Horizons.

[6]**Raluca Alexandra Stana, Louise Harder Fischer, Hanne Westh Nicolajsen (2018)** Review for future research in digital leadership. Århus, Denmark: 41st Information Systems Research Conference in Scandinavia (IRIS41).

[7]**Raluca Alexandra Stana (2018)** Micro politics and emotions in two case studies of digital leadership. The 8th Midterm Conference of the ESA Sociology of Emotions Research Network (RN11)

Publications

The role of UX professionals in agile development: a case study from industry
Bruun, A., Larusdottir, M., Nielsen, L., Nielsen, P. A. & Persson, J. S., 1 Oct 2018, Proceedings of the 10th Nordic Conference on Human-Computer Interaction: NordiCHI '18. Association for Computing Machinery, p. 352-363

UX in Agile before and during development
MK Larusdottir, L Nielsen, A Bruun, LB Larsen, PA Nielsen, JS Persson Proceedings of the 10th Nordic Conference on Human-Computer Interaction, 2018, 984-987

Nicolajsen, H. W., Mathiassen, L., & Scupola, A. (2019). IT-enabled idea competitions for organizational innovation: An inquiry into breakdowns in adaptation. Creativity and Innovation Management.

Tjørnehøj, G., & Nicolajsen, H. W. (2018, January). Five Principles for Digital Service Innovation in Social Care. InProceedings of the 51st Hawaii International Conference on System Sciences.

Krancher, O., Dibbern, J., & Meyer, P. (2018). How Social Media-Enabled Communication Awareness Enhances Project Team Performance. Journal of the Association for Information Systems, 19(9), 813-856.

Krancher, O., Luther, P., & Jost, M. (2018). Key affordances of platform-as-a-service: Self-organization and continuous feedback. Journal of Management Information Systems, 35(3), 776-812.

Krancher, O., Kotlarsky, J., Oshri, I., & Dibbern, J. (2018). Bilateral Versus Collective Governance: How Clients Promote Relational Norms in Multisourcing. In The 12th Global Sourcing Workshop.

Krancher, O., & Stürmer, M. (2018). Explaining Multisourcing Decisions in Application Outsourcing. In ECIS (p. 122).

Richter, S., Waizenegger, L., Steinhueser, M., & Richter, A. (2019). Knowledge Management in the Dark: The Role of Shadow IT in Practices in Manufacturing. International Journal of Knowledge Management (IJKM), 15(2), 1-19.

Richter, A., Heinrich, P., Stocker, A., & Schwabe, G. (2018). Digital work design. Business & Information Systems Engineering, 60(3), 259-264.

Ciriello, R. F., Richter, A., & Schwabe, G. (2018). Digital innovation. Business & Information Systems Engineering, 60(6), 563-569

i4L
Innovation for Leadership

Impressum