



IT University
of Copenhagen

Democratic Technologies - DemTech

DATE: September 2014

“The IT University is very proud to host the DemTech project that is critical to maintaining trust in the election process which is a cornerstone of democracy.”

Dr. Jørgen Staunstrup
Provost, IT University of Copenhagen

FAST FACTS

Country or Region:

DENMARK

University:

IT UNIVERSITY COPENHAGEN

Business partners:

- Københavns Kommune (Copenhagen Municipality)
- Kommunernes Landsforening (KL) (Organization of all Danish municipalities)

Area of UBC:

- RESEARCH & DEVELOPMENT

Project start date: June 2011

Project end date: July 2017

Keywords:

- Public private collaboration
- Inter disciplinarily
- Theoretical computer science
- Social science
- Software Engineering

PROJECT SUMMARY

Over the last four decades, information technology has begun to transform the electoral process---perhaps the most foundational process upon which democratic societies are built. Computers are gradually replacing manual parts of the democratic process by, for example, tallying results in Excel spreadsheets, predicting exit polls, or by computing seat assignments to parties in parliament (since 1962 in Denmark). With every such transformation, the overall process becomes more efficient, informative, and economical. However, there is a risk of the process becoming less trustworthy. The deployed technology tends to be complex and therefore prone to programming error and vulnerable to malicious attacks. These problems have an adverse effect on the very foundations of democracy. Voters are less likely to trust the electoral process, which inevitably leads to lower voter participation and cynicism.

CASE STUDY IN DETAILS

Project Background and Needs

The hypothesis of this research project is the following: Is it possible to modernize the electoral process while balancing the trust of the people on the trustworthiness of the deployed technology?

Project Solution from University's Side

The mission of the IT University is to contribute to making Denmark exceptionally good at creating value with IT. This also covers research and therefore the research strategy of the IT University emphasizes close dialog with external partners such as private industry, public sector, NGO's and the general public. Since IT is relevant in almost any sector, partners can be companies in almost any industry, cultural institutions, hospitals and other health organizations. They all have interesting IT challenges that can form the basis for interesting IT research and projects.

Project Solution from Partner's Side

The municipalities appreciate the opportunity to develop the election system in a framework that is not only focused on acquiring a specific IT system and implementation. Changing the election system for public elections challenges democracy itself. Therefore,

Key Objectives:

- To answer the hypothesis established for this research: is it possible to modernize the electoral process while balancing the trust of the people on the trustworthiness of the deployed technology?

Lessons learned:

- The importance of involving researchers, the general public and government in development of critical technology.

University profile:

The IT University of Copenhagen (ITU) was established in 1999 and is the youngest university in Denmark.

Approximately 2,000 students are enrolled in the university. Since the establishment students with more than 100 different bachelor degrees have been admitted.

ITU's researchers work within twelve internationally recognized research groups. Most researchers participate in collaborative projects with private companies, public institutions and foreign researchers.

ITU is currently working towards becoming a globally interactive university, with faculty, students and staff working in international teams.

ITU has a unique IT focus and expertise and constantly directs its efforts to ensure the quality and relevance of its research and educational programmes.

ITU strives to deliver top quality research and education within a wide range of information technology subjects; from design and game development to business and science.

the hypotheses of the project (Is it possible to modernize the electoral process while balancing the trust of the people on the trustworthiness of the deployed technology?) stresses the importance of a balance between hard core issues related to technology and softer issues like trust.

Achievements and Impact

The project is still ongoing, but it has had strong influence on the public debate about electronic elections in Denmark and the regulatory framework behind the election system.

Private companies (selling the election technology) follow the project to try to integrate the findings from the projects in the services they provide.

Quantifiable Outputs for University

100% of the target audience reached.

Quantifiable Outputs for Partner (s)

3 joined research projects completed.

CHECKLIST OF PREREQUISITES TO SUCCESS

Formal aspects

- Formal Memorandum of Understanding or Letter of Intent (or similar long-term co-operation document) is signed between University and Partner(s).
- Formal practical level Co-operation Agreement is signed between University and Partner(s) which defines particular roles, outputs, reporting mechanisms and other relevant aspects.
- Clear roles and responsibilities are defined for University.
- Clear roles and responsibilities are defined for Partner(s).
- Project is related to at least one strategic priority of the University.

Financial and/or Infrastructure aspects

- University invests financial resources in the project.
- Co-operation Partner invests financial resources in the project.
- University invests infrastructure and/or material type (in kind) resources in the project.
- Co-operation Partner invests infrastructure and/or material type (in kind) resources in the project.

Human capital aspects

- University is devoting its human capital, know-how, competence to the mutual cooperation, specifically, academic staff and administrative staff.

- Co-operation Partner is devoting its human capital, know-how, competence to the mutual cooperation.

Marketing and communication aspects

- Project and/or project results are communicated within mass media channels.
- Project and/or project results are communicated within social media channels.
- Project and/or project results are presented in trade-shows, conferences, seminars, other marketing events.
- Project and/or project results are communicated within academic and/or scientific communication channels (research papers, scientific conferences and activities).

For More Information

For more information about the case study contact Dr. Jørgen Staunstrup on jst@itu.dk

For more information about the project "FROM BRIDGING TO SUCCEEDING. University and Business Co-operation Through Success Stories." and for more case studies visit www.university-business.net

For more information about the Nordplus Horizontal programme visit www.nordplusonline.org

This case study is for informational purposes only. "KNOWLEDGE TRIANGLE NETWORK" and "NORDPLUS Horizontal" MAKE NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS SUMMARY.