Design Research Webzine

MIND DESIGN

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World of Warcraft and other online games are inspired by the game DIKUmud, which Danish computer science students released as free software in 1990-91. Here, orcs and other creatures do combat in a world that incorporates elements from Nordic mythology.
Source: www.worldofwarcraft.com

A Scandinavian Approach to Interaction Design

Just as there is a concept of 'Danish design' in relation to physical objects, there is the 'Scandinavian School' of systems development. In both cases, the particular Scandinavian quality involves an emphasis on simplicity and functionality as a basis for sharing and sustainability.

By Charlie Breindahl

In the social sciences, scholars talk about the 'Scandinavian model' of welfare societies, which is characterised by a high degree of equality and room for everyone. It is no accident that Scandinavian programmers in particular have helped make the information society more accessible, partly through the Scandinavian School of systems development, which springs from the Scandinavian tradition for workplace democracy. The Scandinavian School showed the rest of the world that it is more efficient to design systems in dialogue with the users rather than introducing systems over their heads.a Brandt.

Award-Winning Programming Language

In 2005, the Danish computer scientist Peter Naur received the Turing Award, which is best described as the Nobel Prize of computer science. Peter Naur received the award for his efforts to develop better programming languages for computers. In the early 1960es he helped create the first high-level language, ALGOL (ALGOrithmic Language). High-level language made it possible to programme using words rather than binary figures, and ALGOL provided the inspiration for many of the high-level languages that were developed in subsequent decades. Peter Naur was also one of the key developers behind the meta-language Backus-Naur Form or simply BNF, which is used to describe programming languages.

Peter Naur received the Turing Award in 2005 for his efforts to develop better computer programming languages. Here he is giving a speech at the opening of the annual NordDATA conference in 1970.
Source: www.datamuseum.dk

The Norwegians Ole-Johan Dahl and Kristen Nygaard received the Turing Award in 2001 for constructing SIMULA, the first object-oriented programming language. SIMULA was created in 1962-1965 as an expansion to ALGOL, thus building directly on Peter Naur's achievements. An object-oriented programming language is a language that makes it possible to work with program modules rather than individual lines of code.

In 1979, the Danish computer scientist Bjarne Stroustrup wrote the language that is currently the most widespread object-oriented programming language, C++. Today, Bjarne Stroustrup is a professor of computer science at Texas A&M University.

The Scandinavian School

SIMULA was a language well-suited for operations analysis, i.e. for simulating and analysing complex systems. In many cases it was used for the elimination or automation of work that was previously carried out by human operators. Kristen Nygaard was justifiably proud of his achievements as a computer scientist, but at the same time he was concerned about the workers whose workplaces were changing due to technological developments. Thus, in 1969 he launched an initiative together with the Norwegian trade unions aimed at enabling the general worker in the iron industry to understand and influence the development of computer systems.

Inspired by Kristen Nygaard's pioneering efforts in Norway, the Danish and Swedish trade unions launched similar projects. The DEMOS project in Sweden in the second half of the 1970's attempted to give the employees a say in developments at a locomotive workshop, a newspaper editorial office, a machine shop and a department store.

In the early 1980's, Pelle Ehn from Sweden, who was on the staff of DEMOS, and Danish Morten Kyng were involved in the UTOPIA project, which aimed to design a system for newspaper production that did not replace printers with machines but instead turned the system into the printers' tool. The basic assumption was that man and machine combined would be both better and more efficient than a system that rendered man redundant.

The efforts that Kristen Nygaard sparked in 1969, and which spread to Sweden and Denmark, became known in the rest of the world as the Scandinavian School in Systems Development, which is closely related to Participatory Design. The Scandinavian School was characterised by a high degree of user-involvement and continuing training. As a result, new systems had fewer flaws and were easier to implement.

Free Software

In 1991, the Finnish software engineer Linus Torvalds encouraged all the programmers of the world to contribute to a new operating system that would be covered, from the bottom up, by Copyleft, a legally binding agreement ensuring that the use of the software is always free, and that no one can charge for someone else's work at developing the software.

He was inspired by the American computer scientist Richard Stallman, who in 1985 founded Free Software Foundation, FSF, whose first project was to create a free version of the operating system Unix, which had been the most popular operating system among computer scientists since 1970. The project was called GNU, which in a pretty nerdy sense of humour stands for "Gnu's Not Unix". The purpose of GNU was to ensure that anyone could use a computer without having to rely on commercially owned software.

In honour of its founder, the new operating system that resulted from Linus Torvald's initiative was called Linux. Torvalds personally provided the key contribution, the core of Linux. The core is the central element of an operating system, which handles the connection between the computer hardware and the programs that run on it. In a joint effort, Linus Torvalds and thousands of programmers all over the world managed to create the first operating system that did not contain one single bit of commercial software.

Not only was Linux freely available to anyone – in some aspects it was even superior to commercial software. When the Internet began to be embraced by a wider audience, the most common web server was Apache. Apache was free software and ran on Linux and other types of free software. Part of the software in Apache was the programming language PHP, which was written by another Scandinavian programmer, Rasmus Lerdorf, who is of mixed Danish-Greenland descent, now a software architect for the Internet firm Yahoo.

The Struggle for the Internet

As web programmers throughout the world construct new, exciting web-based possibilities in coming years, their work will be based partly on elements developed by another Danish programmer: Anders Hejlsberg, who previously developed the programming language TurboPascal, created the web programming languages J++ and C# ('C sharp') for Microsoft as part of Microsoft's strategy of gaining market shares on web technologies.

Sun Microsystems, which has sold many computers to web companies, and whose director is one of Microsoft's most ardent critics, joined the Internet wave at an early stage – helped along by Danish usability consultant Jakob Nielsen's work with user-friendliness. Jakob Nielsen was a Distinguished Engineer at Sun from 1994 to 1998 and a usability pioneer. His experiences at Sun became the basis for his career as an independent web consultant and 'web guru', striving to make all the web sites of the world user-friendly. Jakob Nielsen's career reached a high point in 2001 when he talked about the web to the world leaders at the annual summit in Davos, Switzerland.

The Spiritual Mother of Online Games

When the ten million online gamers in World of Warcraft enter a world that looks like a mix of Dungeons and Dragons and Nordic mythology, there is a Scandinavian element to the explanation. World of Warcraft was inspired by the online game DIKUmud, which was released as free software in 1990-91. A mud is an early form of online game, and DIKUstands for Datalogisk Institut, Københavns Universitet (Department of Computer Science at University of Copenhagen), where the developers of the game were students at the time. Thus, even an orc in World of Warcraft has a little Scandinavian blood in his or her veins.

SIMULA altid foran (SIMULA always ahead), read the screen in 1982. With the programming language SIMULA, Ole-Johan Dahl (left) and Kristen Nygaard laid the foundations for the 'Scandinavian School' of systems development. Photo: Rune Myhre, Dagbladet

DANISH CENTRE FOR DESIGN RESEARCH
The Danish Centre for Design Research DCDR comprises the design researchers at the Aarhus School of Architecture, The Danish Design School, Designskolen Kolding and the Royal Danish Academy of Fine Arts, School of Architecture. The DCDR aims to contribute to establishing a strong design research environment in Denmark and to strengthen the exchange of knowledge about design research and facilitate the identification of potential areas of collaboration for researchers, schools and enterprises, on a national as well as an international level.

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Mind Design, DCDR Webzine is published once a month and features articles and interviews about current Danish and international design research. Mind Design aims to present design research and research findings from researcher to researcher as well as from researchers to design practitioners in general. The webzine is free of charge. Please see www.dcdr.dk/uk/minddesign

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