IT Museums and Related Projects in the Nordic Countries

Summary of a Panel Discussion

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Digital heritage is cultural heritage!
— Outi Penninkangas

Abstract: Following some museum related papers presented at the conference, the panel discussed the challenges of IT museum projects in different Nordic countries. The panel provided examples on individual museum projects as well as university based models and IT related exhibitions in regional museum institution. The panel focused on questions on preserving and presenting hardware and software as well as financial issues of museum projects, and the paper introduces shortly the discussion between the panelists and the audience.

Keywords: IT museums, Exhibitions, Digital cultural heritage

1. Introduction

Information technology is important part of cultural heritage in the Nordic countries - like in many other regions and states in the world. The consequential position is not only result of success of some internationally important and active companies, such as Nokia and Ericsson. Nowadays, when information technologies seem to be necessities in our everyday life, we need historical understanding of it. How the increase of importance and popularization of the information technologies have taken place? What are the historical processes producing that IT-oriented situation? Who have been the key actors in this change? How do we use history as an increasingly important element in constructing our relationship with emergent information technological innovations? If we think about contemporary culture of digital technology and its

future, we see processes of using and recycling past as an emerging trend in the future [9].

Museums have an essential role in dealing with questions of information technology and its history. However, there are certain challenges, when one introduces information technology to museums – not only as a pedagogical tool for presenting other issues – but an object and topic of technological cultural heritage. Who should take the responsibility to preserve and present history of computing and information technology, since they are quite new phenomena and not largely included in traditional museum exhibitions? Moreover, how should we do that?

For answering those questions, we organized a panel for the HiNC2 conference. The panel was a good addition to some conference papers, wherein they discussed the questions of museum work (see for example [10]). The panel focused on two major issues: 1) Questions of collecting, preserving, and exhibiting: relation between hardware, software and other materials, and 2) questions of funding: how to finance projects, how to institutionalize them and how to share knowledge about the best and the worst practices dealing with financial and other issues.

2. Panelists and Their Projects

The panel discussion started, after the short introduction by the chair, **Jaakko Suominen**, with talks of panelists, where they introduced themselves and their museum projects. We selected the panelists, not only for gaining some sort of Nordic variety, but also for getting experiences on different kinds of museum projects.

Kimmo Antila works as a curator of museum centre Vapriikki, in Tampere, Finland. According to Kimmo Antila, the centre's concept is unique, because it presents quite widely different issues from history and archeology of Pirkanmaa and Tampere regions to industrial specialties, technology, and modern art and design. With its 360,000 items, the centre is one of the largest museums in Finland and probably best known from its major exhibitions of foreign cultures (such as China). In his preliminary talk, Antila wanted to underline questions of modern and contemporary technology in museum collections and exhibitions. When Antila started his work at the centre in 2004, he was a little bit amazed when he discovered that most of the installations about technological history focused on the first industrial revolution (before modern information technologies for example) and its machinery. He argued that presenting more modern or contemporary technology is more or less problematic for most of the museums. The other key argument Antila presented was that computing relates to so many different branches that people should noticed it, for example, when one is making an exhibition about textile industry. The use of computers and the new information technology is part of one period of (industrial) history in general.

In addition to Vapriikki, Antila mentioned the Helsinki Museum of Technology[1], which is a major player of the field as well. Helsinki Museum of Technology has also some machinery related to Finnish computing history, such as the early Finnish ESKO computer from the 1950s (on ESKO, see e.g. [6]) and Siemens 2002 mainframe installation used by the Finnish Cable Works in the early 1960s. The museum also has contracted computing museum collection of Jyväskylä (see [10]). Whereas Jyväskylä has focused on academic computing and mainframe installations, Helsinki museum of technology tries to concentrate on more modern information technology and smaller computers as well.

For conclusion of his introduction, Antila mentioned that Finnish research on history of computing has been very active lately. The research has helped making links and creating cooperation with museums. The co-work will be important and strengthened in the future.

After Mr. Antila's introductory remarks, the panel moved on to the next speaker, Mr. **Peter Blom**. He worked as a curator of IT-ceum, Sweden's Computer Museum, located in Mjärdevi Science Park, Linköping. The museum opened in 2004; its location is in Linköping because many important Swedish IT-related corporations operated in the area, e.g. Saab, Luxor, Facit, and Ericsson. The Linköping Municipality, Linköping University, and Saab finance the museum, and for the seasonal exhibitions, it has had partners ranging from non-profit foundations to the Nintendo Corporation. At the core of the museum is the main exhibition, "50 years of Computing in Sweden", covering the period from the Second World War to today. Like Kimmo Antila, Blom pointed out that the museums of history of technology and science are usually interested in older periods, and therefore the role of the IT-ceum is somewhat different. Blom underlined, for example, that most of the IT-pioneers are still alive so one can get first hand information on the issues of computing, which is not a case with many other technologies.

We can also see the IT-ceum's different role in its mission. Peter Blom noted, that IT is changing society rapidly (or society changes IT rapidly) and the museum hopes that people can make choices about their future by knowing and evaluating the past and the present. Therefore the museum wants to present the latest discoveries and technologies as well. IT-ceum has done that, for example, by making exhibitions on the latest technological discoveries cooperating with the Swedish Defence Research Agency. In addition, co-operation exist with Swedish national science museum and other major players.

IT-ceum is very keen on dialogue with schools in the area; it is trying to create a neutral discussion base for the public about IT-related issues. The museum has lately had exhibitions on visual digital culture and digital games. These areas, which have probably been some times in the computing marginal, have provided opportunities for testing the limits of computing. Today, they form a major part of digital culture.

The next speaker came from Norway. **Ola Nordal** is currently writing a book on the IT-history of the Norwegian University of Science and Technology

[1] http://www.tekniikanmuseo.fi/

(NTNU) in Trondheim. He has also participated in a project dealing with collections of the university's computer items, which they nowadays display in a small scale. Nordal mentioned that there is no such thing as a computer museum currently in Norway, although the Norwegian Museum of Science and Technology in Oslo[2] has some objects of Norwegian IT history in its permanent exhibition. In addition, the Norwegian Telecom Museum[3] has some artifacts and exhibitions on computing. There is no organized collecting of computing material in Norway, and Norwegian University of Science and Technology's 1000 object collection is one of the largest IT-related museum collection in Norway. The collecting started in the 1980s and the 1990s by some enthusiasts of the Department of Computer Science. They wanted to preserve valuable historical IT items, such as two Danish GIER computers that were used by the university in the early 1960s (see [3]; 2005 [8]; [5]).

The museum project has some short-term and long-term goals. Museum project will organize, document and make catalogues about the collection as well as exhibit collections. Long-time goal is to gain a status of national computing museum or built up technical or university museum of Trondheim, where they would install the collection. Now, the project is preparing a number of small exhibitions displaying functional computers, so visitors can experience the tactility, feel, and sound of the equipment - and not just see a "dead" computer on display.

Outi Penninkangas, Curator of Media Museum Rupriikki, Tampere, began her talk by describing daily routines of her museum. Rupriikki started its work at 2001. In the first phase, the local media and communication firms such as the Aamulehti newspaper and Elisa telephony operator cooperated with City of Tampere and University of Tampere to organize it. Officially, they opened the museum to the public in 2003 for promoting history of communication and role of media in society. Different types of communications such as history of newspapers, telephony, radio, television, as well as information technology divide Rupriikki into sections. IT section of the museum was co-produced by the Department of Hypermedia Studies at the University of Tampere, and the section was focused on three different topics were IT-related issues are essential: work, home (daily life) and gaming, which is also one of the research focus areas of the Hypermedia Laboratory. The purpose of the IT section is, for example, to visualize to visitors questions of the Internet, change in computer memory capacity, personal computing, and in gaming cultures. Due to rather limited collections of computer objects of Tampere museums, the local microcomputer club (Pirkanmaan mikrotietokonekerho) donated the IT artifacts. After its opening, Rupriikki discovered the great challenges of exhibiting IT related issues interestingly. Therefore, today, the museum is trying to find new ways of cooperation for improving its exhibitions. Museum needs academic connections but also help provided by the local computer hobbyists. One current project by an enthusiast is to produce a system where the public can come to the museum with

[2] http://www.tekniskmuseum.no/

[3] http://www.telemuseum.no/

their old data in floppy disks. During their visit, they will transfer the data to usable, modern format, stored in CDs or DVDs. The project is still under construction.

In addition to basic IT exhibition, Rupriikki has some special, thematic exhibitions. Curator Outi Penninkangas mentioned two projects in particular. In 2006, Rupriikki organised an exhibition focused on Commodore computers, which were most important home computers in Finland and in many other countries as well, especially during the mid-1980s. The proposition for the exhibition came from a local computer vendor, Triosoft. It was among the earliest firms in Finland starting business with Commodore hardware and software (such as games) in the early 1980s. In the beginning, the museum was a bit skeptical of how to get working computer installations to the exhibition, but the project proved to be a great success. With the help of ten working Commodores loaded with games and other software, museum gained new audience, which has never before visited in Rupriikki – or in some cases – any other museum after visitors' childhood. The visitors were fascinated with the possibility of using machines, playing games, hearing sounds and trying to remember how it was like to program some BASIC code with their own Commodore 64 machines.

Another project Penninkangas mentioned was the 10th anniversary exhibition for the Mindtrek conference. The idea of the exhibition came from the conference organizers, who provided some documented material and multimedia works produced for Mindtrek competition during its ten years history. The works consists of e-learning applications, multimedia art, internet solutions, as well as games. During that project, the staff of Rupriikki realised again big challenges of presenting history of information technology and software. Although the multimedia works can be only ten years old, it could be difficult to find working hardware and right operating systems for the presentation, in order to create authentic surroundings for the experience.

3. Hardware, Software, and Documentation

Lately, interest towards questions of history of software and software cultures has emerged in academia (for the emergence of software issues, see for example [1, 4, and 7]). Therefore, we wanted to touch upon relation between hardware, software and other forms of computing in this panel as well. The panelists were asked several questions by the chair: How to choose what to preserve and what to present? Could you comment on the relation between hardware and software in IT-history and IT-history oriented museums? Is there anything new in these topics to discuss?

Outi Penninkangas opened discussion by mentioning Police Museum of Finland in Tampere, which will open in 2008. The museum will present the whole information system used by police in the earlier days. That sort of presentation of the information system was a good idea in Penninkangas' opinion due to the fact that police work has been changing, like many other types of work, since computers arrived at their workplace. TietoEnator, a Finnish-Swedish firm

which has made the information system, is participating in the museological documenting work of the system.

Peter Blom wanted to emphasize that the question of preserving and conserving does not relate only to software: hardware will not last forever either. Lots of interesting software is stored on tapes, and it is difficult to run them anymore. Moreover, if one manages to transfer the old software to new data systems there is still the open question of how to present it. Therefore, it is a problem of many dimensions, which IT-ceum in Sweden is trying to solve in its exhibitions. Mr. Blom referred to Outi Penninkangas' earlier speech and nodded that it is very nice to get enthusiasts, who can help with these kinds of issues.

Ola Nordal pointed out that software also is a hardware problem - and a literature problem. One needs three things to make the software run; 1) the actual software media (disk, tape, cards, and so on), 2) a machine that can operate the software, and 3) the documentation of the software. Therefore, the philosophy of the Trondheim collection is to try to collect all three, not only the boxes.

Kimmo Antila referred to a new project about Finnish innovations. The project will put a strong emphasis on regional innovation systems and major important innovations in the Tampere region. Antila revealed that most of them are IT-related: mobile phones and different kinds of software. In his opinion innovations systems are, as an exhibition topic, very hard issue to work with. Therefore, museum needs close cooperation with researches who had been involved with the innovations and projects. It is almost impossible for museum curator to analyse the theme or get anything out of manual by him/herself.

Mr. Antila mentioned also his own research and publication project about history the Digital Media Institute in Tampere University of Technology. The institute was a vital actor in the 1980s and the 1990s pushing towards lots of research and development projects with companies, and Antila used oral historical methods in his studies about the institute.

After the panelists' addresses, the audience had an opportunity to comment on issues mentioned. One audience remark was to put emphasize on questions of programmers and ideas behind the old software, which could be demonstrated without actual software itself. Another point was that one can use emulators for running old software, we do not need old functional hardware in every case.

John Impagliazzo asked about Danish and Icelandic projects related to computer museums or to the preservation of computer history; participants from those countries completed the Nordic museum picture by telling briefly about their national projects. In Iceland, there is a special interest group on history in data processing society. The group is for instance encouraging people to write down their memoirs on computing. In addition, the group is planning to conduct interviews with some veterans in companies (in steel industry for example) and computer related institutions.

A Danish colleague told about a huge cellar in Copenhagen, which is full of old equipment, software, manuals, and other material. The project group has already created a virtual museum onto the internet[4] and has received some

[4] See http://datamuseum.dk

funding from local authorities. They hope that opening of the museum will occur in next few years.

4. Financing the Projects

One key factor of the museum project is funding. Panelists were asked to tell about good practices, how to finance museum related projects and how to secure continuation in difficult situation where number of museums is large. Would it be possible to combine local, national, and international funding in private and public level?

Peter Blom started his answer by mentioning that one way is to seek national status of a computer museum, but this kind of process would take five to ten years. Therefore, IT-ceum in Sweden is trying to find alternative ways to get funding. Currently, they have three major partners, who are not eager to finance the project for years. Therefore, the seeking of other solutions is essential. One resolution is to put exhibitions on the road, which is a good possibility because the museum is in Linköping, not in Stockholm with a large population, other tourist attractions, and huge number of potential museum visitors. Touring helps also getting funding from private partners, who are happy if the exhibition gets a wider audience. Moreover, this is one way to obtain the omnipresent national status of a computer museum.

According to Ola Nordal, Trondheim does not have finance strategy yet, but if the collection is well documented and catalogued, it is lot more difficult to squander it and probably easier to get funding for it. Nordal was quite optimistic about getting funding, because history of computing is relatively interesting topic currently compared to many other areas of cultural or technological heritage.

Outi Penninkangas added wisely, that before receiving governmental funding one have to admit that digital heritage is part of our cultural heritage. She stated that museums in Finland are somewhat lazy in applying funding for governmental sources for these sorts of purposes. Ministry of Education in Finland has, for instance money for information society projects for museums, but so far there has not been much interest of executing history of computing related projects.

Kimmo Antila admitted that he is quite doubtful with the idea of getting sponsorship money, although they had managed to gain small sum of private funding for some projects. For constant work and big exhibitions, one has to have public finance for international, national, or regional sources or from some private foundations. For example in Finland, there are several private foundations, which support industrial heritage and history of technology research projects and exhibitions, including history of computing. Antila agrees with Outi Penninkangas in the issue that major governmental bodies do not see yet the importance of history of modern technology.

The audience participated actively in the discussion with the panelists. Oddur Benediktsson from Iceland claimed Nordic or European level cooperation, which could most likely help in getting projects financed. Peter Blom answered and told

a little about financing of Nordic bodies for their projects. He emphasized that it is important so seek funding from a right stock and from right places.

Kimmo Antila started to think about possibility of using culture and knowledge export funding sources. He told about a Korean colleague he met at the International Committee for the History of Technology (ICOHTEC) conference who was interested in Nordic IT history. These factors were combined, particularly in a book by Manuel Castells and Pekka Himanen [2]; the combination would be used in showing international importance of the Nordic social and technological model.

Emmi Tittonen described briefly financial issues of the Jyväskylä museum project in Finland (see also [10]). After struggling some years for getting money for rents the project received some funding from the Ministry of Transportation and Communication for documenting work. When museum collections moved to another location, the Ministry of Education and the City of Jyväskylä, and some other governmental bodies helped in covering the expenses. Still, it is difficult to get money, even for the rents, and the museum activists have to seek different possibilities for funding.

John Impagliazzo asked, if the national IT societies have active role in preserving IT heritage, which they have in USA, for example. He believes that the societies would make good players to lobby for historical research and preserving projects. Per Lundin and other Swedish colleagues briefly mentioned the Swedish research project connected to Swedish IT society. The project has also some sponsors.

A colleague from Denmark, participating in Danish computer museum project asked if the panelists had experiences of some sort of “interface problems” with well-established national science and technological museums. Kimmo Antila answered that he does not believe that there would be such problems in large scale. Antila demanded building of the Nordic network of museums related to history of computing. That kind of network is needed for comparing and sharing experiences in the situation, where we have shared problems and similar goals to aim in different countries. Even though one has to admit, that museums also compete with each other (at least in national level), the co-work is essential.

5. Conclusion

The panel discussion showed that there is a huge need for work related to computing history. The work needs not only historical, technological, and museological efforts, but also public relations and discussion. Hence, we hope the panel motto “Digital heritage is our cultural heritage” to become a common and shared conception. For gaining these objectives, we will need more international cooperation. Probably the next HiNC conference will reveal how we have succeeded in these attempts.

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