

Researching and Preserving the History of Information Technology in Hungary

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Abstract

This article describes the special characteristics of the history of information technology in Hungary, and the major initiatives undertaken to research and preserve the achievements of the key organizations and their accomplishments. The research methodology used and the future plans are also outlined.

Special Characteristics of the History of Information Technology in Hungary

The evolution of IT in Hungary following World War was defined first and foremost by the country's location within the Eastern block – or as it was commonly known – "behind the iron curtain." This impacted the development of the IT industry in two ways. First, as the economy and research were centrally controlled, the prohibition of or support for IT was determined by the political decisions of the Soviet Union. Second, the export restrictions imposed by the West prevented the spread of the new advanced technologies included in the "CoCom list" – as the list of strategically important IT products that were subject to the export embargo as determined by the Coordinating Committee for Multilateral Export Controls was most frequently referred to. It wasn't until 1994, when the embargo was abolished, that the latest IT products and applications were able to be imported.

This hindrance was, in many cases, turned into an advantage. The otherwise unavailable technology had to be redesigned or reconstructed using great creativity and with local talent, resulting in the successful development of a home-grown Hungarian IT industry whose production was not only able to meet local demand but also generated substantial export revenues. For example, two major Hungarian computer producers, VIDEOTON and KFKI, were able to produce many thousands of computers, the majority of which were exported. As many detailed studies have been published about the history of IT in Hungary [1,2,3], we will limit ourselves here to the efforts to conserve the artifacts from this era.

The history of the preservation of IT artifacts in Hungary, and the IT exhibition in Szeged.

In the best of cases, objects from the past are preserved and live on in a country's national museums. In Hungary, the Budapest Museum of Technology, which is part of the Hungarian Museum of Science, Technology and Transportation, provides a home for computers with significant Hungarian ties. For example, the museum houses the first Hungarian electromechanical computer, MESZ 1, and one of the first large-scale computers used in Hungary, the URAL 2. These computers can be viewed in the museum's "Technical Study Store." <http://www.mmkm.hu/index.php/en>



The MESZ-1 and URAL II computers in the Hungarian Museum of Science, Technology and Transport

Due to the rapid cycle of development and obsolescence of computers, the collection of the Museum of Technology was unable to keep pace. This is where the John von Neumann Computer Society, which was established in 1968 to support the fast-developing IT profession, saw a role for itself in the preservation of industry artifacts. Already in the mid 1970's, the John von Neumann Computer Society's first secretary, Győző Kovács, realized that computers that had been purchased at great cost but had been replaced as they became obsolete should be preserved for the next generations to learn from. In order to implement this idea, a three-person "Board of IT History" was formed within the John von Neumann Computer Society. Achieving this goal was far from easy, however. As many early computers had already been relegated to the junkyard, only a few examples from the early years were able to be preserved. The collection efforts were also hindered by the requirement at the time to offer computers that were no longer needed to 20 other companies before they could be donated to museums.

Győző Kovács, and his friend Dániel Muszka, a mathematician in the cybernetics laboratory at the University of Szeged, started to search out and collect computers that were slated for the scrap heap. Later on, their colleague, Mihály Bohus, also joined the crusade. Thanks to their heroic and self-sacrificing efforts, almost 200 tons of computers were acquired and housed in temporary warehouses. Together, they preserved the computers and from time to time organized exhibitions.

A big turn in events occurred when the Municipality of Szeged, with the support of the European Union, built the Szentgyörgyi Albert Agóra cultural center in Szeged, where, thanks to the John von Neumann Computer Society's funding and the personal efforts of the Director, in 2012 a permanent 1300 m² exhibition entitled "The Future's Past" was established. http://ajovomultja.hu/?l=hu_HU. The painstakingly acquired collection exhibits many hundreds of computer configurations and many thousands of western and eastern-block computers from the earlier periods of IT history [4].

To this very day, the John von Neumann Computer Society, which counts 2300 individuals, 100 institutions, and 23 professional associations among its members, aspires

to adhere to its motto to: *"Uphold the values of the past, adapt to the present, and influence the future."* <http://njszt.hu/en>



The Szentgyörgyi Albert Agóra IT history exhibition in Szeged [5]

Personal IT Collections:

In addition to the Budapest Museum of Technology and the Szeged IT Exhibition, many IT-related personal collections are forming in Hungary, most of which are collections of personal computers and computer games [6,7,8,9]. Amongst these, one of the biggest and most widespread collections is that of the author of this article, a professor at the Óbuda University. As a result of more than 40 years of systematic collection, many thousands of artifacts were accumulated, many of significant historical value. The main areas of focus are early calculation devices, key electronic components significant to the history of IT, data storage devices, personal and portable computers, and communication devices.

The collection traces the many steps and stages in the development of IT products, and showcases how many significant inventions build upon a series of prior innovations. In many areas, the aim is for the collection to be exhaustive, for example to contain all of the electronic components used in Hungarian IT products, including electron tubes, transistors, integrated circuits, processors, etc.

Select items from the collection are displayed in both the Obuda University's main hall and the Budapest University of Technology and Economics on a rotating basis. Grouped around a specific theme, the displays give a brief history of the items, the problem they were designed to solve, their significance in the history of IT, and their major applications. The collection is also used to illustrate the lessons taught in the course "Chapters in the Cultural History of Information Technology."



Historical IT components from László Kutor private collection [9]

The Objectives and Accomplishments of the IT History Forum

In 2009, the John von Neumann Computer Society established the IT History Forum, with the following objectives: to organize events that provide an opportunity for those who played definitive roles in the development of the Hungarian IT industry to meet and share their experiences in living and shaping the history of the IT profession; to support research in the history of IT in Hungary; to collect and preserve significant documents and the oral history of this period; and to establish a website dedicated to the work of the Forum. <http://itf.njszt.hu/english-site>.

Events Commemorating the History of IT in Hungary

Approximately once a month, the IT History Forum organizes an event in a series of "Great Hungarian IT Workshops." Each event is focused on an institution - or the individuals working in an institution - that made significant contributions to the history of IT in Hungary. The events were organized with the active participation of two-three key individuals from these institutions, which in most cases had long since ceased to exist. If the institutions or their successors were still in existence, the events were held at the original site, or more likely at the host institute, the Obuda University (<http://uni-obuda.hu/en>), which was able to accommodate the often two hundred or more participants. An essential element of the events was the video recording of all the presentations, which were most often given by the most renowned experts in their fields. Their recounting of the past events and achievements constitutes a valuable oral history of the IT industry in Hungary. To date, 28 such events have been held, with more than 100 hours of video recordings available on YouTube. The funding for the video recordings was provided by the John von Neumann Computer Science Society.

Recently, the IT History Forum launched a new series of events entitled "Then and Now" in which the past and present of a given profession is presented. To date, three such events have been held focused on watchmaking, data centers, and the meteorology profession, which has always been reliant on intense data processing. These events featured the elite within their profession as presenters. The presentations and supporting documents, data and articles are all available on the Forum's website.

IT History Data Collection

Another critical focus of the IT History Forum's research efforts is the collection of data related to Hungaria IT institutions, especially those involved in the development of IT products, or important applications of international products in Hungary as well as data related to individuals who made significant contributions to the early stage of computer science in Hungary. Using a standardized template, many students from the Obuda University who were enrolled in the "Chapters in the Cultural History of Information Technology course" (designed and taught by the author of this article) also contributed to this data collection. All of the material is available on the Forum's website and is in the process of undergoing peer review.

Profiles in IT History

In 2010, the board of the IT History Forum decided to conduct video interviews with prominent leaders from the early period in IT history in Hungary. The guiding principles in the section of these profiles in oral history were (1) that the individuals be experts in their field and (2) older than 70 years. Over the past four years, the John von Neumann Computer Science Society has financed the production of eight profiles each year. Each interview lasted at least one hour and focused on approximately 10 questions. Afterwards, the interview was edited to around 20 minutes and put on YouTube, with the approval of the person interviewed. The interviews were also included in the Hungarian National Digital Archive. The profiles brought to light new information that is significant to the understanding of the history of IT in Hungary. For this reason, the IT History Forum decided to make the transcript of the entire interview available to researchers. To date, 32 profiles and eight full transcriptions have been completed.

Development of the Archives of the History of Hungarian IT

Through the organization of events and collecting of information and artifacts, it became increasingly clear that a system needed to be developed to ensure the sustainability and easy access to the increasingly large body of information regarding the history of IT in Hungary. The IT History Forum turned to the John von Neumann Computer Science Society with a proposal and request for funding for the development of the Archives of the History of IT in Hungary. The archives would be devoted to the preservation of information, facts and documents with significance in the history of IT. The archives would focus on information that could be digitally stored, not on the collection of artifacts.

Following approval from the John von Neumann Computer Science Society, work began on the implementation plan in January 2013. Soon after, with the assistance of a team of 14 technical experts who volunteered their time, the collection and processing of documents related primarily to the pre-1990 period began. The work continues to collect key documents pertaining to IT-related institutions, informations about hardware and software products, applied systems, and research in the history of IT in Hungary and significant events. In addition to the collection of data and documents, including photos

and videos, pertaining to these categories, the archives also contains substantial information about the individuals who contributed to all of the above.

Another important function is the secure storage of the information collected. With this in mind, the John von Neuman Computer Science Society signed an agreement with the Hungarian National Informatics Infrastructure (NIIF) (<http://www.niif.hu/en>) for unlimited secure storage of the digitally archived material. Additional agreements were entered into for the storage of other materials. The information found on traditional media (i.e. paper documents, books, etc.) is stored in the National Technical Information Center and Library of the Budapest University of Technology and Economics (<https://www.omikk.bme.hu/en/>). Finally, the video materials, particularly those created as part of the "Profiles" series, are stored in the Hungarian National Digital Archives. <http://mandarchiv.hu>

As of the summer of 2015, the archives include 802 documents, information on 112 institutions and 97 products; 94 studies; “Who is Who in Hungarian IT” 56, “Those who are not with us” (individuals who have made outstanding contributions) 158, 31 IT History Forum events, previous 537 IT – related events: 3 industry wide applications; 32 “Profiles” 8 full transcripts of the oral history interviews; 530 photos; close to 100 hours of video recordings of presentations given by 305 presenters at IT History Forum events.



Team of experts building the Hungarian IT history archives¹

Processing of all materials to be archived is conducted by volunteer expert team, with a support of a professional librarian. Certain jobs that require special expertise (for example: video editing, database management, website management) have been outsourced to professionals.

¹ From left to right: Károly Megyery, Miklós Havass, Tamás Koltai, Edit Sántáné-Tóth, Bálint Dömölki, Eszter Kertészné Gérecz, Árpád Bedő, Erika Nyáriné Grófcsik, Géza Álló, Pál Simon, Eleonóra Dettai
Members of the team, but not on the picture: János Ballai, Bálint Bereczki, Mihály Bohus, László Kutor

Future plans

The organizers of the archives feel it is important to continue the work they started. However, they also worked to inspire others to collect the experiences and memories of their and to preserve the relevant documents that are still available. As a result, a cadre of IT professionals are actively engaged in the collection and processing of information related to the history of IT in Hungary. Another important objective is to spark the interest of the younger generation in the history of IT. Already, a course is offered at the Obuda University in the history of IT. In addition to this, however, the creation of research projects and supporting scholarships would greatly contribute to the development and sustainability of research into the history of IT. Another goal of the IT History Forum in Hungary is to develop active partnerships with other international organizations sharing the same mandate, such as the Charles Babbage Institute, which has a decades-long history of collecting, processing, preserving and publishing information about the history of information technology.

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