

The SoftOrg Software Engineering Tool Development in the 1980's

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Following a successful joint test project between the SZKI and SZÁMOK Institutes for the Siemens AG in which the software for the German railways – ITS - was systematically tested by Hungarian software specialists, it was decided to extend and reuse the tools made for that project. It had been recognized that software tools were at the heart of software engineering technology. Without automated tools it was impossible to implement the concepts of software engineering for large scale projects. The start had been made with source analysis and module testing tools, but it was seen that other tools were necessary to support the whole software life cycle. This insight lead the American software engineer – Harry Sneed – to sign a contract with the SZKI and SZÁMALK institutes for developing a chain of interdependent software tools to support all activities of the software life cycle from the project planning to system integration. Instrumental in the formulation of that contract was Győző Kovács, the technical adviser of the SZKI.

The concept of the tool family, or software production environment as it was referred to then, was provided by Harry Sneed, who was to coordinate the activities between the two Hungarian partner institutes. The same Harry Sneed was also responsible for selling the products on the German market. SZKI was responsible for developing three of the four members of the tool family:

- Softman for the project management activities – planning, estimating and controlling
- SoftSpec for the analysis and specification of the target IT-systems
- SoftCon for the construction of the software systems

SZÁMOK remained responsible for

- SoftDoc for the Source Analysis, code checking and measurement
- SoftTest for the module testing and
- SoftInt for the final integration and system testing.

The two institutes were to cooperate in developing the code generator CodeGen, which would link the two sides of the development cycle.

Development began in 1980 with the SoftSpec system. By 1982 it was already in operation at the Bertelsmann AG in a project to respecify the mailing system there. By 1983 that project was successfully completed and SoftSpec had proven itself in the field, thanks to the professional work of the SZKI software developers under the leadership of Erika Nyáry. Other customers followed quickly. In 1983 SoftSpec was installed at BMW in Munich and at the Württembergische Versicherung in Stuttgart. Both user companies were using SoftSpec

to specify their most critical applications. In 1984 the Deutsche Bank purchased SoftSpec to specify their credit rating systems. The Continental Tire Company in Hannover and Boehringer Chemicals in Mannheim soon followed. SoftSpec was a resounding success story and SZKI stood at the top of the requirement specification tool technology in Europe.

In the meantime, in 1983 work had begun on the SoftCon tool which was intended to bridge the gap between the application specification on one side and the technical implementation on the other. To generate working programs for the mainframe computers it was necessary to produce data models for the various target databases, to create screens for the computer/user interaction and to generate programs frameworks with business rule contents. Under the capable leadership of Laszlo Fehérvári, the SoftCon team was able to make this for different vendor environments ranging from IMS and DB2 with CICS to Siemens BS2000. By 1985 it was possible within a single night to transform the application specification into a customized technical architecture, something that would have otherwise cost several man months of manual effort. In the following years SoftCon was used at the BMW, Bertelsmann AG and at the Bundesbahn. In 1986 it was installed at Thyssen Steel and Krupp where it served to design complex steel production systems. At Thyssen the first programs could be automatically generated. Here too SZKI had taken on the role of a pioneer in design technology for Siemens and IBM mainframe computers.

The third of the SZKI software engineering systems – SoftMan – was started in 1984 with a team of three persons around the project leader Róbert Melli. Two years later SoftMan could be introduced at Thyssen Steel and the Bremer Harbour authority. SoftMan supported several planning and estimation methods and was used at Bertelsmann, Thyssen and the Bremen Harbour to plan, calculate and control complex logistic systems. By 1988 it was also being used at the German Bundesbahn to manage the activities of the other tools. In 1988 the SoftOrg tool family had become established in the German market as the leading software engineering system. Even the German Bundeswehr was considering using it.

The demise of the mainframe and the collapse of the Hungarian computer institutes in 1990 ended the life cycle of the SoftOrg tool family. The development teams were dissolved and the customers moved over to PC-development environments. The era of software development on the mainframe was over at the same time as the great socialist experiment came to an end. Both shared the same fate. What was left was the invaluable experience gained by all who took part in these two historical developments. SZKI and also its partner institute Számok had become legends in software engineering technology. It is significant to note that in 1986 the Softorg tools were even taken over by the University of California in Berkley to serve as a model for what software engineering tools should perform. This fame was due to the remarkable skills exhibited by the SZKI and SZÁMOK software engineers.