

The KFKI TPA series: much more than just "clones"...

What's a TPA?

The name TPA refers to the term "Stored-program Analyser", and the story behind this is similar to that behind Digital's "PDP". In the '60s the Central Committee of the Hungarian Communist Party ruled that all computer development in Hungary should be frozen and that computers should be purchased from the USSR. No one was allowed to construct computers, so engineers at the Research Institute for Measurement and Computing Techniques of the KFKI (Central Research Institute for Physics) decided to build "analysers". This rule was later repealed, but the name "TPA" stayed.

The TPA-project lasted from 1968 to 1989 (although the name "TPA" lived until 1992), 1435 computers were sold during this time. Although the TPAs are often labelled as mere "clones", it is important to point out, that most of them weren't photocopies: 1215 were designed from scratch (most of them was designated to be compatible with something, these were re-implementations), 105 were "card-by-card" clones, and 115 were systems based on original processors (like the TPA11/510, which is a MicroVAX II; this was in the late eighties, when the TPAs were sort of "unofficial OEMs").

The role of the TPA

The importance of the TPAs lies in the historical fate, that Hungary was cut off from leading "western" technologies. Big mainframes were manufactured by the socialist countries (the EC/EBM line, mostly IBM clones), and some original "big irons" came over too (Siemens, a few IBM machines, etc), but the market for small systems, which were ideal for scientific, educational and business purposes wasn't really big, so no one manufactured computers like that. The KFKI filled this gap, and they did it well: the TPAs were of higher quality than many other machines built in the COMECON countries. The "Unified Minicomputer Program" (SM/EBM - clones of the DEC PDP-11 and the HP-2000 and 3000 series) of these countries started much later, in 1974, and the TPAs didn't fit it, so they remained without official support (the SM/EBM and EC/EBM programs were supported by the government), backed up only by some personal connections to the upper political circles (this was one of the most important things in the socialist countries!)- and by the users.

The machines

Many different computers were built under the label "TPA":

The [DEC PDP-8](#)-compatible line, which started with the transistorised [TPA1001](#), and continued with the *TPA-8* series: the [TPA/i](#), the *TPA/s*, the [TPA/l](#), the [TPA/l128H](#) and the [TPA Quadro](#). This was the most successful line, it lasted to the end: around 800 of the TPAs are TPA-8s.

Own developments, like the 16-bit [TPA-70](#) (1970-75), which failed partly because the KFKI didn't had the means to provide enough software for the machine to make it successful.

The TPA-11 line, with DEC PDP-11-compatible systems: the [TPA1140](#) (1977), the [TPA1148](#) (1981), [EMU-11](#), the [TPA-11/440](#) (1982), the TPA-11/420 (1985), the [TPA-11/170](#) and the "two-faced" [TPA-Janus](#).

The other subseries of the TPA-11 line, which were VAX-compatible systems: the [TPA-11/580](#), a VAX-clone, built to satisfy those, who needed the original machine, which was "forbidden fruit", the smaller [TPA-11/540](#), and the very interesting multiprocessor [TPA-11/560](#).

An interesting machine from the creators of the TPAs: the [TPA-XP1](#) 16-processor parallel "mini-super" computer (1992).

Parallel to this, there were other developments done at the KFKI MSZKI: terminals, data processing equipment, scientific devices, CAMAC modules, peripherals, peripheral and storage controllers,

equipment for remote data processing, networking, etc, and software. Software is a key to success, but the low budget of the MSZKI led to the cooperation with another companies and insitutes, like Sztaki when it cam to writing software. This was the same with hardware: parts of the manufacturing were spinned off to third parties, mostly electronics companies like Vilati, Orion, Videoton.

Sometimes unrelated machines were labelled as TPAs, too. Big VAX machines, which were smuggled in, despite the COCOM embargo (a pact of the "western" countries against the socialist countries, that forbid the export of high-end technologies to these countries), were relabelled to TPA's: VAX11/780s (and sometimes 8000s, although only a few has made it to Hungary) were often seen with KFKI stickers over the original Digital banner. This was of course top secret then. In the mid-eighties there were some other machines like this, not just DEC computers, but PCs too. Nobody was allowed to know, that these were original western products, even when everybody just knew...

What has left?

After the fall of the "Iron Curtain" the MSZKI formed a joint-venture with Digital Europe and Számalk (a big computing company in Hungary), the development and manufacturing staff was dissolved. Not much has left from the facilities where the TPAs were manufactured...

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