TPF Expertise: Going, going, but not yet gone…

Alias: The Mainframe Time Bomb…

The major computer systems of the commercial world originated in the mid-1960's and grew explosively for 30 years through to the mid-1990's. These were large, centralised, proprietary, mainframe system architectures from IBM, Unisys, Hewlett-Packard and others and many tens of thousands of them ruled the computer processing domain. From the mid-1990's these systems became unfashionable and an ever increasing emphasis was placed on what were called "open, new technology architectures", as represented by UNIX, Windows and NT. Computer processing itself became ICT, which sounded more impressive and professional, and by the end of the 20th century the vast majority of development dollars, formal and informal education offerings and media attention were focused almost exclusively on new technology issues and opportunities. Nobody under 30 was interested in a career in what had become known as the "legacy mainframe environment"; many over 30 went to great trouble and expense to re-educate themselves into new technology careers where demand was supposedly unlimited. The mainframe systems were going to disappear, though nobody quite knew how, so the media and the multitudes of new technology gurus simply proclaimed it and assumed it would just happen of its own accord by some magical process!

However, the tens of thousands of mainframe systems have not disappeared: they simply faded from the limelight and the hundreds of thousands, if not millions by now, of new technology systems monopolised the hearts and minds of those who decide what we are to know, what we are to think and how we are to act. A small glitch hit this reigning philosophy with the Y2K millennium problem, which pushed the mainframes briefly back into the limelight. Mainframe COBOL and Assembler programmers were suddenly a scarce and desirable asset, but the Y2K problem turned out to be grossly over exaggerated and of limited duration, so fashion re-established its dominant influence very quickly and mainframes faded from public attention again. The dollars were again poured in ever increasing quantities into the trendy articles. Mainframe budgets were cut to the bone.

To reiterate: the vast majority of the mainframe systems are still there. Not only are they still there, but they still do the vast majority of the basic business processing on which the modern, complex world of commerce, industry and government completely depends. Nevertheless, not a single high school, college, university or commercial education provider offers technical or career training in mainframe technology. The crucial few hundred thousand technical people, both hardware and software, who maintain, operate and enhance the mainframe systems are, believe it or not, mortal! Many started their careers in the 1960's or 1970's and thus they are a rapidly aging and irreplaceable population. This is the mainframe time bomb. It is not caused by any failing of the mainframe itself; rather it is caused by the short-sightedness of the ICT community. Mainframes have many essential business characteristics which new technology systems have been unable to replicate. That is why the mainframes are still there.

One esoteric subset of this old mainframe population is IBM's TPF environment. There are exactly 60 TPF systems owned and operated by (mostly) large corporations scattered across the world: 21 in North America, 3 in Latin America, 12 in Europe, 4 in the Middle East, 1 in Africa, 17 in the Far East and 2 in Australasia. The majority, 47, of these TPF systems are involved in travel reservations for airlines, railways and hotels; the remainder primarily for specialised financial transactions. These systems were initially installed between 1968 and 1985 and the bulk of the population of TPF software technicians

who cares for them are from those times as well. It is estimated that this population in 2003 totals at most 3000 still competent and active individuals: a decrease of around 30% compared to the estimate in 1999. Like the systems themselves, these people are scattered across the world, but since most of the largest systems are in the US, more than half this population resides in the US.

Traditionally, the financial users with TPF systems obtained their people from the travel industry and did not invest in training themselves. The owners of TPF systems in the travel arena did still train limited numbers of new TPF technicians on a regular basis, up till the Gulf War in the early 1990's, which hit the travel industry very hard. For years thereafter nobody did any training whatsoever (many users completely dismantled their training departments and never restarted), but by the mid-1990's some had resumed on a small scale. Since the events of 11 September 2001, the Iraq War and SARS, which were in combination an even harder blow to travel than the Gulf War, training has stopped everywhere. The systems are all running on borrowed time: the remaining effective working lifetimes of a couple of thousand people already well into their 40's, 50's and 60's…

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Amsterdam, January 2003