Changes in 25 years of Computing

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A quarter of a century is a very long time in computer history terms; if one accepts the world's first electronic computer was developed at Bletchley Park by Alan Turing and his team a mere 60 or so years ago. From there to the first commercial computer, LEO, from Joe Lyons the bakers took a decade.

Now advances proceed with breathtaking speed which is why the last twenty-five years have been so dramatic. When the British Computer Society was formed nearly fifty years ago, computers were "built" and often bespoke. The modern revolution began 25 years ago in 1981; IBM released their new desktop computer, the IBM PC or personal computer.

The first IBM PC was slow (4.77 MHz) and came equipped with only 16 kilobytes of memory, expandable to 256k. It had a price tag of around £820 which would be over £2000 today.

The transformation of integrated circuitry into the micro chip and the inevitability of Moore's Law was the technology which propelled the PC into the ubiquitous tool that is now part of most of our lives.

The next important contributor to computing's evolution was the Internet. Facilitated by the TCP/IP protocol, which set the rules for communications between computers, the Internet, which had its roots in developments started in the 1960s, became readily available with the creation of the web in 1991 by Sir Tim Berners-Lee, whilst working at CERN.

Berners-Lee told CNN that the idea behind the Internet was making information accessible to all. "Wouldn't it be nice if actually all the information out there were in a what-you-see-is-what-you-get

form?" Berners-Lee said. The World Wide Web, with its user-friendly applications, coupled with the first public access web browser Mosaic, has transformed computer usage, and information access and transmission, for all of us.

Next on the list comes the cell phone, which may have been conceived as early as the late 1940s, but wasn't widely adopted until the FCC authorised cellular service in the early 1980s. Although initially launched as a simple analogue based radio receiver and transmitter, today's cellular phones and their offspring – the PDA – are fully functional computers that fulfil most of the core functions of the PC.

The PC has created wealth on a massive scale. The combined stockmarket values of PC hardware and software firms exceed half a trillion dollars. Cheap computers have boosted the productivity of individual workers. And hundreds of millions of people have benefited from access to word-processing, spreadsheets, e-mail, file-sharing and cheap phone calls – to say nothing of the riches of the web. And we now all use computers on a daily basis whether overtly with our PCs or PDAs or indirectly in our cars, televisions and washing machines, through the telephone networks or ATMs and as customers of government and business services.

The PC democratised computing by making computers cheaper and more accessible than the huge mainframes that came before. But the PC is no longer centre of the technological universe; today it is more likely to be just one of many devices orbiting the user. You can now do e-mail on a BlackBerry, plug your digital camera directly into

your printer, and download music directly to your phone – all things that used to require a PC.

The growth in IT – over one million UK citizens now work in the industry – has necessitated a huge growth in the supply of skills training and qualfications at all levels. Here the BCS has rightly fulfilled the remit of its Royal Charter to engage the broader public with the advantages of and the skills to use IT.

The BCS has made enormous strides on the professionalism front over the past few years. But we also recognise that there remains much to be done before we can claim to have a mature IT profession within which professional qualifications are seen as a "must-have" for business rather than as an optional extra for individual practitioners. Even with the increase in BCS membership to over 55,000, there is still only a small minority of practitioners in membership of any professional body and few employers yet require professional qualifications as part of their recruitment practice. The Government has recognised the challenge by appointing a Director for IT Professionalism and offering strong support for the BCS campaign.

The Parliamentary IT Committee (PITCOM) and BCS have strong links and we both welcome active support from all quarters.

Computers have changed the world and will continue to do so. We all need to ensure that the transformations to come do deliver real benefits to society.

Charles Hughes is President of The British Computer Society, an Executive Council Member of PITCOM and Chairman of the Programme Committee and a Court Assistant of the Information Technologists' Company. His 40 year career in IT has spanned the supply side and central government and he now directs eManagement Limited, offering guidance on the effective implementation and use of IT.