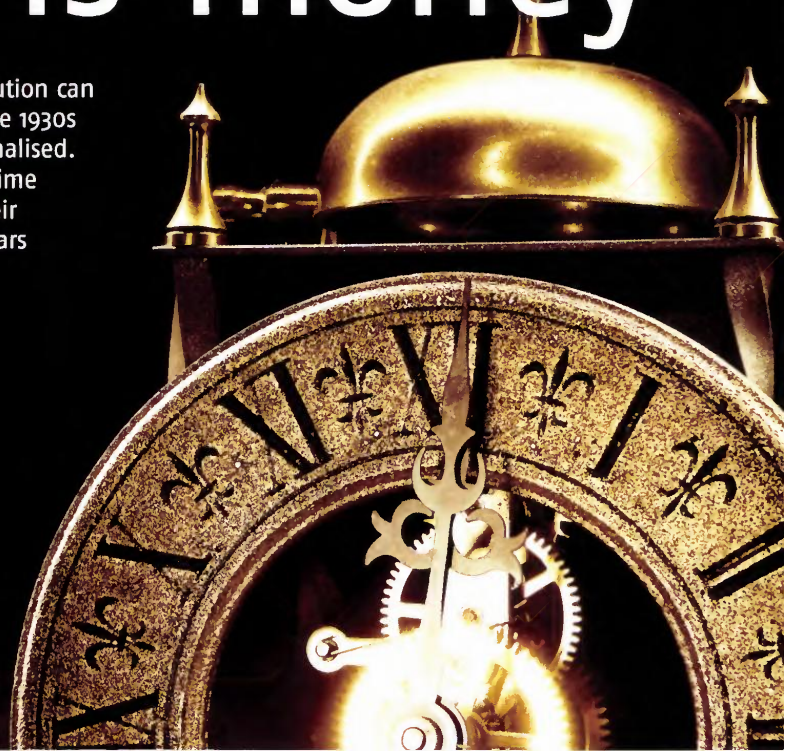




Time is money

The first time and attendance solution can be dated back to the 1800s. By the 1930s the solutions were fully professionalised. **John Charlton** looks at the early time and attendance solutions and their development over the past 150 years

“Twenty years ago saw the introduction of the first electronic systems using swipe cards. To go from mechanical systems to where we are now is phenomenal



FACT FILE

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Time stands still for no one, so it's no surprise that technology is driving time and attendance (T&A) systems in ways that would have seemed science fiction not so long ago.

T&A technology appeared in the late 19th century as a relative latecomer on the industrial scene, arriving more than 100 years after the start of the British Industrial Revolution.

In industrial towns few workers could afford alarm clocks and were woken by knocker-uppers who used long poles to bang on doors or bedroom windows. Some were hired by factory owners to make sure shift workers arrived on time.

This spread of the alarm clock from the 1860s onwards in a sense set the scene for early T&A devices. Alarm and workplace clocks gave a fairly accurate measure of time, and employers used handwritten logs to record the start and finish times of their workers.

The first T&A machine to use clocking in and out cards to record start/finish times was developed by Daniel Cooper of Rochester, New York, in 1894 and was dubbed the Rochester Recorder. The cards had seven spaces with an in and out area, and each worker, at a workplace using the device, had a card.

This basic concept underpins mechanical clocking in and out devices – modern versions of

which are still used today. IBM adopted this technology and, through its Time Recorder Division, led by founder Thomas J Watson, took it forward.

Until the late 1930s the mechanical devices had to be wound up, but in 1938 IBM developed a fully automatic time recorder that generated accurate records of attendance.

The second coming

The second T&A revolution was triggered by the advent and implementation of digitisation and IT, which enabled reading devices to link to software systems that recorded employee timekeeping and interfaced with payroll systems, enabling accurate wage and time calculations and records.

From the early 1980s, T&A systems read employee ID cards with machine-readable magnetic strips that carried encoded personal data. These evolved into proximity cards, or fobs, that carry employee ID and attributes data that is scanned on entry and departure, and sent to relevant HR, payroll and security systems.

Biometrics, coupled with 21st century comms and software technology, have given T&A systems more impetus. About 40% of the employee self-service and data capture terminals we supply contain biometrics for identification, and this



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percentage is climbing rapidly,' comments Kronos Systems senior operations director Simon Macpherson.

Amano product and marketing director Matt Wheeler says: 'T&A systems have come a long way. Twenty years ago customers were using mechanical machines and cards. Twenty years ago saw the introduction of the first electronic systems using swipe cards. In that time, to go from mechanical systems to where we are now is simply phenomenal. We still see mechanical devices in place. We still sell them, typically to small workshops and garages with workforces of up to 30 employees.'

Systems in sync

Neville Henderson, principal consultant at Pasfield-Curran, consulting arm of T&A specialist Crown Computing, says: 'The advent of web-based applications has been a game-changer. They have made a major difference in terms of replacing old centralised models for time and attendance monitoring.'

'At a higher level, the evolution from T&A systems to workforce management solutions has made a significant impact. They enable T&A, HR and payroll systems to 'talk' to each other, giving HR and corporate management access to complete and actionable workforce information.'

Marc Clavereau, UK managing director of T&A systems supplier Bodet, says he is seeing a 'huge demand' for biometric systems using fingerprint and hand-scan technologies. But, he says, the most widely used systems today employ proximity clocking via cards, tags, key fobs or key rings.

Alistair Slade, director of Access-to-Time, a Bath-based T&A specialist, says: 'Improved biometric options are arriving all the time, and the existing ones are getting less expensive.'

'Face scanning is becoming increasingly reliable, although there are issues with the ability of all users to use one terminal; for example, if some users are in a wheelchair. Some day they will be so cost effective that multiple terminals will be installed.' **PW**

TOMORROW'S T&A WORLD

Neville Henderson, principal consultant at Pasfield-Curran, consulting arm of T&A specialist Crown Computing, says: 'We are seeing a significant trend in making T&A information more useful. Companies have.... vast amounts of workforce data, but so far few have used this "data mine" to glean strategic information for the business. This is changing, as are the capabilities of workforce management systems, which will allow management to view and analyse workforce patterns in real time.'

For Marc Clavereau, UK managing director of T&A systems supplier Bodet, 'mobility systems are an exciting solution. We already implement smart phone clocking, touchscreen terminals and, more recently, intranet tablets.'

Alistair Slade, director of Access-to-Time, a Bath-based T&A specialist, expects communications technology to be a key change driver for T&A systems. For example, he says that wireless technology enables T&A systems to be set up without the need for expensive cabling. Such systems can transmit emails to payroll and HR with appropriate data on employee comings and goings. He also forecasts a key role for comms in enabling off-site workers to clock in via mobile phone or internet-connected devices.

Kronos Systems senior operations director Simon Macpherson says: 'The web and the expectations that have been set by consumer applications have created a new generation of systems that are intuitive to use and offer guidance to the user when there are challenges. We will see this ease-of-use flow through to yet more sophisticated employee self-service terminals and increased back-office functionality.'