

35 YEARS OF TIME AND BILLING TECHNOLOGY: Are We Circling Back to the Old Days?

by Jim Hammond

The legal software industry has seen much change over the past three decades. From punch cards to Webbased time entry, the industry has made and continues to make impressive technological leaps that help firms to not only save time, but also to see where they were and where they are going. Here is a brief synopsis of some of the time and billing “rites of passage,” if you will, from 1970 until now.

1970s

The utilization of time and billing software technology within law firms began in the early 1970s. Prior to this, manual ledger cards were the standard. The late 1960s and early 1970s also produced the legal service bureaus.

Under the service bureau process, firms would provide a list of their master files which included client names, addresses, attorney rates and so forth. Then, on a weekly basis, firms would send in massive numbers of paper time sheets. Each time sheet would include about 10 time entries on a single page. This was thought to be a major advancement over

the very first “time slips” which were tearoff slips about the size of a bank check.

The first “short-hand” time-entry codes were printed on the bottom of the paper time sheets so that the attorney could just write in “TC” for “Telephone Call” instead of writing out the entry. Each attorney needed a “cheat-sheet” that listed clients and matters. The time narrative had to be carefully printed in little blocks, one character per block. It was common to only allow 250 characters per time entry. Firms sending boxes of time sheets would also include a manual tally sheet. The service bureau company would have rooms full of keypunch operators; one operator would enter the time sheets, and a second operator would re-enter the same entry as a validation. A control person would then check the computer to verify that all time sheets had been validated, and the computer totals matched the firm provided tally sheets.

At month-end, the firm would send the final batch of time sheets, along with the billing and receipt entries from the prior month. This time, the service bureau would print out final bills. Client bills were often printed on special paper divided into two sides; the client bill would be printed on the left side of the page, and a duplicate copy for the firm would be printed on the

right side. An innovative micro-perforation down the center allowed these pages to be split, without having to use valuable computer and printer resources to print separate copies. Do you notice a missing step? Back in these days attorneys did not edit pre-bills! Can we please roll the clocks back?

When billing was completed, various reports were run including attorney productivity, A/R and summary of client/matter and billing payment history. Most modern in-house time and billing systems today produce the same exact reports that were generated in the service bureaus. As a matter of fact, the DBR (Detailed Billing Report) is a common term still used today in many firms.

By the mid 1970s, in-house systems were being implemented at most large firms. Software that was similar to the service bureau was now being provided with minicomputers and terminals to handle both data and word-processing. The dilemma early on was that the manufacturers of word-processing systems could not handle “data-processing,” they could only understand words on a screen, not numbers. As great as they were, word-processing systems like IBM® Display Writers, NBI and “Centrex” couldn’t perform math calculations necessary for billing.

The Wang systems, followed by similar systems from Barrister, quickly changed all of this. They were able to run both word-processing and data processing applications such as billing, A/P, G/L, conflicts and early litigation support applications. Major hardware providers like IBM®, DEC and HP were right on their heels. In those days the “iron” (hardware) was very expensive, and decisions to purchase were based primarily on hardware technology and field service. Software was secondary, and implementation and training services were usually bundled in for “free” with a system.

If you decided to buy HP hardware, you would choose between CompuTrac and Harris-Paulson software. If you wanted DEC, Quorum was the software of choice. These computers were so advanced that they had 300MB disk packs that fit into hard drives the size of today’s washing machines. The disk packs looked like 78-RPM records sealed in a large round clear plastic housing. The IT person would remove and store these disk packs as a way of loading application software and data into the systems. For example, month-end billing necessitated a complete set of dedicated disk packs. Vendors benefited from this as they could control the environment by having a terminal on every desktop. At \$3,000/piece, it could get costly for every secretary and

staff person to have a terminal, but that’s what was required. Typically, these systems would cost an average of \$500,000 to a few million dollars.

In addition, firms had to order countless other hardware components just to get a system installed. For example, for every 12-16 terminals a “terminal server” was required, which was essentially a minicomputer dedicated to feeding information from the main minicomputer to the terminals. In addition, many firms installed elaborate glass-walled rooms with raised flooring for massive wiring. These rooms were not in the basement; on the contrary, they were strategically built right near the main reception area so that visitors and customers could see their impressive technology investment. For the first time, vendors were able to support clients remotely with high-speed 1200-baud modems. Dozens of modems could be installed with dedicated phone lines for remote office access.

The early time and billing systems were “command-driven.” These systems typically would provide a single line on the screen, with a blinking cursor. The trained operator would then enter highly cryptic entries in order to perform tasks. For example, “\$opertime” might produce an equally cryptic screen that allowed for time-entry from paper time sheets.

The screens were easy to read since they were either green with light green text or white with black text. The more “commands” the operator knew, the more tasks could be accomplished. Law firms had finally moved into the information age. For the first time a firm had technology that moved beyond a telephone system or a copier. There was no turning back. One of the nice things about this technology was that the IT staff, by and large, had to keep just one computer working, the mini-computer(s) in the computer room. The desktop terminals were just a little bit more than a picture tube, and they were easy to swap out with replacements.

The time and billing systems of this period were some of the best ever. Although they lacked advanced looking screens, these systems were loaded with capabilities. If you were running Wang Informatics, Quorum MP1500, CompuTrac HP3000 or Barrister CFMS, you had a powerful tool. Many top-end systems today are still lacking the features that were present in these old stalwarts. These systems were also very batch and process-oriented. Even with the large 300 MB drives and memory measured in mega bytes, most system-wide activities required overnight processing. Historic data was usually saved in summary format only; month-end reports had to be run and saved as hardcopy since they couldn’t

be recreated at a later date. Month-end closing procedures were sensitive to specific batch updates and in larger firms required an entire weekend to run. Furthermore, many times month-end reports were run from duplicate copies of the database on a back-up server, since it was too taxing to run reports and also do daily processing on the same system.

1980s

The mid 1980s brought about a lot of change in the time and billing technology world. A disruptive technology changed it all -- the IBM PC. The original IBM PCs only had 64K memory, with either a single or dual 5 1/4" floppy disk (floppies), but it put computing power on the desktop for about the same price as the last generation "dumb" terminal. This started a big debate. Were these geek toys or could you really do work with them? They were off to the races. PCs could be networked together to provide for common storage and shared resources like printers and modems.

A tiny company in Orem, Utah called Satellite Software developed a PC-based word-processing program that mimicked the special function keys of a Wang word-processor. Their original program developed for Data General mini-computers

replaced the then market leader WordStar. All of the legal secretaries who knew Wang could almost immediately start using this new PC-based product. The company and product were eventually renamed to be WordPerfect.

In 1989, WordPerfect released their most successful version ever, WordPerfect 5.1 for DOS, which included a pull-down menu as well as support for tables, a spreadsheet-like feature. Unlike previous DOS versions, WordPerfect 6.0 for DOS ran in a graphical mode, presenting WYSIWYG (What You See Is What You Get) fonts and text effects like bold, underline and italic. In the late 1990s Microsoft's aggressive marketing and bundling with the Office Suite replaced WordPerfect in most firms. Although this discussion about PC word-processing has little to do with time and billing systems it is an important component that justified a desktop PC for every member of the firm.

1990s

By the mid 1990s, almost all firms had newly networked PCs that had become word-processor and email machines. A split was starting to take place in the time and billing world. Small and mid-sized firms were moving to 100% PC solutions, and larger firms

were remaining on UNIX mini-computer systems. This was predominately a database issue. There were no large-scale PC-based databases. A vendor could choose FoxPro or ACCESS but neither would scale up to meet the needs of larger firms.

Early DOS-based time and billing systems such as Pyramid or Juris®, originally designed for very small firms, were already starting to creep into mid-sized law firms with Windows-based versions. This allowed firms to finally eliminate their mini-computers at a substantial cost savings. An early pioneer in this endeavor was a West Coast-based visionary, Alan Rich, Jr, who had a PC-based program that ran on SCO Unix. His company was called Elite Data Systems. He boldly challenged the larger time and billing vendors with a price competitive UNIX-based system, which eventually enabled him to become the all-time market leader in larger law firms.

During this time, another disruptive technology made its mark in time and billing technology history. After many years of development in the university and defense community, in October 1995, the Federal Networking Council unanimously passed a (www.fnc.gov/internet_res.html) resolution which defined the term "Internet." The Internet refers to global linking by unique addresses (IP),

with the ability to use a standard communication protocol (TCP/IP), that provides users with access to remote information and the ability to send email messages around the world on a standard platform. The same debate again took place, as it had done during the introduction of the first PCs 10 years earlier. Was this geek toy (the Internet) ever going to have any useful benefit?

The early Windows® PC time and billing systems were, for the very first time, allowing attorneys to enter their own time, perform simple inquiries and view docket calendars. The technology frenzy began around 1997, when firms started planning for the Y2K phenomenon. Older computers only had 2-digit year fields in their code which was fine until 1999 tried to become 2000. Large numbers of firms had to invest in new systems. It was also time to “standardize”; proprietary was out, standard was in. Even larger firms were switching to Windows®-based time and billing systems, discarding their mini-computers for larger PC file servers. Microsoft® SQL Server became the platform of choice, and the cost of databases and servers plunged over the period of just a few years.

Attorneys, too, were changing. They started accepting desktop PCs as a tool of their trade and even began to travel with notebooks, eventually adopting

palmsized systems such as BlackBerry and mobile PCs.

Now

Today, firms have come to expect unlimited flexibility, hundreds of advanced bill formats, unlimited rate structures and professional types. Firms are expecting fully-integrated collections systems, integrated full-text conflict searching, marketing, case management and docketing that are every bit as capable as their accounting systems. Business Intelligence and Digital Scorecards in a browser screen have put highly complex data analysis in the hands of everyone from novice attorneys to partners who seek information to manage the practice of law and their clients as a business.

Will we circle back to the old days? No?

Well, we may see the day when all time and billing systems are 100% browserbased, running from a giant Web server(s). This effectively turns the desktop computer back into a “terminal,” since a Windows®-browser program is identical to its predecessor terminal emulation software. It is also possible that once a firm runs the majority of applications strictly from a browser, the servers will get migrated off-site to a massive data-center. The data-center

would effectively operate as the service bureaus of 35 years ago. We probably won't see the paper time sheets and key punch operators again, and no one believes we'll see firms eliminate pre-bill editing.

Other than these changes the basic core of time and billing, along with the rest of the accounting functions, in essence hasn't changed much in 35 years.

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