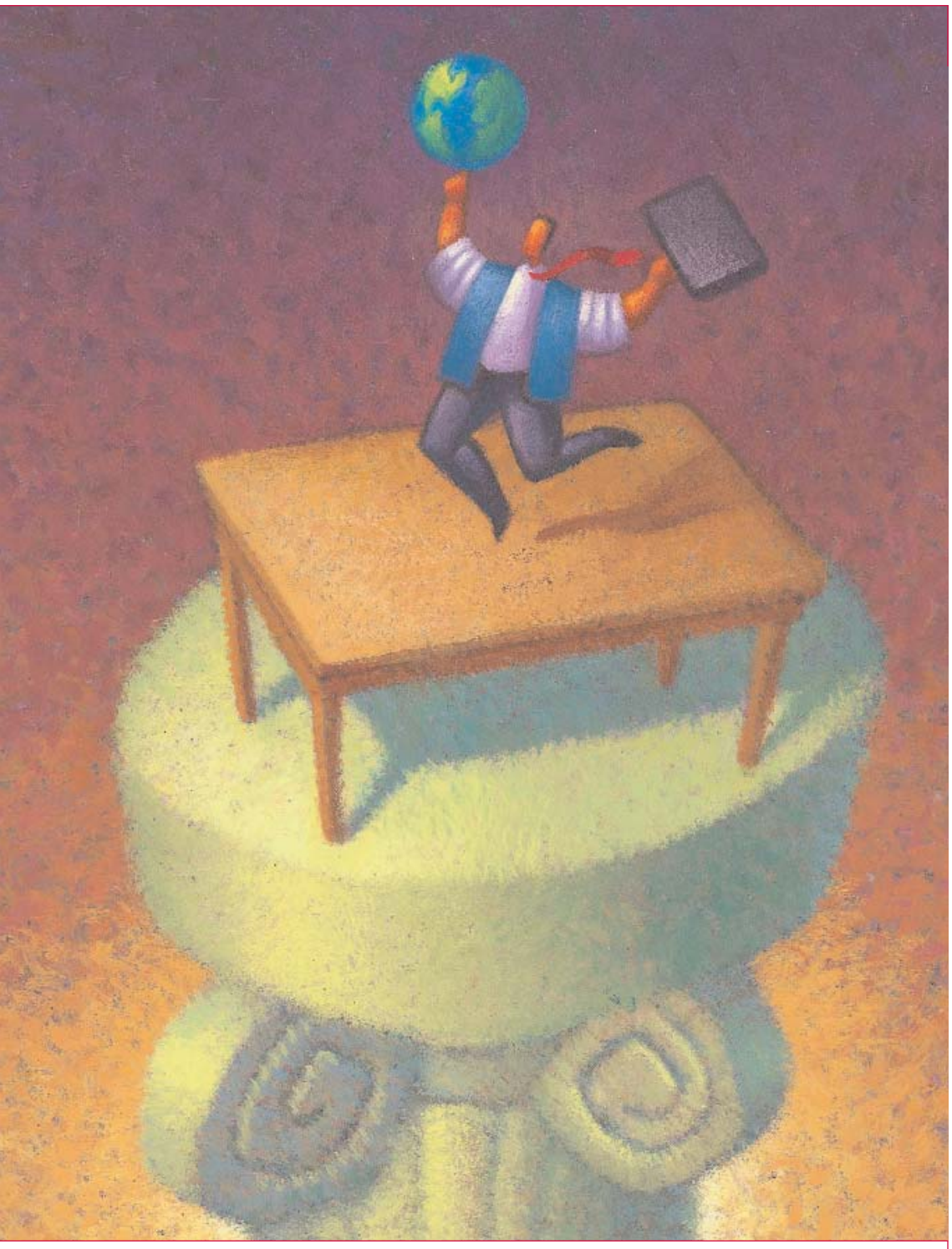
Supporting the Technology
That Supports the Practice of Law



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International Legal Technology Association
Peer Powered

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About ILTA

Providing technology solutions to law firms and law departments gets more complex every day. Connecting with your peers to exchange ideas with those who have "been there, done that" has never been more valuable.

For nearly three decades, the International Legal Technology Association has led the way in sharing knowledge and experience for those faced with challenges in their firms and legal departments. ILTA members come from firms and law departments of all sizes and all areas of practice, all sharing a common need to have access to the latest information about products and support services that impact the legal profession.

ILTA's Statement of Purpose: ILTA is the premier peer networking organization providing information resources to members in order to make technology work for the legal profession.

Editors' Note

"Supporting the Technology That Supports the Practice of Law" brings a mental picture of someone holding up Atlas as he holds up the world. That someone is you, and if Atlas shifts you must either shift with him or shrug. This white paper looks at different ways to help make certain that some of these shifts are easier by offering tools, checklists, suggestions and questions you need to ask.

Our authors tackle a variety of subjects from what you should expect from a vendor in terms of service and support (and what the vendor expects of you), to a process for determining if and how new technology should be introduced. We'll look at how BI can help you stay on plan, how to get your feet wet in virtualization technology and other topics to keep you balanced.

We want to thank our authors for offering their time and expertise so you don't have to shrug, just shift.

Ken Hansen and Randi Mayes, Editors

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Leverage Service and Support from Technology Vendors

by Skip Gould of BrightPlanIT, Inc. and
Debi Young of Omega Legal Systems

We've all heard — or even experienced — the horror stories: A user contacts a vendor's support department describing system crashes when typing rapidly, and the vendor advises the user to "Slow down;" or the firm calls customer support to deal with a problem, and the call is moved to three different customer service representatives, requiring the user to repeat the issue each time. These scenarios have done little to change the perception many firms and law departments hold that a technology vendor generally provides poor service and support.

So it might be surprising to hear that Fitzgerald, Abbott & Beardsley LLP of Oakland, California, is generally pleased with the service and support it receives from its technology vendors, who are relatively responsive and accessible. That wasn't always the case, however. Let's face it, the inhouse or outsourced IT department — the initial point of triage — can't always solve the problem, and you need the support of your technology vendor. Fortunately, if Fitzgerald can't solve the problem itself, its vendors can and do.

Many firms and law departments aren't yet getting the support they should. That might be because they don't yet know exactly what they should expect or what information they need to provide their vendors to get the service and support they need. To begin evaluating a vendor's ability to provide acceptable support, ask the following:

Can you reach your vendor's support desk and speak to a real person?

Do you only have to explain your problem once? Or is your call "bounced" from one customer service representative (CSR) to another and you have to repeat your problem many times?

Does your vendor provide you with acceptable solutions to your problems?

Does your vendor let you know when the solution is available or implemented? Or are you constantly calling the vendor to get the status?

Does your vendor have a standard escalation policy?

If you don't have good responses to these questions, the rest of this article will help determine what support you need and how to get it in order to get the best return-on-investment for your technology purchases.

What Firms and Law Departments Should Expect

What you should expect from your vendor is different from expectations of your inhouse support or contracted outsourced support that may initially "triage" your problem. Inhouse support may be "super users" who are product experts or full-time employees dedicated to supporting your organization's technologies. Outsourced support includes companies or individual consultants who install and take care of your organization's technologies. They may or may not know anything about your vendor's specific product. Typically you would work with your inhouse or outsourced support to troubleshoot the problem first before reporting it to the vendor.

Technology vendors are recognizing that excellent support is fundamental to a successful system implementation and long-

term customer satisfaction. As a result, they offer a range of service and support offerings, such as training, software upgrades, consulting, day-to-day customer support and conversion services.

All of these offerings — as well as minimum/maximum response times, guarantees, etc. — should be outlined and agreed upon in the Master Service Agreement or MSA (otherwise known as the Service Level Agreement or SLA). In this way the firm or law department and its vendor lay the ground rules for how the organization will be supported, including what actions will be taken in the event of a serious disruption.

Your Expectations

Let's cover what you should expect from a quality technology vendor in terms of service and support.

Availability. The SLA should outline how quickly the vendor will respond to the specific issues faced by the organization. For example, an "inoperable" situation, meaning work on a mission-critical application is impossible, should be handled within 24 hours. An "important error," or one that causes the product to function improperly even though the system is still functioning, needs a quick response or a work-around until the problem is permanently resolved. A minor error or cosmetic problem that doesn't impact the smooth operation of a product does not require such immediate response. A week or longer should be expected, and it may never be resolved. After all, what you might consider a cosmetic problem may not be so for other firms or law departments. It will be up to the vendor to decide whether or not to make a product change.

Note that even if you haven't paid for after-hours support at the beginning, you should expect the vendor to be available for emergencies anyway. However, expect to pay additional fees if it has not been contracted.

Experience, Experience, Experience. If the vendor's CSRs don't know their product, even an unlimited level of availability won't help. For example, Jaeckle Fleischmann & Mugel, LLP, of Buffalo, New York, won't purchase software or hire a consulting firm without proof that the technology vendor or consultants have a level of knowledge that greatly exceeds their own. Prior to contracting with a new technology vendor, Jaeckle first validates that the vendor is certified in the products they are supporting and verifies past project references. Vendors passing these criteria are placed on a "short list" and are brought in for one or more technical interviews before a final decision is made. This strategy has definitely paid off.

For example, while Jaeckle's inhouse IT staff were able to perform much of the data conversion when the firm converted its time, billing and accounting software, they needed help with synchronizing client and matter information with their document management system. Jaeckle brought in its technology consulting firm, which employs technology consultants dedicated to the legal industry. The consulting firm quickly developed a software "connector" between the two systems to share client and matter information, and the firm was able to complete the conversion.

In addition to technology expertise, the vendor also needs to have experience in the legal industry. Understanding the legal needs and terms behind each application gives vendors the ability to quickly troubleshoot, integrate, and customize applications and network services. When you're having problems, the last thing you'll want is a legal "newbie" trying to understand and troubleshoot your application at the same time.

To make sure they have the experience required, test them out. Speak to other clients about their experiences. Validate the vendor's certifications and references. Ask the vendor if they have staff with particular experience in legal technology and applications. Make sure to get what you pay for in terms of service, not just the technology.

Empathy. From a client's perspective, the greatest expectation, and the one that most frequently creates disappointment, is that the support team understands a problem — not just mechanically but in terms of its personal meaning to the caller. What appears to the vendor to be a small issue may have multiple implications for the caller: personal stress, accuracy and timeliness of job performance, reputation, ability to serve clientele, pressure from their employer, etc. The vendor that has people on its support team who are capable of being empathetic — listening, understanding, and responding quickly and competently on multiple levels is the most likely to provide the best support service.

It's important for the CSR to listen carefully to what the caller is saying and to look for the meaning behind the question on the professional level, providing a concern for accuracy and an understanding of the sense of pressure and the political ramifications within the caller's office. Thoroughness is the "back end" of the best response — the CSR will "stick like glue" to the problem until the caller is completely and personally satisfied.

Dedicated Project Manager or Technology Account Manager. Speaking of experience, the vendor should offer either a dedicated project manager or a technology account manager

who knows the organization's specific situation and the company's own system. He or she will oversee the system implementation and provide business workflow consulting to ensure you get the most from your product. For ongoing support, many vendors appoint a technology account manager to service the contract directly. That account manager understands how you do business and can serve as the "client advocate" to the vendor.

These managers help keep the firms and law departments on track, further directing questions in ways that help the organizations understand what they need and continuing to offer a critical place to reach out to once they go live.

Maintenance Program. An organization's own internal maintenance program should include technical hardware/software support and software updates and, depending on the technology purchased, scheduled upkeep of networked systems, security policies, backup and virus protection systems so that problems can be prevented as well.

Many organizations think of vendors' maintenance programs as "extended warranties" that include three major areas:

Direct Support — this is the helpdesk or telephone support. Those CSRs are there to help you use the product as it was designed. They may be called upon to help a client determine the best way to create a new report requested by the managing partner and make recommendations to make it as meaningful as possible.

Problem Resolution — the CSRs provide you with a "work around" as a temporary solution when a more permanent solution may take weeks or longer.

Enhancement/Upgrades — the CSR should assist you in implementing new features or upgrades.

Data Conversion Assistance. Key to a proper implementation is a well-coordinated data conversion, especially when it deals with financial data. Before converting a time and billing system, for example, ensure that the vendor has expert programming professionals with extensive experience in converting client/matter demographics, work-in-process (WIP), accounts receivable and billing history information, as well as general ledger balances, accounts payable, conflict of interest and other key data. The vendor should also have direct experience with both the existing system and the new system to which you are converting. Data conversions can be complex processes, and you can expect multiple phases to ensure that all data can be properly converted and tested before going "live" with your new system. You should never be "down" or unable to input and track billable hours during the conversion. Ask questions to make sure you understand your prospective vendor's conversion process thoroughly.

Disaster Recovery (DR) Assistance. Every business and organization should prepare for a serious incident that can prevent it from continuing normal operations. This can happen any time. Losing electronic data from e-mail, document management or billing systems might be catastrophic if there's no disaster recovery plan in place.

Expect the technology vendors to help, especially if the firm is small with only one site. Work with the vendor to establish a plan, know where the data is stored and how to get to it. Many vendors can assist with automated failover of systems used for external communication, such as electronic mail and websites. Some vendors can also help in architecting DR solutions for internal applications such as billing, accounting, document management and case management. Businesses with multiple sites can have applications failover to another site, for example, if one application's main system goes down. A good disaster recovery plan should be developed and tested in coordination with your IT staff and technology vendors.

Training/Knowledge Transfer. You should expect quality and comprehensive training tailored specifically to the way your organization works. Vendors can conduct courses onsite or through instructor-led and fully interactive, Web-based training. It should all be geared toward transferring knowledge from the vendor to the IT staff so they can better understand how the system functions and how to conduct basic troubleshooting.

Consulting Services. Vendors or consulting firms have programs designed to help their clients maximize their technology investment. They can evaluate how an organization is using the various systems and help them streamline the process to make them bigger, stronger and more aggressive, as required. This evaluation can take place as part of the organization's initial purchasing process or as a separate project to help better take advantage of the technology.

Reasonable Pricing. In evaluating a vendor, quality and experience should be weighed first with cost as a secondary consideration. Much like the legal services billed by a firm to its clients, firms should expect to pay more for experienced legal technology professionals, faster response times and more personalized service. Often technology vendors will offer a number of billing alternatives, such as a services retainer or service contract, that can reduce the normal billing rates in exchange for an upfront commitment from the organization.

Software maintenance is typically 20 to 22 percent per year, paid in advance. Hardware maintenance can be between 15 and 18 percent annually. For expanded coverage expect to pay 5 to 10 percent or more per year. These percentages represent percentages of the original purchase price. Vendors provide a set number of hours per month of telephone service. Most have a "use it or lose it" approach, where if you don't use those support hours that month, you start all over the next month. Some vendors give you a fixed number of support hours per year that can be used all at once or spread throughout the maintenance year.

Punctuality. In a team environment, if one member is late another piece of the project may be delayed, ultimately pushing the delivery date back. Keeping on track with open communication can avoid delays and accommodate shifts. Most of all, the vendor needs to be punctual. If the vendor can't deliver, they shouldn't commit.

Enthusiasm. A vendor should enjoy what they do and that enthusiasm should reflect in their interactions with their clients. They should take pride in leaving the system in better shape than when they found it. Their highest objective should be to make their clients successful — and you should expect a positive attitude.

You Have Responsibilities, Too

A successful relationship with a technology vendor requires a true symbiotic "partnership." Service and support aren't one-way streets. Getting what you need from your technology vendor requires you to provide the vendor with some things as well. Let's discuss what the vendor might require from you.

Be Ready to Understand the Vendor's Support System. IT managers need to learn the vendor's support system. Trying to "short-circuit" the vendor's process often leads to situations where your problem falls into a "process crack." Your vendor provides you with escalation procedures — follow them.

Ask the Right Questions. Make sure you understand the services and support the vendor offers. When you purchase a product you are also purchasing the vendor's ability to maintain and update that product. When you check a vendor's references, ask the referring law firm about the company's ability to support its product.

Use Management Influence Sparingly. There are times when an emergency occurs and management on both sides of the fence needs to get involved. This solution is generally very stressful for everyone and should be used sparingly. Don't cry wolf.

"Reward While Sweat Is Still on the Brow." (Ross Perot). If a technology vendor assisted in a smooth upgrade or resolved a situation quickly, be sure to pay on time and give written or verbal praise. An appreciated vendor will go the extra mile when necessary.

Be Patient. If you have a minor problem it might take several days for a vendor to respond. An urgent "inoperable" problem that prohibits you from using the software for the intended purpose should be answered within the day. In any case, the vendor will solve the problem as soon as possible. They might never fix a cosmetic problem; or, if they have developed a product that meets the needs of the entire market but doesn't work exactly as you would like it to, it might not be what the vendor would consider a "problem." Also, don't expect fast response time from your vendor if you're not willing to be available to answer questions about the issue.

Provide Detailed Information When Reporting a Problem. Your vendor cannot help you resolve an issue if you report "it just isn't working." Try to remember your steps before you encountered a problem, and report those steps to your CSR. If you can recreate the problem and cause the failure deliberately, that is of tremendous value to the vendor. The more information the vendor has about the problem and the circumstances surrounding it, the faster they can help you.

Expect Changes. Changes occur, especially during the implementation phase as you better understand the underpinnings of the product. If you cannot adequately plan, be realistic and expect to pay for changes and revisions that crop up as a result of the project. If possible, negotiate a reasonable charge in advance that will be mutually acceptable to both.

Get Trained. Take the time to get sufficiently trained on the new technology — this will save valuable time in the future. You pay more in support calls if you're poorly trained.

Get to Know Them. To help eliminate the "blame-game," learn about your vendors. Building a relationship at some level will make the vendor an even stronger advocate for you and your organization.

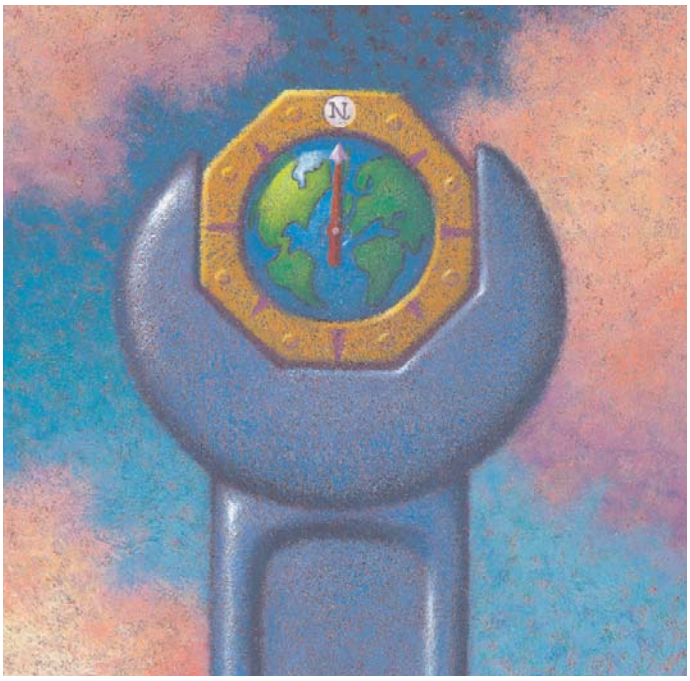
Conclusion

The more firms and law departments can work together as partners with their technology vendors, the easier it will be for the organization to get what it wants — and needs — from its vendors. This in turn will enable them to best take advantage of its technology investment. If you need more from your vendors now, talk to them; revise the maintenance agreement; ask more questions; better train your team; work together. A little investment now will ensure a larger return on that investment in the future.

Don't Support the Practice of Law —

Support the Business of Practicing Law

by Joseph L. Fousek of Quarles & Brady LLP



How many times has a senior partner returned from a business trip where he saw the latest widget software that will revolutionize his law practice? How many times has one of the partners down the hall told you that the firm's standard application set doesn't fit her needs (yet the program suite she used at her last firm was required)? How many firms have implemented a "knowledge management" tool because many attorneys have difficulties searching the document management system?

For mechanical engineers in a manufacturing environment, the tool makers are the most important people to befriend. Otherwise, the tool makers would make exactly what the engineers asked for rather than what they need. In many law firms and corporate legal departments, the IT department is viewed as a support entity. Few organizations view IT as a strategic arm of the business. At Quarles & Brady, the IT team is focused on the firm's business needs rather than requests from individuals or small groups.

So do we walk into the senior partner's office and tell him that we do not believe his request is in line with the firm's business objectives? Certainly not. Rather, we have a process that allows us to step back from the request to understand the business need. Then we work in concert with the attorney or practice group to find the best way to meet the business need or provide upper management with enough information to tell us that the level of need does not warrant the requested money or people resources. In a nutshell, we have created the technical business analysis.

Blind Acceptance?

Why would any attorney accept someone from IT questioning the validity of a request/demand? This is actually easier than you might think. When a request for a new software package comes to IT, the request is assigned to the appropriate practice group technology liaison (PGTL), a strategic IT staff member who understands IT as well as the basics of the legal practice. The PGTL communicates with the requestor and the practice group leader, telling them, "Instead of just buying something for you that may or may not meet your expectations or function as promised, I would like to devote some time to truly understand your business needs in this area. I will then research the product you have requested as well as other products on the market to find the best business solution for you and your group to meet or exceed your expectations." Well, who wouldn't want that?!?! As long as IT can do it quickly enough, the group will appreciate the honest attention to their business needs.

Let's Get Started

It all starts with the opportunity evaluation. The opportunity evaluation phase seeks to find out what problem we are actually trying to solve or, in some cases, what competitive advantage we are trying to gain. We created a form for the PGTL and requestor documenting:

What is the problem or opportunity?

Is it the short-term problem or systemic issue?

Who are the people affected?

What are the deadlines for resolution?

Is resolving the issue in line with firm, practice group or IT strategic goals?

What is the impact on attorney productivity and revenue generation?

Is there money allocated in the approved budget?

Who are the champions and key personnel?

It takes very little time or effort to document the parameters of the request in this fashion. Once we frame the request within the view of strategic impact, most of the demands for a system that does essentially the same thing as the system we already own, as well as the ill-conceived requests for the latest widget, are retracted. With this information IT management can either approve continuation of the technical business analysis or seek approval/rejection from upper management.

If the analysis is approved we move on to the workflow analysis phase to see how the group is currently functioning with their tools and what workflow changes they would like to see with new tools. Understanding the flow of information from beginning to end is critical to understanding their business challenges. We often find that the request for new technology is actually driven by frustrations over poor manual processes. Sometimes a simple process change will eliminate the need for expensive technology.

Once you understand the opportunity along with the current and desired workflow, you have the information you need to sit down with key personnel in the practice group to create a list of requirements for any potential solution. This requirements list will be a critical measuring stick for analyzing potential solutions.

The requirements list will lead you to the solutions assessment phase of the analysis. This is the time to survey the landscape for technical or non-technical solutions already available inhouse or on the market to meet the business need. This is a great time to search the ILTA listserv archives (a wealth of information about all things technical and legal) or post a "What is your firm using for . . ." question on one of the listservs. The attorneys in your firm don't need to know that you are plugged in to the greatest collection of legal technology minds in the world. They can just think you are brilliant for coming up with a list of excellent solutions to their problem.

Let's Cross-Examine

When you take your requirements list and cross it with the list of potential solutions, you have created the initial decision matrix. With some additional light research and discussions with key personnel in the practice group, the decision matrix can usually flesh-out two to four cream-of-the-crop solutions to create the short list. The short list is the small group of solutions that you will take to the in-depth analysis phase of the evaluation.

Before you begin the in-depth analysis phase, you need to get your short list approved by the IT management team. The IT management team often has ideas about additional avenues for solving the problem (a new short list item) or reasons why one of your short list items really should not be considered further. It is important to involve IT management in the process to give them fair warning of a potential upcoming project. It also gives them the opportunity to express concerns over potential hurdles to implementing some solutions. This "incremental buy-in" process keeps IT management and key personnel in the practice group from being surprised.

Let's Shorten the List

Now you have a short list for the in-depth analysis phase of the process. The first part of that analysis should be the in-depth technical evaluation, reviewed by your senior engineering staff. Have you ever selected a new product, purchased it, given it to the engineers for installation and watched a riot ensue? Good IT technical engineers have many reasons why nearly every product is poorly architected. Our senior engineering staff created a survey tool to ask all the important questions for their evaluation of products. We send the technical evaluation form to every potential vendor. Once the forms are returned, the engineering staff reviews the information and provides a technical evaluation report covering all short list possibilities. This provides additional incremental buy-in from the senior technical staff.

During the in-depth analysis phase we also run a Dun & Bradstreet Business Information Report on the vendor companies to help ensure we are not jumping on a sinking ship. We conduct vendor demonstrations for the evaluation team, we check references and we spend time with key personnel from the practice group to further flesh out the decision matrix. We analyze the full cost for a solution including hardware, software, data conversion, annual maintenance, training and support. We evaluate the IT and non-IT resource requirements for undertaking the solution as a project.

As you can probably see, it is important to try to keep your short list at two to four potential solutions. You cannot perform in-depth analysis, including full research, demos, reference checks, etc., on a hundred solutions. Think of it as filling a staff position — many resumes get reviewed, several may get an initial interview, but only a few are generally interviewed by several people and reference-checked.

Let's Look at the Paperwork

By the time you conclude your in-depth analysis, you have a whole lot of paperwork that documents:

An understanding from IT management on what is acceptable to them

Advice from your senior IT engineering staff

A full analysis of the vendors and their proposed solutions

Most importantly you have key personnel from the practice group with a keen understanding of their business needs and the universe of solutions to meet those needs.

This understanding leads to the combined IT and practice group selection of a solution in the final recommendations phase. Someone, or in many cases many people, needs to approve moving forward with the project. The main product of the final recommendations phase is an executive summary of the recommendations covering:

A revised problem statement (revised since you know much more about the problem than you did in the initial opportunity evaluation phase)

The product/path of choice from the evaluation group

A summary of the rationale for the choice

Risks in proceeding or not proceeding with a solution

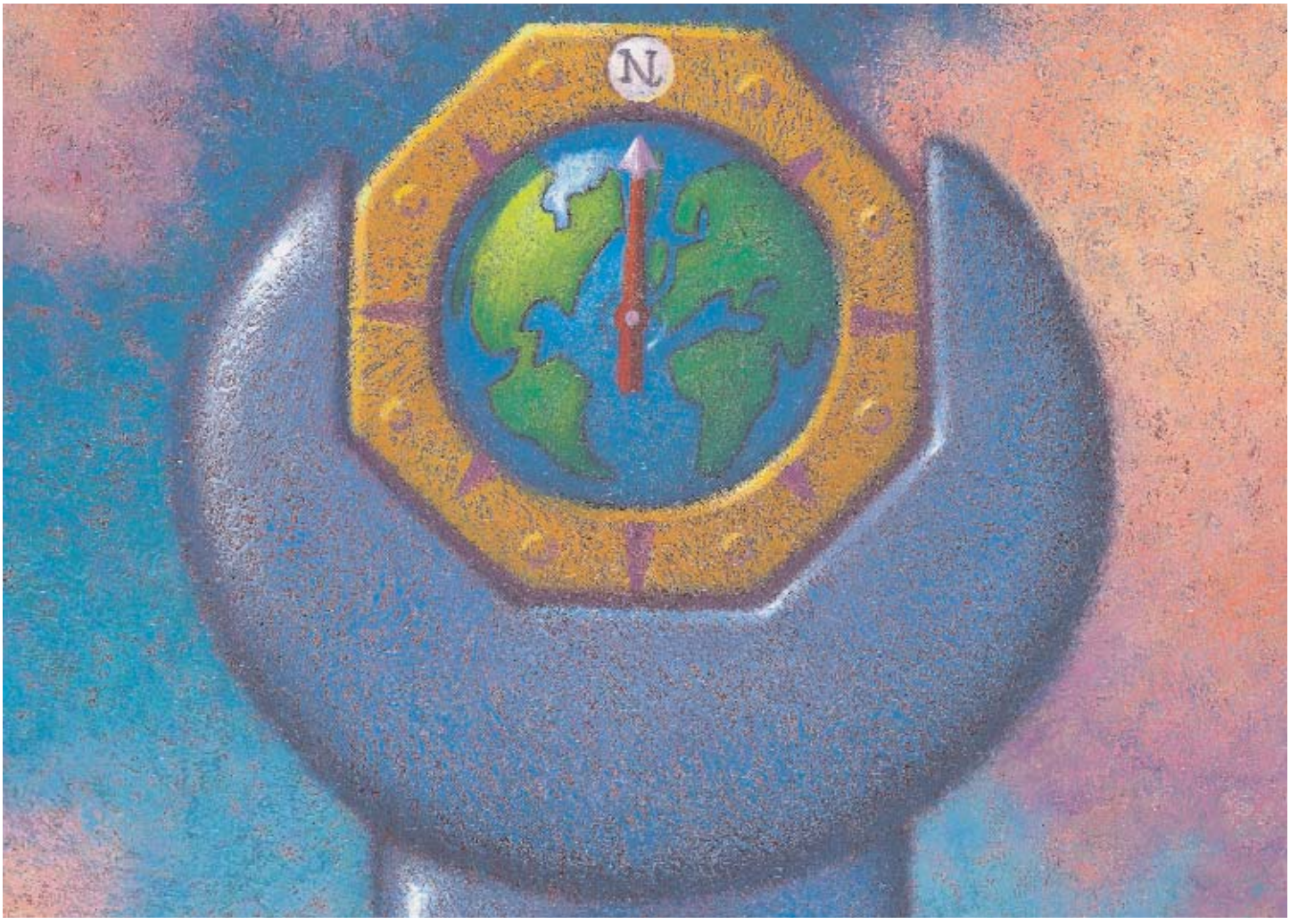
Full cost analysis from the in-depth analysis of the solution

This executive summary gets attached to all of the supporting documentation from the other phases of the technical business analysis and submitted to the approval channels. Firm management can then understand the issues, evaluate the implications of approving or denying resources for the project and review the entire decision process if they so choose.

As an added bonus, if the project is approved, your project managers or project management office will have all the information they need to schedule resources and begin a project plan.

Let's Wrap it Up

A new dawn of peace will befall your practice groups and firm leadership, and IT will be viewed as the best strategic business partner an attorney could ask for. That's my theory, and I'm sticking to it!



The Value Proposition of the Business Analyst Role

by Juliet Alters, PMP of O'Melveny & Myers LLP

A universal challenge of IT is requests coming from stakeholders with a clear vision of what business challenges need to be met but with limited definition and clarity of requirements. By no means should this be considered a fault of the stakeholders — they are simply wanting to collaborate with IT (their technology partners) to find good solutions to their business issues.

How can IT create win-win solutions that satisfy the needs of the business units (BUs) as well as sustain and support the requirements of IT? A significant part of the answer lies in having staff who serve as liaisons between IT and BUs, who are able to translate business requirements into technical system requirements. They are known as business analysts (BAs) or business system analysts (BSAs), and they are members of functional and project teams.

The role of the BA and BSA is not new and has been in industries such as manufacturing, banking and insurance for many years. Yet the BA role is not one that is common in the legal industry. However, the need for skillful BAs is being recognized, and larger firms are establishing the BA role or are contemplating it.

Essential Functions of a Business Analyst

MIT published a white paper, *IT Competency Model Draft*, dated September 3, 1996, that provides justification for the role of the business analyst and defines the BA's essential functions. The value proposition MIT put forth is that business analysts add value by identifying and defining opportunities to simplify or improve administrative processes using IT solutions. Business analysts serve on joint IT and customer teams to evaluate impact, return and costs presented by work process improvement opportunities. They participate in business planning, needs analysis and business risk assessment. They also lead process redesign and consult with their customers or clients on how to best support their area through effective technology use.

At O'Melveny & Myers we established a business analyst role to meet the need for on-time delivery of software projects with quality. We adopted MIT's competency model, and the business analysts report to IT, fulfilling the following functions:

Facilitate Communication Between Stakeholders in Business Units and IT. The business analyst provides an open channel for communication among business and IT staff. They understand both technology challenges and business challenges and can bridge the gap of understanding and communication among technologists and business people. By business, we mean partners, teams from practice support, client development, talent, finance, etc.

Recommend Areas Where Technology Could Improve Work Process and/or Work Environment. It is as important for us to know when *not* to initiate a technology project as it is to know when to initiate a technology project. By skillful data gathering, thoughtful questioning and analysis of business challenges, a BA is able to help assess whether technology should be applied to solve a business problem. In the process of evaluation, a business analyst may find that slight modifications to existing business process workflow can improve efficiencies dramatically without ever applying technology, which is often an inherently cheaper solution.

Gather Business Requirements and Translate Them into System Requirements. Once an assessment has been made that a project ought to be initiated, gathering requirements is the next big step. Several vendors provide tools to help business analysts document requirements and use cases with traceability. My personal opinion is that, although these tools are very useful, they (a) have a steep learning curve; (b) are expensive to purchase; and (c) are not a substitute for good old-fashioned curiosity about business processes and the desire to implement process improvement.

Organize Joint Application Design (JAD) Sessions with Business Units and Development Teams. In today's business climate you can no longer afford project lifecycles that span

multiple years without yielding results. Business requirements change rapidly and require agility on IT's part. JAD sessions bring together the business and IT staff to design applications that make sense for the business. The business end users are engaged and vested in the system that will be built for their use. By using iterative rather than sequential waterfall methodologies, business analysts can help facilitate delivery of features and functions in a phased and timely approach to meet business needs faster.

Provide Expertise in Process Modeling Techniques. Business analysts need to be or become expert in facilitating process mapping sessions with business units. It takes skill to ask the appropriate questions to clarify business processes. The BA must be able to drill down to the detailed specifics of a process and also be able to see the business process holistically in order to uncover opportunities for improvement. It takes practice and training to become good at process mapping.

Assist the Business Unit Project Manager to Resolve Change Management Issues. Collaboration with the business unit project manager (BUPM), who has ultimate accountability for the success of the project, is key to the successful relationship between IT and the business units. It is the business analyst who provides the information to alert the BUPM of "scope creep" (the natural process by which clients discover what they really want) and other change management issues. It is the BUPM who ultimately makes decisions on curtailing scope creep, phasing projects or accepting additional enhancement requests.

BAs Provide End-to-End IT Project Management. BAs are engaged from project initiation through project implementation and also provide and coordinate post-implementation support. They have accountability for managing IT tasks and resources while working in concert with the BUPM. They have the additional challenge of working with resources that report to other functional managers and therefore must manage expectations all around.

BAs Provide Testing Services and Certification. Specifically at O'Melveny & Myers, the BAs are also responsible for interoperability testing and certification of software running on our network. This is a key step in our overall change management process as no software is deployed in the enterprise until the BAs have provided interoperability certification. The rationale of having the BAs provide certification is that they are the ones most intimately familiar with the business requirements, and therefore they are in the best position to ensure that the software meets business requirements. Additionally, the business analyst further coordinates user acceptance testing with the BUPM before any deployments are done.

Profile of a Business Analyst

Business analysts can come from various backgrounds. Some have nontechnical backgrounds but are detail oriented and are excellent writers and communicators who have the skill to translate business needs into system requirements. Others come from a technology development background. This is an asset because they can speak the language of developers and know what key pieces of information should be in the system requirements so the developers can implement robust systems.

Career Pathing for a Business Analyst

In 2004, we made the determination to change the former Level 3 Application Support and Quality Assurance staff to the Business Analyst team. One of the great benefits was the BA role providing a well-defined career track for people, something that did not exist previously in the organization. An additional benefit to people who are business analysts is that the role is interchangeable. You can be a productive BA in any industry as best practices for requirements gathering and project management are consistent throughout.

As we look across all industries today, there is clear recognition of the importance of having good project managers who can successfully manage the contraints of cost, resources, quality and time. Project manager and business analyst job openings cite more and more frequently that the Project Management Profession (PMP) designation is a plus for any applicant. One of the reasons for this is that those who have the PMP designation understand that successful project management goes beyond managing cost, resources and time. They also take into consideration two additional attributes that are vital to success: risk and quality management. The PMP designation is a goal of all business analysts at O'Melveny & Myers, and it represents the continual "raising of the bar" we strive for in our quest for continuous process improvement in delivering on time with quality.

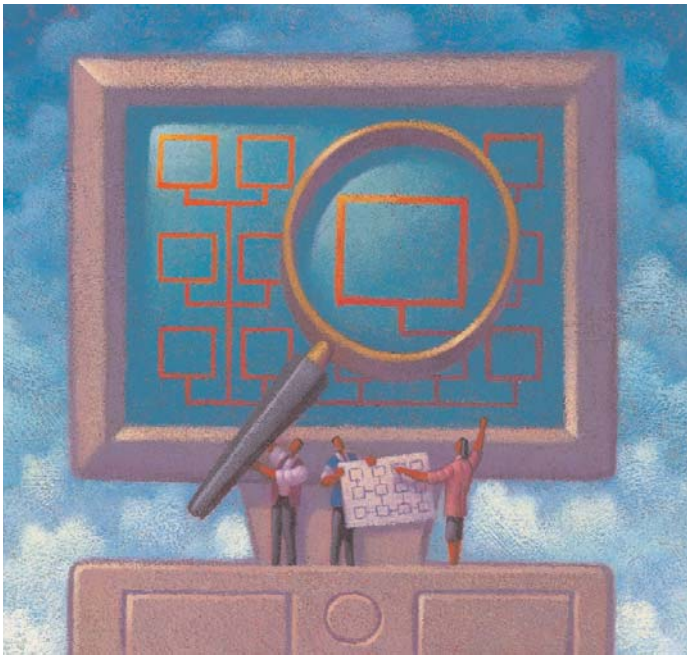
Are You Business Analyst Material?

The business analyst role is not well-suited to everyone and is quite challenging. It requires both detailed analytical skills as well as "big picture" holistic thinking along with a fundamental understanding of technology. In our own experience several people have opted out, but the remaining BAs are enthusiastic in their new role, are highly engaged and fully functioning. As the BAs have gained skills in areas such as project management, scope management and meeting management, several have had their "Aha!" moments and remarked how they now see true growth opportunities in their career. This is important to us as an organization in that we want to retain talented people by providing stimulating and challenging work.

Mining for Gold

Stay on Plan with Business Intelligence

by John Alber of Bryan Cave LLP



What is the straightest path to developing a thriving, robust law firm business? Rainmakers in droves, right? Or a mission statement that's been labored over and polished to a positive sheen? That will surely do it. "We are your law firm. Period." Impressive, isn't it? Clients should throng to that!

Lots of businesses have learned that you can have the best sales force in the world, but sell the wrong thing and stagnate. And it's surprising how many businesses, law firms included, try to coalesce around nothing but a slogan.

At the risk of sounding like a football coach, however, I want to suggest that every business, including law firms, needs to first address the fundamentals. A firm needs two things to succeed: a highly focused and well-informed plan for growth and a means for telling the decision makers of the firm — the front-line lawyers who make key pricing and staffing decisions every day — whether their decisions advance the plan or set it back.

I am going to treat the second half of that proposition. How do you gather the information you need to run your business according to its plan? As simple as that question is, there is an enormous amount of confusion about the answer. On one hand, some firms believe that you have to spend tens of millions of pounds (pounds is a hint) on an Enterprise Resource Planning (ERP) system such as SAP or Oracle to gather the information you need. On the other hand, some accounting system vendors want you to believe that the latest bolt-on to their twenty year-old platform will transform a sow's ear into . . . well, you get it.

I'm here to tell you that you needn't spend millions to acquire the concentrated business intelligence (BI) that will help you stay on plan. My own firm, Bryan Cave, initially built its own BI suite from scratch, and our Financial Dashboard is transforming our ability to stay on plan. Lawyers who use it are already far more profitable than before. We are learning what business helps us thrive and what does not.

However, you no longer need to build from scratch. Today there are advanced tools to help you, and my own firm is adopting those tools so that we can concentrate on business rather than on software.

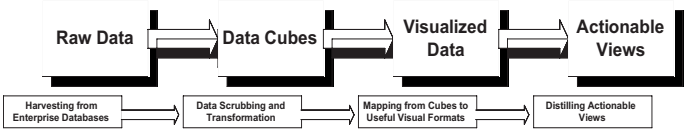
The Essentials

Delivering BI that will shape or reshape your firm, however, involves far more than simply buying software. Business intelligence software must produce information that meets three criteria; it must be assimilated, interpreted and distilled into actionable information.

There are many products on the market that do not meet these criteria. It is also possible to implement perfectly good software in a way that produces a useless jumble of information. In order to give you a sense of a process that works, I will describe how my own firm assimilates, interprets and distills its business intelligence.

The Concise Diagram That Says It All

The following diagram illustrates our own process, which moves from dispersed, raw data to true business intelligence.



Assimilating Data

Data Mining. It is a truism that important business data is "distributed" throughout any business enterprise. Actually, the word used most often is "buried," and that frames an apt metaphor. Just as in mining, where you have to extract and sift the gravel to get a glint of gold, in business you have to

find buried data and assimilate it into some useful structure before you can guide your business. That "data mining" can mean many things. It can mean plumbing the depths of an accounting system to find essential data that is either not reported or not usefully reported. In my own firm's case it meant identifying key information in a number of enterprise systems (Elite, PeopleSoft, LegalKEY, DTE, our intranet and other systems), scrubbing and "rationalizing" that data so that accurate, useful comparisons could be made between disparate data elements, and then bringing all of that clean, rationalized data together into a "data warehouse."

Building a Data Warehouse. A data warehouse is a central, integrated repository of data from multiple, and often transactional, data sources. The data is batch updated and maintained across reporting intervals to preserve data history. Our warehouse data comes from many disparate sources. Before the data can be used, disparities have to be addressed and "rationalized." In our firm, the rationalization process began in the years leading up to the construction of our BI tools. As we implemented or updated various applications, we looked at how the data was structured and made changes, where necessary, to permit us to relate data from one application to that of another. For example, we implemented employee IDs throughout our enterprise applications and transitioned lawyers and staff to that form of identification. As a consequence we can now relate things such as compensation information across systems based on those IDs.

It is not enough to rationalize data in this way, however. It must also be continually "scrubbed" to resolve issues that arise over time. Someone may simply enter data incorrectly. That needs to be caught and corrected before it reaches the warehouse. In this way, as data continues to evolve and change both structurally and with respect to content, we continue to rationalize and scrub it prior to bringing it into the warehouse.

Interpreting Information

Data Cubes. Data brought into a data warehouse may not be — indeed, is probably not — useful in its raw form. Focusing on such detail would be like examining follicles under a microscope to determine whether your hair is combed properly. To be useful, the various data elements must be related to each other in ways that create a whole, if limited, picture. There are various ways of doing this. An Excel table is a means of relating disparate data in two dimensions (*i.e.*, two axes). You can create a picture by marrying just two dimensions, but nowadays, the preferred method of relating and interpreting data elements is to construct a much more extensive and interpretive structure called a "data cube."

Data cubes are "multidimensional" extensions of two-dimensional tables (such as those found in Excel and conventional relational databases). Geometry provides an analogy here. In geometry, we say that a cube is a three-dimensional extension of a square. The phrase "data cube" thus brings to mind a three-dimensional object that is built upon a two-dimensional object. So a cube is a set of similarly structured two-dimensional tables stacked on top of one another in order to facilitate relating data from one or more axes of one table to one or more axes of another table. We say that cubes have "dimensions" and "measures." A dimension is a structural attribute of a cube, which is an organized hierarchy of categories (levels) that describe data in a fact table. These categories typically describe a similar set of members upon which to base an analysis. For example, a firm geography dimension might include levels for country, region, state or province and city. A measure, on the other hand, is a set of values existing in a column in a fact table.

Knowing the Answer in Advance. What use is a cube made up of these multiple dimensions and measures? When you create a cube using an appropriate schema, you can take multiple dimensions, such as billings, collections and profit, and relate them by city, by year, by city and year, by city and practice group and year, and by every other possible combination of key data points.

This is where things get interesting. Because the cube contains all of your essential business data in an aggregated form, it seems to know answers in advance. For example, if a user asks for profit by client and by year, the numbers are already available in the cube. If a user asks for total revenue by practice group and by year, no one has to compile the data; it is answered almost instantly. That is the big advantage of a cube. You can ask any question relating to the elements in the cube and get an answer, usually in seconds. Cubes range in size up to several terabytes, and it is quite common to get answers back from such cubes in one to two seconds. In addition, you can view cube data using any number of front ends, including spreadsheets, Web pages, the Cube Browser in Microsoft SQL Server Analysis Services or graphic data browsers such as Microsoft Data Analyzer.

Distillation

Essential, Directive Information. Some users would stop with a data cube and a simple query tool, such as an Excel pivot table. But merely compiling data and providing flexible access does not create effective BI, notwithstanding that a number of vendors produce products that are little else than a cube and a pivot table. Data has to be transformed into something that is not only meaningful to the business but essential and directive to it. Creating a tool that gives someone access to an almost infinite

array of data combinations may make an analyst happy somewhere, but it will do almost nothing to improve a business. Volumes of data are antithetical to good decision making. An extraordinary amount of distillation is necessary, and that distillation cannot be random.

Extreme Distillation. Our own data cubes are capable of producing an almost limitless array of data. Delivering such a vast store of data to our decision makers (our front-line lawyers), however, would have been a disaster. They would not have known what to do with it, and they would not have used it. Extreme distillation, right down to the half dozen essentials of a firm's business, is the only means by which you will have any impact on the direction of the business.

Starting with the Strategy. How do you find those half dozen essentials? The central determinant of business intelligence has to be the strategy of the business using that intelligence. And that strategy has to be informed and shaped by the intelligence produced by the BI system. If this sounds like something of a loop, it is. Businesses can only focus on a few things, and those things may shift over time as the business recognizes opportunities and mistakes and alters course. It is imperative for BI to be in this loop.

My own firm's experience is instructive in this matter. Long before we began coding our system, we analyzed our strategic plan and emerged with six key performance indicators that would both track and drive the progress of our plan. Those were: contribution to profit per equity partner, leverage (expressed as a ratio of hours), effective rate, realization, billings and collections. And when I say "we" selected these measures, I mean the firm acting at the level of the chairman, the executive committee (our board) and operating group (our executive team). Selecting key performance indicators must occur at that level, because, for such measures to be effective, the firm's leadership must believe in and proselytize on behalf of them.

Iterative Process. The process of selecting our measures was intense and iterative. We would identify some key measures, then try them out with real data. When problems became evident (for example, where a measure created an incentive that we determined was counter to our culture), we altered the measure and tried another iteration. This was an involved but extremely useful and validating process.

Delivering Actionable Intelligence. Having distilled in the manner described above, there is one more task to be undertaken in order to deliver effective BI. You have to provide views of this distilled business information that are not only meaningful to the decision makers to whom they are delivered but are, on their face, actionable. By that I mean the information has to suggest some course of action that is beneficial to the business. To take a personal example, suppose a car pulls up beside you, and its driver gestures wildly at you (scary these days, isn't it?). When you realize he's trying to tell you your fuel fill door is open and your gas cap is flapping in the wind, you've just gotten actionable intelligence. It is reliable information (you check your mirror to verify it) in which you have an interest and that, when discovered, will prompt you to act for your benefit (stopping the car to remedy the problem).

Now, let's apply this rough definition. Consider one bit of business intelligence that many law firms have disseminated for years: realization. Realization is a measure of the degree to which one collects a declared rate. Show lawyers their realization, and they will tend to maximize it (it is, indeed, actionable information). But their actions may not be to the benefit of the firm because their first instinct is to drive up realization by holding down rates. They do that because they have no idea whether a particular rate generates a profit, given the costs of a matter. Actionable information that benefits the business of a law firm results if you couple realization with some measure of profitability. If you show a lawyer that 85 percent realization on a $325 rate is actually profitable, while 100 percent realization on a $250 rate is not, chances are that lawyer will stop trying to drive rates down that far. Moreover, the information becomes actionable on a broader plane as well. The firm as a whole will begin to realize that rules of thumb such as "take no business that generates less than 90% realization" are counterproductive.

When information is assimilated, interpreted and distilled down to strategic and actionable business intelligence, you can begin to make the firm . . . intelligent. That's good business. Period.

Stop Playing with Virtualization Technology

And Start Using It!

by Matthew Berg of Wolf, Greenfield & Sacks, P.C.

Virtualization technology has moved out of the lab and is seeing enterprise use in some demanding production environments. There are compelling reasons you should take notice and consider how virtualization could make your own server environment more efficient and easier to manage.

But First — A Conceptual Overview of Virtualization

Hardware independence is the key to making your servers and the applications that run on them portable and is the essence of what distinguishes a virtual server from a physical one. To achieve hardware independence your servers must be abstracted from any hardware-specific settings (*e.g.*, registry entries, startup files), services (*e.g.*, those installed by Compaq Insight Manager or Dell OpenManage) and drivers (most importantly video/display, mouse/keyboard, NIC and RAID controllers).

There are two basic ways to create a virtual server:

> *Build one from scratch using your operating system of choice (Windows 2003 or Red Hat Linux, for example) inside a virtual environment. Then install and configure your application directly onto the virtual server.*
>
> *Convert an existing server into a virtual server by imaging the server's OS volume, stripping the hardware drivers out of the OS and replacing them with a generic, fixed set of virtual drivers. This latter process can be achieved or facilitated using tools supplied by either the virtual server software vendor or by a growing number of third-party "P to V" (physical to virtual) software applications. With this approach there is almost always some degree of manual cleanup after the fact, as well (*e.g., *to remove or disable the aforementioned services, clean up the registry, startup files, etc.).*

The virtual server itself — whether created from scratch in a virtual environment or converted from an existing, physical machine — needs to be hosted on a virtual host machine. These host servers, in turn, can be configured in one of two basic ways (with some variation depending on the implementation of each vendor's solution):

> *As a service-level application running on top of an existing Windows- or Linux-based operating system; or*
>
> *Using a version of the virtual hosting software that is built on its own locked down and proprietary kernel that installs onto a "bare metal" server.*

The former option has the advantage of being somewhat transparent inasmuch as it is running on top of an industry-standard operating system. It may therefore be more appealing as a known entity for many system administrators. Additionally it will run on any hardware that will support installation of the host operating system. On the other hand, the latter configurations are somewhat of the nature of "black box" offerings that have been validated against very specific hardware platforms. These will either work or not work if properly installed and configured, and there is very little that even an experienced system administrator can do if something goes wrong besides start and stop services and/or startup and shutdown the server. But the trade-off for putting your faith in the developers who created these products is that the proprietary kernels consume about 20-30 percent less system resources than their corresponding Windows- or Linux-based host systems.

Virtualization software is safe enough that all the major players in this space have achieved penetration into Fortune 100 corporations. It is the kernel-based host systems that are installed in a majority of the virtualized production environments at these companies, while the Windows- and Linux-based host systems are seeing use in production only at smaller corporations. Larger corporations typically relegate the Windows- and Linux-based host systems to development environments because of that 20-30 percent hit on performance. So even if the kernels are black boxes, there's enough data and anecdotal evidence to demonstrate that they are also quite reliable.

For staff comfort level and a small savings in software cost, it's certainly an option to size-up the Windows-based host server to a machine with 20-30 percent greater capacity, of course. But the proprietary kernels also have a few other tricks up their sleeves that can make the decision an even harder one. We'll see about one very important trick later when we talk about server maintenance and resource allocation.

Server Consolidation

Reducing server hardware costs and the overhead to support them while simplifying their administration and improving their recoverability.

When a vendor says, "Our application needs its own box," you can answer simply "Okay, you've got it." And the biggest hit you'll take to your overhead is licensing your new server's OS. No need to worry too much about sizing the server hardware that will be required to run the new application (as you'll have a good deal of flexibility in fine-tuning its resources later). No additional hardware maintenance costs; no electricity to power an additional box; no AC to remove the heat generated by that box; and in some cases, there is probably no need to increase your network port count since your virtual host has the flexibility to divvy up the network load any way you choose. You can configure the host server's physical NICs so they act as a pool for any virtual servers to share, or you can allocate NICs individually to any of the virtual servers hosted.

Incidentally, this reduction in server hardware count and associated overhead is at the core of the claim by all leading vendors that you can achieve a full return on your investment that can be measured in months, not years. When you take the soft costs of administration into account, the numbers are even more compelling.

One painless and low-risk way to get your feet wet in virtualization technology is to select and virtualize one of the servers that you find yourself referring to as "standalone" or that performs one isolated function. Good candidates might be:

Apex Connector

Attorney Performance Evaluation Software (e.g., ViDesktop)

Blackberry BES

Intranet

Payroll

Whitehill Bill

These are great examples of applications that do not typically operate under a heavy load or operate under a load only at peak times (*e.g.*, end of month, quarterly, annually). You hate to give them each their own server, and yet you hesitate to install them onto another server that already hosts its own critical business application. Nobody would want to muddy the waters of their server environment by installing Whitehill on their Interwoven server, for example, or ADP on their Elite Time and Billing server. You can understand why vendors want their applications to have dedicated machines: it makes sense to keep the applications separate.

So why not virtualize these applications and run them all from a single host server? Each application gets its own, clean install of your server OS of choice. Because you configure the resources made available for each virtual server hosted, the degraded performance or failure of one virtual server on the host does not affect the performance of any other server hosted on the same box.

Uncomfortable putting too many eggs in one basket? Well, that's certainly a consideration. But another advantage of utilizing virtual servers is that it's a simple matter to restore these servers onto another machine in the event of a host server hardware or OS failure. And it's not necessary that the new host server be the same hardware platform or even that it have remotely the same capacity. For comparable performance, of course, you'd need comparable hardware. But in a pinch, almost any hardware will do if it has a reasonable amount of RAM to share among the virtual servers that will be hosted.

Server Maintenance

Real rollback and flawless system restores. At the extreme: the ability to move a running, production application off one piece of hardware and onto another.

A built-in feature of virtualization software is the ability to take periodic "snapshots" of the virtual server — effectively freezing the system's settings and operating state as they are at the moment of the snapshot. The entire virtual server exists on its host as only a handful of finite files that, when the virtual server is idle, can be copied, moved or backed up at will. Similarly the snapshots exist as standalone files containing incremental differences between the original server's settings and operating state and that of each snapshot.

To roll back the virtual server you simply bring the machine to an idle state, revert to a previous snapshot with a few clicks of the mouse and then bring the machine back online. All of this administration can be done through a single, easy-to-use graphical administration interface. And what's better: it works! Another thing that works — as hard as it might be to believe — is the ability to move a running virtual server from one physical host server to another. It's a neat trick, and if the

application's fault tolerance can sustain a brief outage of what appears to be a network delay of 3-5 seconds, then it works without a hiccup. Amazing, but true. The possibilities of hardware maintenance without service interruption are revealed: upgrading the host server hardware on the fly, moving a virtual server that has been overwhelming an undersized host server to a more robust server, moving to a server with more disk space (if you haven't yet made the transition to a SAN), or moving to one with more RAM or faster NICs.

The catch is that in order to hand off the current system state (including the memory) both physical host servers must be running the aforementioned proprietary kernel. Is that functionality worth the price of a little faith in a black box kernel? I'd say that it is.

When that new vendor who wanted his application to have its own box closes the sale, and it's time for you to provide a server, no problem. There will be very little lead time needed to build and configure a new server for the new application — since you already have a "baseline" copy of the last virtual server you built — complete with all the patches, custom security configuration, tuning, etc. That baseline virtual server, being nothing more than a few files on the host server's file system, can be copied and reused again and again — as often as needed. Your system administrator alone will save hours if not days of configuration and setup time each time he or she is asked to provide a firm-ready server for the latest application or system upgrade. How quickly could your system administrator turn around building a dedicated machine from scratch for a new application in the physical realm?

Test Environments/Test Deployments

"We tested it, but obviously the environments weren't exactly the same." How virtualization takes the sting out of software development, patch application and training.

Hand in hand with the maintenance advantages mentioned above come the advantages in testing. Testing could mean trying out the latest OS patch or the latest point release of application software. It could also mean lab testing new applications that the firm or law department is evaluating or even maintaining training copies of key servers to perform realistic user training on copies of real data.

Need to tinker? Grab a baseline copy of any of your servers and tinker. If you want to tinker with your mail server, grab the copy you made of it the last time it was idle and bring that online in a separate subnet. Not only can you take advantage of the rollback/restore functions mentioned under the section on maintenance but you can work on an exact copy of one of your production servers while the production server continues to do its work for your organization. Complex or environment-sensitive testing can be done in a test environment and when you're confident that it's ready to implement you can either proceed with your upgrade/patch/software change on the live production server or if you're happy with the results just swap the one you used for testing into place and take the other (previously production) virtual server offline. What if something goes wrong that you didn't catch? Bring the old one back online and resume your testing on the one that failed.

Beyond the value in testing changes and updates to your existing servers, any time you find yourself thinking that you wish you had another machine for "x," you've got one. No need to go through the approval process for the hardware, have vendors compete on pricing, order the hardware, wait for it to arrive and then install the OS and patches, and tune and configure the server to meet your firm's standards. You just take an existing baseline virtual server and fire up a new copy — in less than five minutes.

For that type of testing you don't even need a dedicated server to host your virtual machine. There is also a reduced- functionality desktop version of the hosting software that will install on your desktop or laptop providing you with the basic ability to host any virtual server in your environment. By the way, the virtual servers are completely portable between the desktop host, the Windows- or Linux-based server-class host and the proprietary kernel host. You don't have to reconfigure the virtual servers in any way so that they will run on a different class of host. Again, and obviously, the performance of these virtual servers will be limited by the hardware platform that is acting as a host.

Disaster Recovery

Hardware independence and the ability to host multiple servers on a single piece of hardware. How virtualization reduces cost and simplifies the recoverability of your critical servers.

The single biggest challenge of traditional disaster recovery models has been the need to maintain "like hardware" duplicates of the firm's or law department's critical servers. Many large firms made the commitment after September, 2001 — despite the expense — and many still maintain one-to-one backups of their key systems at hosted facilities.

There's nothing wrong with that model. It will provide the opportunity to have one of the fastest recovery time objectives possible, and with minimal effort — if the two machines are in synch. But those extra servers, the solution that keeps the servers synchronized (whether manually accomplished by members of your staff or facilitated by a software or hardware solution in some way) and the off-site hosting facility all add

up to a series of expenses that many firms and law departments have found hard to justify. (This is probably a large reason why only 38 percent of all firms recently surveyed by ILTA have implemented a DR solution.)

Along comes virtualization. Hardware doesn't matter. And because you can run multiple virtual servers on a single physical host server. So how do these key characteristics of virtual servers translate to cost savings? In a DR model the opportunity to reduce cost is even greater than it is on the operational side. In the event of a disaster, it's probably true that while your business would suffer as a result of a prolonged outage, it could likely sustain a period in which the performance of your applications is degraded — so long as the data is available and critical business functions can continue. How long a period? Let's say the time it takes to configure a new server and start spreading the load of your virtual servers onto hardware with a greater capacity. In short, not long at all. When the servers in your environment are virtual they can be brought idle and copied or moved from one physical machine to another with no configuration changes being necessary. Further, as mentioned in the section on maintenance, you could even move the virtual servers while they are running if you are using the proprietary host server.

Future Server Infrastructures: On-Demand Computing

Technological advances such as blade servers and improved SANs continue to be adopted for obvious and practical reasons. But are you tapping their full potential? Large pools of processing power and centralized storage meet up to their promise in virtual server environments where resource allocation and "instant on" provisioning become a reality.

Some of your servers have more headroom than others. "Overbuying" a server to meet its peak demands is a reality we've all had to face. And maybe you've come to accept the underutilization of those servers that only operate under a load during isolated windows of time. But some of your machines are quickly exhausting what headroom they may have had — too quickly, in fact, for your comfort. Virtualization can help you solve both of these challenges at once.

Administrative tools are available for each of the leading virtualization products which provide a single interface allowing you to manage and monitor all of your virtual servers' activities and performance in the context of one another. Beyond checking logs, establishing alerts and connecting to individual system consoles for periodic server maintenance, comes the ability to monitor and reallocate system resources based on operational utilization.

Reallocation of server resources "on-the-fly" is a new reality in a server environment where virtual servers that are running on the same physical host share whatever physical resources are present (most importantly NICs, RAM and CPUs). Is one of your servers not performing as it should? Click on a graphical slider and bump up its available RAM, or allocate a higher percentage of the host server's multiple CPUs. Still not performing? Move the troublesome virtual server, while it is still running, to another physical host that has more resources. Once moved, click and drag the sliders as far to the right as you can — all from a single interface and all with a few clicks of the mouse.

Taken to the next level, if you know that one of your servers undergoes heavy utilization at the end of the month, you can establish performance windows within the management software so that resources are dynamically allocated on a scheduled basis. You can give that time and billing server more RAM and CPU for the first and last few days of the month but then give them back to your mail server or document management server when they aren't needed.

Summary

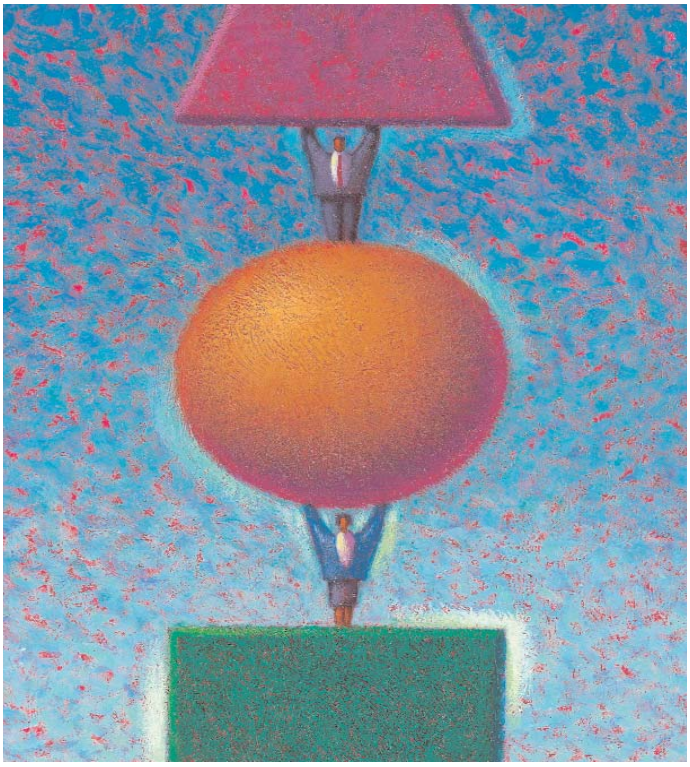
Your server environment is at the core of the technology that supports your practice. Law firms and legal departments are particularly fond of niche applications, but the proliferation of these niche applications effectively creates server sprawl. Historically it has been an unwieldy and resource-intensive management challenge to keep all of these servers functioning properly, up-to-date and working efficiently. Further, since server hardware technology changes so rapidly, it is all but impossible to standardize on a consistent platform — even in an environment of aggressive rolling equipment upgrades. At its core, virtualization technology provides a powerful set of tools that can help ease this challenge by removing the variables introduced by this diversity of hardware platforms and then taking advantage of the portability introduced by hardware independence to achieve even greater flexibility and manageability.

The Players

Dozens of companies are emerging with new products in this space. At present there are three main players: Microsoft with their Virtual Server product line; EMC's VMWare with their VMWorkstation, GSX and ESX platforms; and SWSoft's Virtuozzo VPS Suite. VMWare currently has a majority of all installations, but all three are up and running at Fortune 100 corporations.

Service Oriented Architecture: The Next Wave

by Jesus Ortiz of Thomson Elite



The fast pace of business today requires law firms and legal departments to be agile in order to succeed. Agile means the ability to adapt to changing customer demands and business conditions. The agile organization makes decisions quickly by providing accurate information to its leaders in a timely, meaningful way. Getting timely, meaningful information requires business applications and systems to work together reliably and securely. Service Oriented Architecture (SOA) is the answer.

What Is SOA?

SOA is an approach to configuring software applications as collections of autonomous services that communicate with each other using either simple data passing or two or more services coordinating some activity. This approach maps software components to business processes while promoting reuse across the enterprise and between the enterprise and its partners.

The Vision

Has your law firm or law department needed to make decisions quickly, without all of the necessary information? Has your organization needed to quickly change its business processes and systems to better deal with a new business opportunity or a competitor? You are not alone if you answered "yes" to these questions. Most businesses in general find themselves in similar situations at one time or another.

Often large law firms and law departments use many different systems and applications that all need to work together and exchange data in a reliable and secure manner. Typical applications and processes they might need to integrate include new business, conflict management, case management, records management, time and cost capture, knowledge management, financial management and business intelligence. In order to make decisions and/or change direction quickly to maximize business opportunities, organizations require all of these systems to work optimally: to communicate with each other; to share reliable, current data; and to operate in a secure environment.

What Is an Agile Enterprise?

The vision of an agile enterprise is one of an organization with reliable, secure systems, information and applications that exist in a flexible and loosely coupled architecture. Such an architecture would allow the enterprise to quickly reconfigure and realign its systems and applications. Such an architecture would allow information to be reliable and secure, while permitting the firm to change business processes without having to make large changes to the applications or systems themselves. Additionally, if the architecture were built on open standards that were supported by all the major vendors and applications in the industry, standard interfaces would allow simple and reliable interoperability, while providing a level of immunity to changes in the way those systems operate.

Scenarios

Number 1: What if you could create a matter-centric portal that integrates e-mail and documents that come from Outlook, Hummingbird or Interwoven? What if, from the portal and based on the matter you were working on, you could access practice-specific templates from Thomson West and the matter-related contacts from Interaction or Outlook? What if you had easy access to best practices by matter type from West km? What if, at the touch of a key, you could access records from LegalKEY, Elite Records Manager or MDY? Would it be useful to also provide a client extranet using

Hubbard One? The technology and services exist today to build such a portal.

Number 2: Could you use a Client Briefing Book that integrates client-family information from D&B and Thomson Gale? Would it help to be able to see at a glance client financial history and trends? Could you use market share estimates on your client from FindLaw or Martindale Hubbell? What if you could also see activity by practice group or activity by office? What could you do with relevant client or competitor news from Thomson One or LexisNexis? What could you do with information from FindLaw or Thomson West about a client's use of competitive law firms? Once again the technology and services exist today to build such a composite application.

Number 3: What if, on top of all the integrated information and applications, the architecture allowed you to quickly change your workflow and business processes so that your organization could adapt to changes in your business environment? Are you thinking that this is too good to be true? Much of what is described in these scenarios exists today.

The Problem

Why haven't firms or law departments built the type of applications described in the preceding scenarios? Because the more diverse and distributed the business environment becomes, the harder it gets to reliably and securely exchange data between different systems and applications. Using existing methods and technologies usually requires a series of transformations that involve data mapping exercises, which take time to understand and setup, take time to manage, can lead to massaging of data so that it can be understood by each system and even worse, can lead to loss of data. These transformations will usually require proprietary and custom work to be done.

If one of the applications to be integrated subsequently changes its data model, it might require a modification in each of the transformations that take that data as input. A change to one system can have a significant impact on your business. At a minimum, all transformations will need to be evaluated to make sure you understand the impact of the data change. Once the impact is understood, the transformations will need to be updated and tested. An upgrade to all system transformations will need to be scheduled to occur at appropriate intervals. This exercise can lead to many problems if not handled carefully. If the change to the data is made and released without verifying or changing all other systems, you could end up with systems that no longer have consistent and reliable data, or even worse, systems that have corrupted data. These types of new changes will take valuable time away from your IT resources and will take time to roll out.

Data transformations could also lead to security issues — you might need to store user IDs and passwords in each system or in another central location in order to allow one system to update another one. This makes it more difficult to manage the security of the network and applications. Changing user IDs or passwords in one system will cause changes to the other systems if they are storing such information.

The problem gets worse if the organization does not control all of the systems and applications. If an application out of your control changes, you may not find out until the change starts to impact your business. Finally, these transformations may occur at scheduled times (once a day or worse), which makes it difficult to make real-time business decisions.

How Can SOA Serve Me?

Using services, your routines can be reused by other programs including external programs written by partner companies, and integration with everything is easier;

Your individual software assets become building blocks that can be used in developing other applications;

You can communicate with all business partners using just one universal set of protocols, documents and business processes;

You have the ability to change components without creating problems in other applications;

You can respond to changing business conditions in a fast, flexible manner; and

You see tremendous ROI through reuse, agility and shortened application development time.

Agile Businesses Use Service Oriented Architecture

Most law firms and legal departments have a set of business applications that have been developed to address specific business needs. They tend to be complex and are often inflexible. The silos of information used by these applications are sometimes connected through hard-coded interfaces, transformations or point-to-point connections. Such connections can render firms unable to quickly use and reuse their existing assets. SOA allows organizations to address this problem.

SOA is an application development architecture that maps software assets to business processes while promoting reuse across an enterprise and between an enterprise and its partners. The "services" in SOA are processes, tasks and software assets that expose their functionality as services so that companies can link these services together to implement new and flexible business processes. The services become reusable and can be

supplied or consumed by many. SOA allows companies to create loosely coupled systems where connectivity and functionality are separated.

SOA is based on a set of industry standards that are supported and endorsed by major software vendors in the industry. The standards define ways of representing and interacting with software assets. The individual software assets can be combined to create new applications out of existing components or to interact with applications outside the organization.

Services communicate with each other using only standard messages. The services are completely abstracted from each other; all they have in common is the use of standard protocols. A series of technologies and standards enable SOA, with one of the basic enablers being Web Services.

Web Services Enable SOA

Web Services are standardized interfaces based on Internet Protocols (HTTP, FTP, etc.) that are separate from the internal operations of the service. The interfaces do not change the functionality of the service. Web Services are implemented using a collection of standard technologies — XML, SOAP, WSDL and UDDI. These technologies are the building blocks for creating Web Services, which can then be combined to create business solutions.

eXtensible Markup Language (XML) is heavily used for exchanging data between systems. It is a widely used system for defining data formats. XML provides a rich system to define complex documents and data structures such as invoices, molecular data, news feeds, glossaries, inventory descriptions, real estate properties, etc. As long as a programmer has the XML definition for a collection of data (often called a "schema"), a program can be created to reliably process any data formatted according to those rules.

Simple Object Access Protocol (SOAP) is the messaging standard used to exchange messages between Web Services. SOAP is an XML-based lightweight protocol used for exchanging data and information in a distributed environment.

Web Services Description Language (WSDL) is used to describe the Web Service interfaces. WSDL is an XML-based grammar for describing abstractly the operations and messages that are accepted and/or generated by each Web Service. WSDL is extensible to allow for future description of operations and messages regardless of the protocols and data formats used.

Universal Description, Discovery and Integration (UDDI) provides a directory of Web Services that are available. UDDI provides a standard format by which each Web Service describes itself and the methods by which it conducts transactions.

SOA Implementation Advice

When implementing an SOA, most organizations will start with simpler solutions like data integration and shared internal services. As their maturity with SOA increases, they will start tackling more sophisticated business processes. Companies that realize the benefits of SOA will have a competitive edge. Firms and law departments should begin to think about the type of services that they have or can create. The goal is to create a series of common services that can be reused to create new and improved business processes.

Many vendors provide tools for building Web Services and SOA (*e.g.*, Microsoft, IBM, TIBCO, etc.). Many of the application vendors provide ready-made Web Services and interfaces that could be used as starting blocks. The Web Services provide functionality to address operations and entities like batch loads, timekeepers, clients, matters, timecards, proforma, vendors, AP, general journal and more. These services, other third party services and some that your company builds, will allow you to begin building composite applications.

Growing Industry Standards

Companies have realized that a robust set of standards that allow interoperation will increase the acceptance of SOA and Web Services, resulting in significant activity around expanding standards to cover more and more areas. The largest companies in the world are involved in the standardization process.

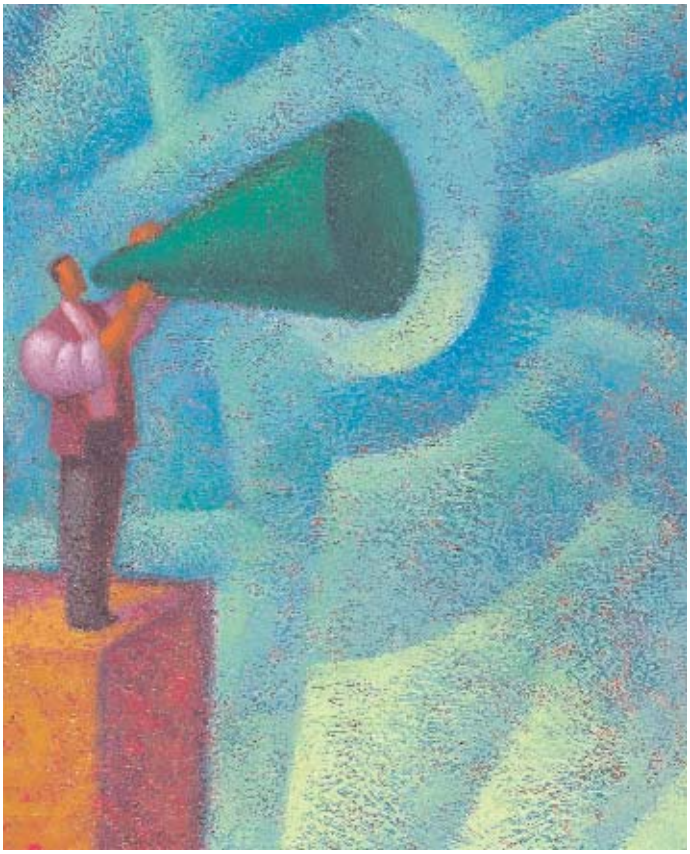
Multiple organizations have formed to help increase the number of accepted standards in areas like security, transactions and orchestration. Some of these organizations include the W3C, Organization for Advancement of Structured Information Standards (OASIS), Liberty Alliance and the Web Services Interoperability Organization (WS-I).

The Future

Business will drive the strategic adoption of SOA. It's a matter of when, not if. Your firm or law department should look at its business processes, practices, applications and systems. Look at both internal and external processes and functions. Verify that your vendors and partners will support SOA and then determine how you want to proceed. Take the methodical approach — one system/application at a time or the "big bang approach," all at once. There are many tools and services available to help you get started. Chose to be agile . . . and successful.

Understanding Digital Dictation and Speech Recognition

by Bob Yacovitch, Ph.D. of Crescendo Systems Corp.



While law firms and law departments are adopting digital dictation and speech recognition in a bid to improve documentation workflow and cut costs, choosing a vendor from among the current frenzy is far from easy. Although you don't necessarily have to be IT savvy to invest wisely in new technology, the following questions regarding dictation technology should be asked before making a final decision.

Technology Questions

"Should our digital dictation solution include speech recognition?" The digital dictation system (DDS) is the most important ingredient in the mix. It is the central beam that supports everything else, from voice control to workflow management. In a DDS scenario the dictation is routed to the transcriptionist. The transcribed report is then sent back to the author for approval before it can be distributed to all appropriate recipients within the company. Giant steps can therefore be achieved with a single DDS, provided high-level routing management is offered.

Speech recognition is an optional module you can add to your DDS at any time. Thanks to the speech recognition engine, the DDS has the ability to produce a "recognized text" together with the voice file. This draft report simply needs to be corrected instead of being fully transcribed. Speech recognition can turn document creation from "fast" into "light speed," though it is not necessarily justified for all business environments. Factors such as workflow complexity and the number of dictating authors play into the overall ROI (return on investment), hence the need to investigate what can be achieved in terms of workflow management with a single DDS before even considering the speech recognition path.

"Describe your workflow management." As your business grows, its processes are likely to become more complex. When investigating different vendors, have them focus on your business requirements and demand a customized DDS that adapts to your specific needs.

Each business is unique. First things first; your vendor should make a point to precisely understand your IT infrastructure and processes. If your business has more than 15 authors, avoid anything that sounds like a "ready-to-install" digital dictation kit. It might work for simple letters and memos, but will it work for affidavits, employment contracts or tenancy agreements? Does it allow you to work where, when and how you want — in the office, on the move, on a notebook or with a Pocket PC? Does it support transfer of dictation over a network?

Integration is key. A DDS solution that is integrated with your case management system allows you to dictate directly into a client's file, automatically importing relevant client data into the dictation. Misfiling dictation becomes a thing of the past. You can even define the formatting and document types so that your transcriptionist receives an almost finalized version of the document. In addition to improving transcriptionist productivity, reduced manual entry means that the integrity and quality of your information is fully protected.

Multi-site support and workflow automation may be required. Whether your staff is already spread over several offices now or will be in a few years, your digital dictation system had better be based on multi-facility architecture. You will need an enterprise solution, fully scaled to serve multiple sites,

departments and geographical locations without impacting workflow efficiency. Do you prefer solutions based on a central server rather than having to handle one server per site? Make sure you can customize privileges and security on a per-site, department and user basis. If you opt for a speech recognition solution covering multiple countries, make sure it supports all languages involved in the project. In the event that an author needs to dictate in several languages, will you be invoiced for one or multiple licenses?

Workflow must be fully automated. An enterprise solution is also one that allows for true workflow flexibility, an area where vendors, despite their mesmerizing sales pitches, differ considerably. How many routing groups can the system handle simultaneously? Can work be routed using any criteria (*e.g.*, work type, author, facility, department)? Does the system allow you to set firmwide, facility-wide or department-wide management consoles? In short remember that there is no scenario that the system shouldn't be able to handle. The technologies required to support the most complex dictation workflows are available and proven. The same applies to reporting and statistics management, which should ensure complete visibility over the entire workflow environment including turnaround, workload and productivity levels, regardless of where the reports were transcribed or the dictations completed.

"Which speech recognition engine is right for our environment?" If you decide to go with speech recognition, you need to make sure that the recognition engine suits your professional requirements and is geared toward industrial-grade speech recognition. This means the engine should not only be loaded with a language model for your specific location, but it should also offer a dedicated legal vocabulary, as speech recognition is not just about recognizing voice characteristics. As important as the acoustical challenges, the engine should be able to understand the probability model of words that logically belong to a sentence. This is called "contextual intelligence" — a key to generating true workflow improvements within highly structured professional environments such as law firms and law departments, where common dictation practice and vocabulary usage can be easily identified.

"Should we opt for a front-end or back-end solution?" Why not both? Front-end speech recognition generates text from dictations onscreen in real time, allowing authors to edit and finalize documents themselves without the involvement of a transcriptionist — fantastic on weekends or for highly confidential documents. However, while authors are in control of the entire dictation-to-distribution process, it may not be the most cost-efficient solution for all of them. Some might see their billable activities affected by certain tasks or features such as the initial training of the engine or the time-consuming editing process.

This is why your system should ideally support the back-end workflow as well, leaving your options open. The process is completely transparent to the author, whose dictation habits remain unchanged as the speech recognition engine transparently adapts to that author's specific voice characteristics, analyzing pronunciation, dialect and the corrections made to the recognized documents. Moreover, since the system is network-based, authors' corrections are shared for ever-increasing recognition accuracy while the system can be accessed from any connected workstation and not only from the local PC. As for workflow, dictation is automatically processed by the speech recognition server in the background and the transcriptionist is presented with a transcribed text and the original audio file. The new role consists of checking the recognition accuracy rather than having to transcribe the entire report. In addition the location of the transcriptionist is no longer an issue since documents are automatically routed to the relevant transcriptionist, provided your speech processing solution offers such workflow automation capability.

"Is it user friendly?" Your new system should be intuitive for authors, transcriptionists and system administrators. Is the system retaining authors' work habits, or is it requiring too much training? How detailed and customizable is the transcriptionist's work list? Can new users be added easily?

To get an initial flavor of the actual application features, don't hesitate to invite all involved parties to participate in product demonstrations and evaluate the various functions. What may sound insignificant to your system administrator could turn out to be a critical feature to an author's day-to-day operation.

"Can the system grow with our needs?" A speech processing system is a long-term IT investment. Some vendors won't hesitate to charge significant fees when it comes to extending the current platform. Therefore, the technology should offer the flexibility to grow with the organization. Modern systems are highly scalable for up to thousands of users and hours of dictation throughput per day.

"How are data security and confidentiality ensured?" Remote dictation should be as secure as dictating in the office. Ideally no file should ever be stored on a local computer. You need to look at the methods vendors are using to transfer voice files. Are files duplicated at any point during the exchange of voice and data between the server(s) and the transcriptionist?

Are data stagnating offline? Can the architecture adapt to virtual private networks (VPNs), firewalls, encryption algorithms and other security standards?

Resilience is another key point. Losing a few months' worth of client data in a few minutes is not a situation you want to experience. So find out where and for how long data are stored and whether and for how long the system keeps a copy of each dictation and report.

"What do you mean by speed?" You need to ensure optimal transcription productivity even on the slowest of connections. Easier said than done. Especially when most digital dictation vendors still use antiquated, bandwidth-hungry methods for voice file transfer (FTP, e-mail or file copy) while proven IP-based, client-server architectures can deliver information in real time. While other key industry sectors are massively adopting the IP protocol, why would the speech processing world make an exception?

While all typing has to be done on the local PC, it is wiser to retain sensitive and frequently changing data in a central database, making these available to users upon request or each time they connect to the server. Such an approach would also lower the bandwidth (kilobytes per second) required per voice or data channel. Looking at the gateway itself, it should ideally be able to determine the fastest method for sending files to the central system, allowing users to process data in real time, from any location whether office-based or working from home. The use of voice streaming technology would allow your transcription staff to start transcribing a report before it has finished downloading. Once again the technologies required for smooth voice and data transfer are here, available and proven.

"Are we obsoleting other dictation technologies?" Protecting your previous investments is a high priority, so ensure that the products you're looking at are non-proprietary but based on open, commonly accepted industry standards, offering full compatibility with any system from any vendor. This will enable your staff to continue using the digital devices they are accustomed to while your outsourcing options remain open.

If you are only looking for a transcription module and already have a dictation system from another vendor, so be it. Integration with competing systems is your vendor's problem, not yours. The same can be said when it comes to your case management system. It's the vendor's responsibility to make systems communicate with each other in an effort to avoid duplication of tasks and to improve user productivity.

"What is your support policy?" In addition to effective initial training, ongoing technical support should be provided. Are system upgrades included in the basic service contract? How far beyond the mere application software does the support team's expertise go? How are calls handled (*i.e.*, ability to perform remote diagnostics)? Does the system keep detailed logs of user activity? What is the support escalation process? How often is the performance of the call center measured?

If a vendor has an indirect sales model you can still investigate how reliable the dealer network is by performing a basic search engine query, which should provide you with the information and contact details you need.

"How do you keep up with new technology?" You want vendors to put themselves in your shoes. But they also need to be forward-looking. Is your vendor involved in .NET technology? Do they have an R&D department? If yes, how big is it and how long has it been around?

Also, when speaking with customer references take the opportunity to investigate the vendor's responsiveness to customer feedback. Are they keen to implement new features as suggested by users? Once again the more signs of commitment on the vendor's side, the better.

Business Questions

A few business indicators are worth considering when evaluating systems.

"How long have you been in the market?" Experience counts, and with age comes wisdom in the business world. Keep in mind that a true expert, no matter the area of expertise, is a focused soldier. When talking to various vendors don't be afraid to investigate the company's history. How much experience do they have with professional dictation and speech recognition solutions? It will give you a good idea of the company's tendency to shift business focus as new trends emerge and thereby help you evaluate the chances of your system being supported ten years from now.

"How big — and satisfied — is your installed base?" When requesting information from a vendor you should be provided with a list of references. Chances are you will be able to find customer testimonials on the vendor's website with, more often than not, a contact name or two. A search engine query on the customer's name might prove efficient in showing contact details.

"How stable is your business?" While the need to look at a vendor's customer base is not headline news, one thing

customers check less often is the vendor's corporate structure. This indicator is all the more critical in fast-paced technology environments where new businesses emerge like mushrooms in a rain forest. Answers to questions such as: "How big is the debt?" or "Who is making decisions?" can prove useful.

Once competitive differentiators emerge from the marketing fog and true technical expertise and vision eventually arise, you have the right tools required to approach the next, critical step: evaluate pricing and estimate ROI. You are also ready to experience short listed systems live by having trials organized at your site. Unlike other industries, this is a common practice in the legal sector and an opportunity not to be missed both for the management and daily system users. While key questions are answered outside the sales speech filter, you also get the chance to evaluate internal factors that can prove more overwhelming: resistance to change, technology readiness, required upgrades, etc. Trials usually cover a 30-day period and should involve no financial commitment of any kind from your firm or law department.

Glossary of Terms

Digital Dictation System (DDS)
A digital recording system that also automates the routing of recorded voice files to the right resources for transcription. DDS is the central piece of software to consider when looking at automating documentation workflow.

Speech Recognition
An additional module that accelerates the transcription process by generating recognized text in addition to the voice file.

Speech Processing
A term often used to define the combined use of DDS and speech recognition.

Back-End Speech Processing
A network-based, scalable approach to speech-to-text conversion that:

Supports two-tiered workflow where the transcriptionist corrects the recognized text

Shares vocabularies and input between authors for improved recognition rate

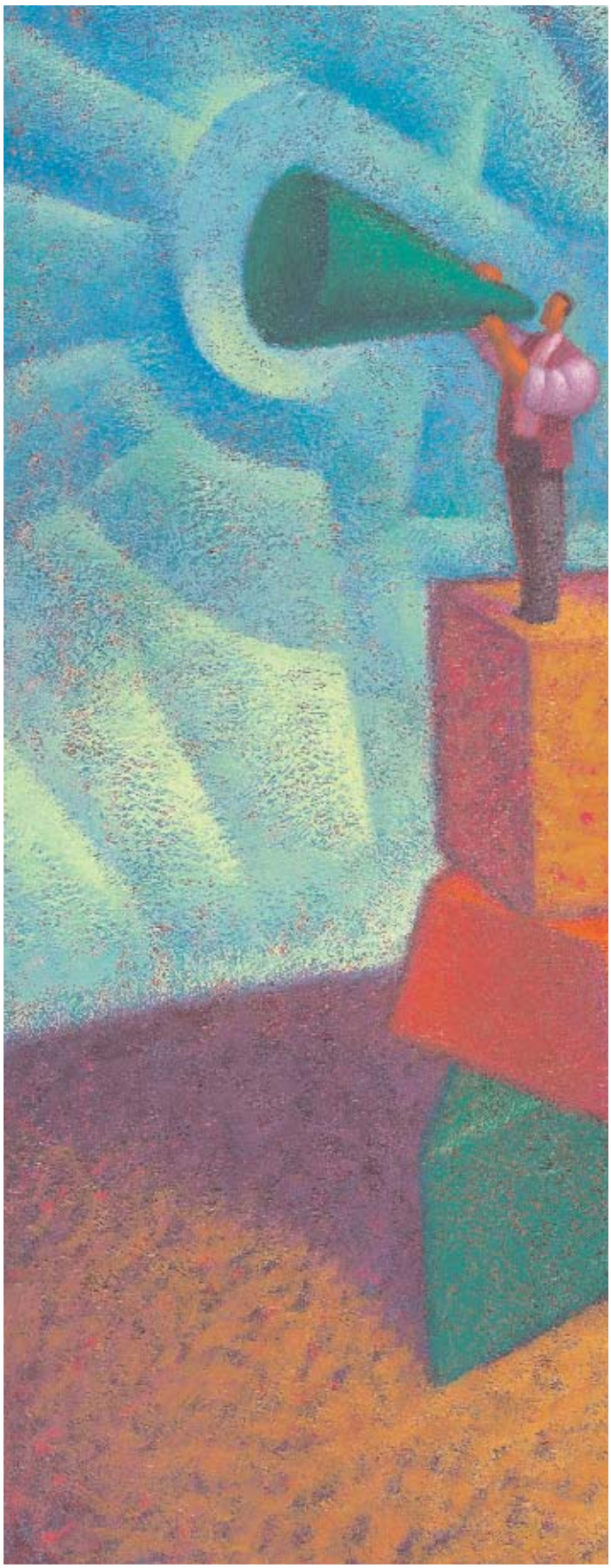
Seamlessly adapts to each author's voice characteristics

Accessible from any connected workstation

Front-End Speech Processing
An individual, PC-based solution where:

Words are displayed as they are recognized

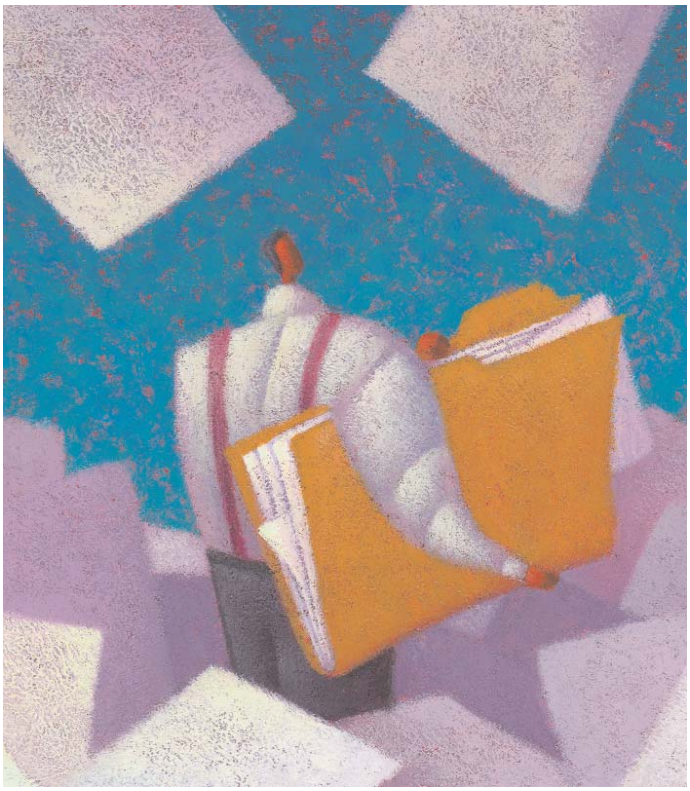
Authors make their own corrections while controlling the entire dictation-to-distribution process



The Devil Is in the Details with Document Security

Reducing Your Risk from the Inside Out

by Ken Rutsky of Workshare



Today's legal industry thrives on the *ad hoc* creation, repurpose and distribution of electronic documents. This process offers unmatched access and convenience, but it also leaves the door wide open for security threats and compliance violations. There are major security risks at the individual document level that law firms and legal departments are only beginning to realize.

Consider the major software company that filed a breach-of-contract suit against an automobile manufacturer. The software company argued that the car maker violated terms of its licensing agreement and submitted the filing as a Word document. A journalist who reviewed the filing discovered tracked changes in the document; tracked edits that showed the document had originally been drawn up as a suit against a bank in a different state. The filing was later dropped on unrelated grounds, but the reputations of the company and its lawyers were damaged.

Time to Take Control

In the midst of ongoing public gaffes such as this, organizations also work in an era of heightened awareness where they need to comply with greater security regulations. Law firms and corporate legal departments need to be more accountable and gain tighter control of their documents for security, compliance and accuracy purposes. They need to deliver a higher standard of document integrity to their clients.

However, since most of these risks to document integrity come from the inside and are created without malicious intent, most businesses are not geared to recognize or respond to their unique demands. In addition many organizations are under the false impression that using software to create PDFs protects document content. End users and organization management are often not aware that security measures in these applications need to be applied and are not automatically enabled. This misunderstanding can lead to costly errors for the firm or law department.

In an attempt to help clarify the major threats organizations are facing, outlined below are three ways to assess the areas of document risk that companies need to keep in mind. Ensuring the security and compliance-readiness of a document and its lifecycle requires attention to three core areas:

Any Data — One of the most common ways that organizations fall victim to document security risks is through the inadvertent e-mailing of sensitive documents. A perfect example of this risk is if a law firm or law department accidentally distributes a sensitive contract to a list of recipients that do not have authorization to view the document. A document that has "no e-mail rights" as an automated restriction capability can prevent this kind of debacle.

Currently most firms and internal legal departments do not have security measures in place to either prevent or monitor the distribution of certain documents by e-mail. This lack of a security posture leaves organizations vulnerable to the mistakes or intentional actions of its employees with its most important and sensitive information. One approach that can negate this threat is implementing administrator policies that can lock down or restrict a document and prevent the distribution, even the printing, of specified documents.

Hidden Data — Hidden information can be found in almost every document and can include anything from previous edits made in track changes and comments to smart tags, macros,

hyperlinks and footnotes. The aforementioned example of a software company neglecting to clean tracked changes from a document it used as a template is the perfect example of this. In addition documents reveal UNC paths that essentially carve out a map to a corporate network, leaving it vulnerable to outside attack and putting a company's corporate security at risk.

In a recent survey of 200 professionals across the U.S., U.K. and Australia by the research firm Vanson Bourne, 90 percent of surveyed respondents are not familiar with the potential security risks of uncontrolled hidden information in documents. The survey also found that 70 percent of respondents do not create documents from new, and will either copy existing documents or templates, both of which run the risk of old information finding its way into new files. This document repurposing and the low awareness regarding the level of risk associated with a document's amendments and approval are some of the biggest problems with content security in documents.

To prevent this information from leaking out via documents and threatening an organization's security and reputation, administrators and users need to create processes that clean each document before it leaves the firewall.

One example of how an uncleaned document can backfire occurred on April 30, 2005, when the Pentagon posted a PDF of a classified report on its Web site. The document provided details on an incident in Iraq where an Italian secret agent was accidentally killed by the U.S. military. What the Pentagon didn't realize until it was too late, was that sections of the report they had "blacked out" were easily uncovered by website readers, revealing sensitive, top secret details on the incident. In the end the report was quickly removed, the government endured the folly and the software maker blamed the user. Possibly the only good to come out of the debacle is the level of awareness it has raised toward the importance of document security.

Visible Data — Corporate internal controls are becoming stricter, in part due to corporate regulations such as the California Security Breach Information Act (SB-1386), to prevent unauthorized disclosures of sensitive information including credit card and social security numbers. There is other information as well that requires tighter control including personal and nonpublic customer information, competitive corporate data, intellectual property and trade secrets. For example, if a firm uses the words "we are partnering" in an engagement letter, it could result in an independence regulations breach where the Federal Security and Exchange Commission steps in and imposes harsh penalties on the company.

Every law firm and legal department needs to be aware of the language and words used in documents to avoid using damaging or leading words. Filtering any inappropriate language is critical for companies to conduct on every business document to avoid embarrassing or dangerous results.

Bottom Line for Document Integrity

Any organization that creates information captures it in a document and shares that information with others should consider these threats and consider stronger document security measures. We are all bound to make mistakes. It is our proactive measures to prevent our mistakes from becoming liabilities that will protect our organizations and our reputations.

About the Authors

John Alber is Technology Partner for Bryan Cave LLP and leads that firm's unique and award-winning Client Technology Group. Prior to assuming that role, he served for a decade as CEO of a transportation industry technology company. He can be reached at jialber@bryancave.com.

Juliet Alters is Enterprise Application Manager at O'Melveny & Myers LLP. Prior to joining O'Melveny in 2001, Juliet spent 20 years in the financial sector managing global software projects and served as internal consultant on process improvement. She has taught customized Six Sigma quality courses to employees and implemented tailored project methodologies in organizations. Juliet can be reached at jalters@omm.com.

Matthew Berg is the Director of Practice & Technology Services at Wolf, Greenfield & Sacks, P.C., a boutique IP firm in downtown Boston. Originally hired to direct the Information Technology department, Matt's duties were expanded to include overseeing the firm's Docketing, IP Services and Annuities functions as well. He has a broad background in driving and supporting emerging technologies earned over the past 15+ years while fulfilling the roles of Webmaster, Software Developer, Systems Integrator and Program Manager. Matt can be reached at mberg@wolfgreenfield.com.

Joseph L Fousek is the Manager of Practice Group Technology at Quarles & Brady LLP. He has managed most aspects of IT in his 13 years of service at Quarles. Before joining the law firm environment, Joe designed IT systems for the Department of Defense. He can be reached at jlf@quarles.com.

Skip Gould is President and CEO of BrightPlanIT, Inc., headquartered in Buffalo, NY. He and the company specialize in technology consulting, application development and technical training, with a particular focus on the unique needs of legal services organizations. Skip can be reached at Skip@BrightPlanIT.com.

Jesus Ortiz is Chief Technology Officer of Thomson Elite. Prior to joining Thomson Elite, he served as the vice president of engineering for a number of enterprise technology companies. Jesus earned a B.A. in computer science from the University of Southern California in Los Angeles.

Ken Rutsky is Executive Vice President of Marketing at Workshare and has more than 20 years of experience in engineering, sales and marketing roles at IBM, Intel, Netscape and several software start-ups. At Netscape, Ken was responsible for building the channel and brand marketing programs for both Netscape Communicator and the Netscape Enterprise server suite. Most recently, Ken has been responsible for corporate and product marketing at several management and security related software companies including Actional and Collation. Ken can be reached at Ken.Rutsky@workshare.com.

Bob Yacovitch, Ph.D. is Senior Design Engineer of Crescendo Systems Corporation. For over 20 years, he has dedicated himself to the field of high technology software development. After holding management positions at organizations such as XIOS Systems, ACOM Computer Systems and Marconi Communications, Dr. Yacovitch now supervises a team of developers accountable for the most progressive systems to date from Crescendo. He can be contacted at bob@crescendo.com.

Debi Young is Client Services Manager at Omega Legal Systems, a provider of time, billing and accounting software to the legal market. Debi joined Omega in 1998 after more than 20 years experience in the controller position at law firms nationwide. She has a bachelors degree in business administration. Debi can be reached at dyoung@omegalegal.com.

International Legal Technology Association

2110 Slaughter Lane, #115
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