BETWEEN THE LINES

TAPPING THE POTENTIAL OF
21ST CENTURY DOCUMENTS

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Advancing Knowledge-Worker Productivity

If you want to be a productive citizen in the new economy, you need to be adept at handling information. That means adept at evaluating information, processing information and drawing on information to make decisions. In short, you need to be a knowledge worker. Why? Because knowledge workers are increasingly driving value creation in today's enterprises.

As outsourcing and offshoring continue to absorb "easy" productivity tasks such as customer service, the functions that remain in-house tend to represent an organization's core business. More often than not, that core involves collecting and managing information. Those who quickly leverage information to make smarter decisions—getting it right the first time around—are more likely to succeed.

That's why increasing knowledge-worker productivity has become one of the principal challenges facing today's enterprises. It's a tricky task made even thornier by an ever-growing tsunami of information flooding our 24/7 global landscape. However, if you increase the quality and quantity of employee output within this complex new world, you generate a world of benefits:

Decision making becomes informed and expedient. Products and services reach markets with greater efficiency. And profits go up. You also gain the financial resources necessary to attract and retain talented employees, invest in innovation and infrastructure, reward shareholders and achieve just about every other goal on the corporate agenda.

In fact, you could say that increased productivity is the most powerful cylinder in the economic engine. After all, when you enhance productivity, you drive growth. But how do you boost organizational productivity in the 21st century economy? It's a dramatically different undertaking than in the past because the nature of work has changed substantially.

From Manufacturing to Managing

In the days of Henry Ford, productivity measurement was fairly concrete. How many Model T's are rolling off the assembly line? How much steel is being produced for every hour of labor?

Output could be captured in a straightforward set of numbers. Then scientific management techniques could be applied to increase efficiency, provide training and tools and enhance employee morale. That, in turn, generated more widgets.

However, in most developed economies today, organizations are not powered by assembly-line workers, but by a new breed of employee—one who works with information, knowledge and ideas. Noted management consultant Peter Drucker anticipated this sea change more than 50 years ago when he added "knowledge worker" to the business lexicon.[1]

Knowledge workers now constitute a substantial percentage of the workforce in the developed world. But numbers alone do not capture their significance. Knowledge workers manage the most valuable assets of the Information Age—the data, information, business intelligence and intellectual property that, in aggregate, constitute organizational brainpower.

Says Drucker:

> The most important, and indeed the truly unique, contribution of management in the 20th century was the fifty-fold increase in the productivity of the manual worker in manufacturing. The most important contribution management needs to make in the 21th century is similarly to increase the productivity of knowledge work and the knowledge worker.[2]

Stephen Covey agrees. In *The 8th Habit: From Effectiveness to Greatness*, the best-selling author writes:

> Quality knowledge work is so valuable that unleashing its potential offers organizations an extraordinary opportunity for value creation.[3]

But you can't unleash the potential of knowledge work without understanding how to measure what you're enhancing. And that's not easy.

Making Information More Productive

Rather than take their place on an assembly line, knowledge workers often carry their work with them. You don't see sparks and dust flying when they tackle a task, because the heavy lifting takes place in the quiet chambers of the brain, as well as in their interactions with other knowledge workers.

What's more, their tasks are hard to define and may change every day, with no visible output beyond an idea. In addition, the collaborative nature of their work can make it difficult to determine who is contributing what. And it may take years before the value of a project can be assessed.

Frederick Taylor, the father of scientific management, would be tearing his hair out. With so many issues around measuring the productivity of knowledge workers, it would seem almost impossible to improve it.

Yet the solution is fairly simple. To increase the productivity of knowledge workers, you need to improve the way they work with knowledge. If you transform the dynamic processes involved in the management of information, you build a strong foundation for productivity gains.

Therefore, the central challenge of the 21st century workforce lies in leveraging information in the smartest, most productive way possible. That means:

- Enabling secure access to relevant information
- Ensuring that information is current and accurate
- Organizing information so that it can be understood and evaluated
- Using analytics to extract meaning from vast troves of information
- Fostering information sharing and collaboration

These five steps are proving to be invaluable as the workplace continues to evolve from an environment of cogs to one of cognition.

The Case for Case Management

As the Ford-era production mentality drifts further into the past, the idea of knowledge workers as "case managers" is emerging to take its place. Instead of working with project pieces passed sequentially from one employee to another, individuals are increasingly managing "cases" from start to finish.

Think of a bank officer handling a loan request or a claims analyst managing a disability claim. The knowledge worker interfaces with a series of people, but handles more of the actual work, hopefully adding value as he or she moves the case along.

While the word "case" may call to mind social workers or lawyers, an independent Forrester Research report defines dynamic case management as:

> A highly structured, but also collaborative, dynamic and information-intensive process that is driven by outside events and requires incremental and progressive responses from the business domain handling the case. Examples of case folders include a patient record, a lawsuit, an insurance claim or a contract, and the case folder would include all the documents, data, collaboration artifacts, policies, rules, analytics and other information needed to process and manage the case.[4]

The case manager concept is not new, but it is being reexamined in the light of today's business challenges. In its modern form, dynamic case management is a combination of business process management, enterprise content management, business analytics and event processing. What unites these diverse elements? Documents. Documents wind their way through a case from the moment it's opened until the day the file clicks shut.

Therefore, if you improve the efficiency of a case's document processes, you enhance the productivity of the knowledge worker, which in turn advances the productivity of the enterprise.

Enabling Access to Current Information

There is one simple step almost every organization can take to kick-start document-related productivity: digitizing documents.

By converting hard-copy materials into e-forms, you can remove tedious, time-consuming tasks such as filling out documents, distributing hard copies, filing and storage. You also enable greater information access and sharing. And you ensure currency because content can be updated in real time by authorized users.

Unfortunately, with increased access comes increased risk. That means information security is essential. You need to build rock-solid systems that restrict access to authorized users and include security measures such as firewalls and detailed audit trails. In doing so, you gain productivity and protection.

By enabling broad, secure document access, you can streamline everything from accounts payable and HR benefits management to onboarding and discovery in litigation. Even conceptual processes, such as those shaped by creativity or innovation, can be strengthened.

Dow Chemical provides an ideal example. For well over a century, innovation has been the cornerstone of Dow's success. The company prides itself on leading "the business of change—rearranging atoms and reshaping molecules to create new materials and new technologies."[5] One can only imagine the rich document library that preserves the company's past achievements while serving as a foundation for future advancements.

Dow's vast library has continually expanded as the company has grown, fueled in part by mergers and acquisitions. In 2001 alone, Dow purchased six companies and merged with Union Carbide. Naturally, Dow's scientists were eager to have these new document collections seamlessly integrated into the company's global knowledge base.

"A scientist works by leveraging what's already been done and then carrying it further," explains Anne E. Rogers, leader of Dow Chemical's Proprietary Information Services. "The easier you can make it for a scientist to discover what's already been done, the faster you can bring new products from idea to market."

Dow set about digitizing 5.5 million pages of documents. Many were not typical "pages." The collection included handwritten notes, oversized blueprints, hardcover books that had to be unbound and product samples glued to loose sheets of paper. Additionally, some of

the library's most treasured pieces were rare, crumbling onionskin documents with fading ink. Preserving and safeguarding these mission-critical materials was paramount.

Once the project was complete, the company's worldwide R&D scientists and strategic partners gained global desktop access to the complete collection of research documents. What happened next? Access levels quadrupled. R&D was streamlined. And time to market shrank measurably. The company was even able to redeploy staff for additional productivity gains. Today, Dow's document library is in better shape than ever and, as founder Herbert H. Dow put it: "If you can't do it better, why do it?"[6]

Bringing Order and Meaning to the Data Chaos

Providing access without structure is like creating a pathway to the edge of a vast, overgrown jungle. To avoid losing users in the wilderness, companies must organize their information in a way that allows employees to readily extract meaning. This has never been more important than it is today, when "information overload" is proving to be an understatement.

Where does most enterprise information reside? In documents—both internal and external.

Take, as an example, health care. In a 2010 *New York Times* article, Dr. Pauline Chen wrote:

> Documentation takes up as much of a third of a physician's workday … Having become physicians in order to work with patients, doctors instead find themselves facing piles of charts and encounter and billing forms, as well as the innumerable bureaucratic permutations of dozens of health insurance companies.[7]

Clearly, Dr. Chen and her colleagues have plenty of information access. What they don't have is information structure. And the article doesn't even mention the unstructured electronic information that adds to their burden.

Putting it simply, access alone won't cut it. To realize document-related productivity improvements, you also need to organize information in a way that makes sense for the enterprise and makes life easier for its employees. Users need to be able to quickly find what they need and efficiently derive meaning from it, thereby making smarter decisions.

As recently as a few years ago, this was a daunting task. But advanced searching, cataloging, indexing and tagging technologies—such as meta tags—now enable content to be efficiently structured and accessed in a pointed way. It's a cake-and-eat-it-too solution: content is liberated and accessible, yet tightly managed and controlled.

One recent content management solution implemented by a Xerox client took this idea to new heights. Documents were labeled with bar codes that contained data about online routing

paths and storage locations. When a document was scanned into the network, it guided itself to the appropriate reviewers and ultimately to its final database destination. More than just "smart," these materials were essentially self-aware.

Search engines are also becoming astute. No longer content to drum up long lists of Web pages, computational knowledge engines like Wolfram|Alpha are synthesizing information on our behalf, presenting a single result in a structured, relevant format—e.g., as a direct answer, chart, math calculation, nutrition label, etc. Communication concepts like semantics and language nuance are influencing the way search engines "think," enabling them to become more focused and deductive. Perhaps the best example of this is Watson, the IBM computer that bested two human *Jeopardy* opponents through recognition of natural language, including puns and double meanings.

Whether traditional or advanced, search engines are a beloved tool. "Google" would never have become a verb if they weren't. Therefore, employees are beginning to call for real-time search capabilities inside the firewall. If you can scour the entire Web for a morsel of data, why can't you hunt within your own company network?

Because of technologies like these, the traditional three-step information hunt—find the right document, open it and scroll through the haystack in search of the needle—is becoming a thing of the past. Instead, information expeditions are as fast as searching a structured database. Employees obtain the content they need immediately. It's like taking a direct, nonstop flight to the information you want instead of wasting time with layovers or accidentally boarding the wrong plane. And the shorter the flight, the less time you spend up in the air.

Productivity Where You Least Expect It

By capitalizing on the approaches detailed in these pages, organizations across industries are able to gain new efficiencies and realize productivity improvements, often where you least expect them. Here are three examples:

The Doctor's Office. A Medicaid agency implemented electronic health records so that patient information could be securely shared with physicians and other related agencies. Doctors now have access to each patient's treatment history (including ER and specialist visits), as well as to treatment plans from other providers. Tightly coordinated care, fully informed decisions.

The Toll Booth. The New Jersey Turnpike Authority steered its failing E-ZPass program into the fast lane by expanding website documents, extending

customer service hours and converting 122 miles of road to open tolling. The result? 863,000 E-ZPass accounts quickly grew to 1.8 million and revenue shifted into high gear.

The County Seat. Denton County, Texas, digitized more than 1.2 million land and vital statistic records, including deeds, birth certificates and marriage licenses. Citizens securely access the information online, driving 200,000 transactions a year and generating $1 million in savings (everything really is bigger in Texas).

Fostering Collaboration

Famed football coach Vince Lombardi said, "The achievements of an organization are the results of the combined effort of each individual."[8]

Did Lombardi's "organization" have access to playbooks and game plans? Absolutely. Was information structured in a useful way? It had to be. But what really made Lombardi's Packers a winning team was collaboration.

Collaboration is no less important when running toward business goals. Fortunately, a myriad of technology tools—infrastructure-embedded and cloud-based—can help streamline the process. Whether videoconferencing on Skype®, sharing materials via BlitzDocs®, commenting on a PowerPoint presentation through Microsoft Live Meeting®, or forwarding sales leads over LinkedIn®, collaboration has never been easier.

When e-files are housed in a single, shared repository or stored in the cloud, employees no longer pass documents to one another in a time-consuming, sequential process. Instead, knowledge workers simultaneously review documents, provide input and take action, aided by version control tools. And that has a tremendous impact on productivity.

At Xerox, we are currently developing a pioneering document solution that delivers collaborative network benefits to health care. One potential application revolves around post-care facility placement for hospital patients. Here's a typical "before" scenario:

Karen has just had successful heart surgery and needs to be discharged to a rehab facility. The hospital's placement coordinator begins calling local sites to find an available bed.

The first facility isn't sure what they have, but promises to call back. The second has no protocols for cardiac patients. The third has an opening, but not until the following week. The response of the fourth is, "Sorry, but the woman who does that is out to lunch." The fifth is almost sure Karen can be accommodated but, "Could you fax over the paperwork first?"

Meanwhile, two facilities in the next town have exactly what Karen needs, but they're not on the hospital's call list.

Adding their opinions to the scramble are Karen's physician, her nurses, the social worker, the payer, the home health agency for Karen's follow-up care, and, of course, Karen and her family. Eventually, an opening is found. But the patient coordinator discovers at the last minute that Karen requires an oversized bed. Karen's transfer is canceled and the cycle starts all over.

The problems with this process are fairly obvious. Inaccessible external information. Incomplete internal information. Lack of coordination. Time-devouring phone calls and faxes. Plus the financial strain on the hospital, which keeps Karen longer than it should, and the emotional burden on Karen and her family.

Now, envision an "after" world where Karen's placement involves a collaborative network solution:

The hospital placement coordinator pulls up Karen's record on his desktop system. Karen's e-folder contains all the criteria for her post-hospital care, including the need for an oversized bed, her cardiac protocols and any related insurance information (while meeting HIPAA requirements).

The coordinator begins his online search. He has direct access to the available beds at rehab facilities, group homes, assisted living facilities and other sites, local and out of state. The facility information is detailed—bed types, staff, protocols—and updated in real-time. The coordinator makes his decision based on data that is complete, current and accurate. Within minutes, he finds the perfect opening in the next town. A few taps on the keyboard and Karen, her family and her hospital team can be certain she'll get the care she needs.

This after-care example involves a single knowledge worker. Just imagine what would happen if these proficiencies were achieved throughout an enterprise.

Another force driving the move toward productive collaboration is social networking. Sites like Facebook® and Twitter® are increasing the expectation that we can easily and instantly connect with others. Tools such as crowdsourcing and fan pages are encouraging customers to add their voice to the business conversation. And online sharing, whether opinions or baby photos, is becoming a part of the air we breathe. Many enterprises are still at the socially awkward stage, wondering how to approach the dazzling new superstar. But it's clear that the collaborative nature of social technologies holds great potential for enterprise efficiency.

Facilitating Smarter Decision Making

Although knowledge workers are engaged in a diversity of tasks, they share a common job function—making decisions that have a significant impact on the company's present and

future. In a way, decision making is the "critical app" of knowledge work. Good decisions move your business forward. Bad ones set it back.

An attorney's decision in a key litigation matter can save a company a billion dollars or result in financial catastrophe. A physician's decision can have a life-or-death impact on a patient. An engineer's decision about the design of an overpass can improve the lives of commuters or threaten their safety. Add up the multitude of decisions like these in any given organization and the significance is monumental.

When you broaden access to well organized document content and enable collaborative workflows, you improve the quality of decision making at both the individual and group level. The City of Dallas is experiencing this firsthand thanks to the digitization of more than 100,000 engineering drawings used by its water department for repair and maintenance.

When the Dallas project is complete, field crews will be able to access relevant information at the point of need—alongside a leaky water main, for instance—rather than drive to department headquarters, rummage through files for a hard-to-find document, then return to the original site to fix the problem. That means decisions about minor fixes or life-threatening disruptions can be made with greater speed and confidence.

The leaders of this dynamic, business-oriented city also converted their paper-based city hall fax machines to a digital system, saving time for key administrators and busy staff members.

"We're able to move documents quickly, scanning documents, and so now we just send things to each other so much easier and faster," said Assistant City Manager Jill Jordan. "It's really been a great improvement for all of us, because we're able to do our work so much easier and quicker and more efficiently."

Public sector solutions like that of Dallas provide better service for citizens and ultimately conserve tax dollars. But comparable benefits can be gained by any company that improves its decision-making process. One tool positioned to play an appreciable role in this area is predictive analytics. Like computational search engines, these technologies extract meaning from enormous amounts of data, much of it stored in documents. But unlike search engines, they deal in projections and likelihoods.

As predictive tools assume greater business responsibility, information that was once the exclusive domain of statisticians will be more readily available to knowledge workers. Analytic insights will aid in anticipating customer behaviors, projecting prospect responses, forecasting product sales and otherwise envisioning an enterprise's future. All of which contribute to smarter decisions.

And what do smarter decisions really mean? Fewer mistakes and faster results, regardless of your industry. What's more, you'll be spared the consequences of many ill-advised (or just plain bad) decisions. That means less rework, fewer problems at the 11th hour and a reduced need for costly damage control. It's productivity, with the added benefit of prevention.

Keep Improving the Improvements

Access. Currency. Organization. Collaboration. Analytics. Decision Making.

Each can be optimized on behalf of your knowledge workers when you take a strategic approach to the management of documents and the information they contain. It's all part of the effort to help your most valuable employees do a better job of serving customers … developing new products and services … solving problems … and shortening the distance between strategies and goals.

By improving knowledge-worker productivity, you improve organizational performance. It's that simple. The faster—and sooner—you move your organization forward, the more likely you are to leave the competition behind.

It's also critical to remember that productivity improvements are anything but static. If you're accelerating the wheels of progress, don't take your foot off the gas pedal. Your workflow enhancements must continually be enhanced. As Jim Collins wrote in the business best-seller *Built to Last*:

> The critical question asked by a visionary company is not "How well are we doing?' or "How can we do well?" or "How do we have to perform to meet the competition?" For these companies, the critical question is "How can we do better tomorrow than we did today?" They institutionalize this question as a way of life—a habit of mind and action. Superb execution and performance naturally come to the visionary companies not so much as an end goal, but as the residual result of a never-ending cycle of self-stimulated improvement and investment for the future.[9]

And isn't that what productivity is all about?

Endnotes

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2. Peter Drucker, *Management Challenges for the 21st Century*, HarperBusiness, 1999
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