



The Hidden Costs of Information Work

White Paper

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INFORMATION TASKS ARE CENTRAL TO TODAY'S ORGANIZATION

When productivity rates leap, so do enterprise profits. In the past century, we have automated blue-collar work, wringing more products out of every worker hour. With the economy now becoming information-based rather than industrial, the next frontier is to make information work more productive. It is no wonder, then, that organizations are trying to analyze business processes in order to streamline them; eliminate duplication; and automate the predictable, repeatable steps that any such process includes. Automating repetitive steps and eliminating those that waste time will increase information worker productivity and save an organization millions of dollars. But information work — white-collar work — is difficult to analyze. The product of knowledge work is ideas, documents, data. How do we quantify both the number and quality of ideas that are produced?

HOW DO YOU QUANTIFY INFORMATION WORK?

This Content Technologies multiclient study set out to answer precisely this question. During the summer of 2004, IDC surveyed 600 U.S. companies in three size categories and in four vertical industries — financial services, government, manufacturing, and healthcare. We asked them how long they spent at various content-related tasks and what repetitive tasks they performed that were prime targets for automation or improvement, such as rekeying data or reformatting documents. We also asked them what authoring software, content management, or retrieval applications they had either developed or purchased and what content provider services they had subscribed to; how they were using them; and what the process was for deciding what to buy or build and how to implement it. We found out what their collaboration patterns were, both inside and outside the organization. Then we interviewed customers to fill in the cracks in the data with qualitative information. The goal was to determine how content-related tasks were performed and what the prevailing attitudes were to investing in and using content management and retrieval applications. What were the advantages? What were the barriers to use and to investment?

WHAT WE FOUND

We took the data that we had gathered on average number of hours spent on each task and, based on an average information worker salary of \$60,000 per year, calculated how much the annual cost would be per worker to an organization. Table 1 and Figure 1 show the average number of hours spent on the major information-related tasks that use technologies such as authoring software and content management and retrieval software. Table 1 also shows costs to an organization for one information worker earning \$60,000 per year, including benefits, or a salary of \$45,000 per year plus an additional 30% in benefits paid. The numbers are based on the Bureau of Labor Statistics annual salary figures published in *Crain's Chicago Business* in June 2004. They don't include additional overhead or equipment. Note that all workers do not perform all tasks.

TABLE 1

The Cost of Information Tasks to the Enterprise

Task	Average Hours per Worker per Week	Cost per Worker per Week* (\$)	Cost per Worker per Year* (\$)
Email: read and answer	14.5	418.3	21,752.9
Create documents	13.3	333.7	19,952.7
Analyze information	9.6	277.0	14,401.9
Search	9.5	274.1	14,251.9
Edit/review	8.8	253.9	13,201.8
Gather information for documents	8.3	240.0	12,481.7
File and organize documents	6.8	196.2	10,201.4
Create presentations	6.7	193.3	10,051.3
Create images	5.6	162.7	8,461.1
Data entry to eforms	5.6	162.4	8,446.1
Manage document approval	4.3	124.1	6,450.9
Publish to Web	4.2	121.2	6,300.8
Manage document routing	4.0	115.4	6,000.8
Publish to other channels	3.9	112.5	5,850.8
Create rich media	2.8	80.8	4,200.6
Translate	1.0	29.7	1,545.2

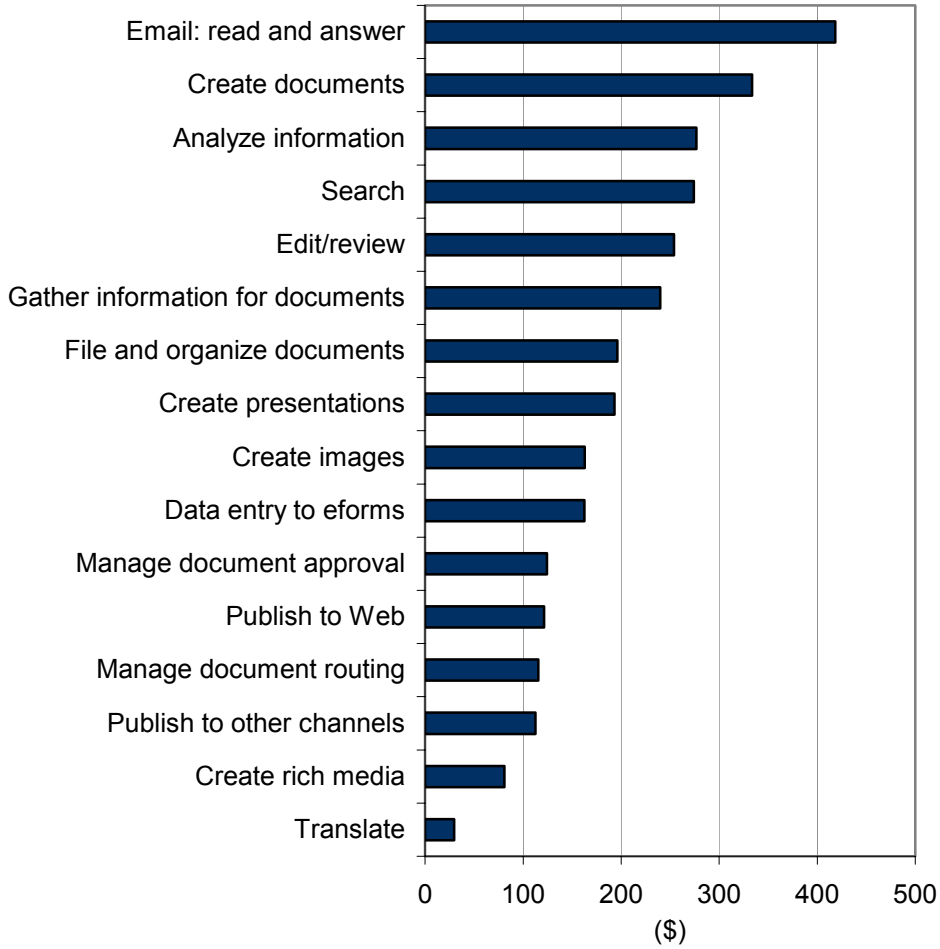
n = 234

Note: *Based on average salary of \$60,000 per year plus benefits (\$28.85 per hour in a 40-hour week)

Source: IDC's *Proving the Value of Content Technologies Study*, 2004

FIGURE 1

The Cost of Information Tasks to the Enterprise per Worker per Week



n = 234

Note: *Based on average salary of \$60,000 per year plus benefits (\$28.85 per hour in a 40-hour week).

Source: IDC's *Proving the Value of Content Technologies Study*, 2004

Email, as most information workers will agree, is by far the most time-consuming activity, followed by creating documents and then finding and analyzing information. The costs for these activities are staggering, but the number of hours spent is credible, based also on other surveys we have done, which support these figures.

Email consumes an average of 14.5 hours per week per worker. This is not surprising, given that it is the major vehicle for collaboration and for exchanging information, both inside and outside the organization. Email is often intimately intertwined with document workflow, sales, scheduling, and other business processes. Assuming that the average knowledge worker makes \$60,000 a year, we calculated that time spent in reading and answering email costs a company \$21,752 per worker per year.

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Authors of documents spend roughly 33% of their time writing, creating illustrations, or putting together presentations. This costs an organization \$19,953 per worker per year.

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Searching for and analyzing information both consume 24% of the typical information worker's time (9.5 and 9.6 hours per week, respectively), making these tasks relatively straightforward candidates for better automation. Each task costs an organization more than \$14,000 per worker per year. It makes sense, then, that if workers are spending roughly a quarter of their time searching for information and another quarter analyzing it, this time must be as productive as possible.

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Note that most of these are direct, content-related tasks. However, collaborative tasks such as review and approval have 4.3 hours of management overhead (manage document approval) on top of the 8.3 hours of editing and reviewing that information workers do. Managing document routing consumes 4 hours. The use of software tools that streamline the collaborative review and approval process can reduce or eliminate time wasted in version control issues, reduce the management overhead for document approval and routing, and potentially reduce the edit/review time. Automating these content workflow or business process tasks could eliminate nearly a full workday a week for an information worker who performed all of them today, leaving that worker with the time to work on more productive tasks.

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Any dent that an organization can make in the hours information workers spend on any of these tasks will have immediate payoff. And that is what our interviews confirmed. Investment, for instance, in content management software immediately improved the productivity and efficiency of one company by 30%. And that is without the intangible benefits.

Table 2 and Figure 2 show some of the information tasks that waste time, the amount of time that our respondents spent on them, as well as the cost of these tasks to an organization. These tasks are repetitive and could be automated or streamlined with improved software.

The figures for time wasted appear small in comparison to the time that tasks such as email require. But note that the tasks in the first list are productive, however time-consuming they may be. The monetary impact on an organization of wasted time is anything but small. For instance, an organization employing 1,000 knowledge workers loses \$5.7 million annually just in the time wasted by employees having to reformat information as they move among applications.

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Not finding information costs that same organization an additional \$5.3 million a year. Note that not finding information is a broad category. The problem may be caused by poor search or lack of integrated access to all the enterprise's collections of information. But it may also be caused by lack of good content. And only 25% of the respondents told us that they subscribed to high-value online content providers' services. If access to a single service that aggregates trusted information sources can streamline information gathering and, incidentally, provide better quality information than may be found on the open Web, it makes sense to subscribe. Shaving the costs of not finding information can have a significant impact on an organization's bottom line.

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TABLE 2

Hours Wasted per Week per Task

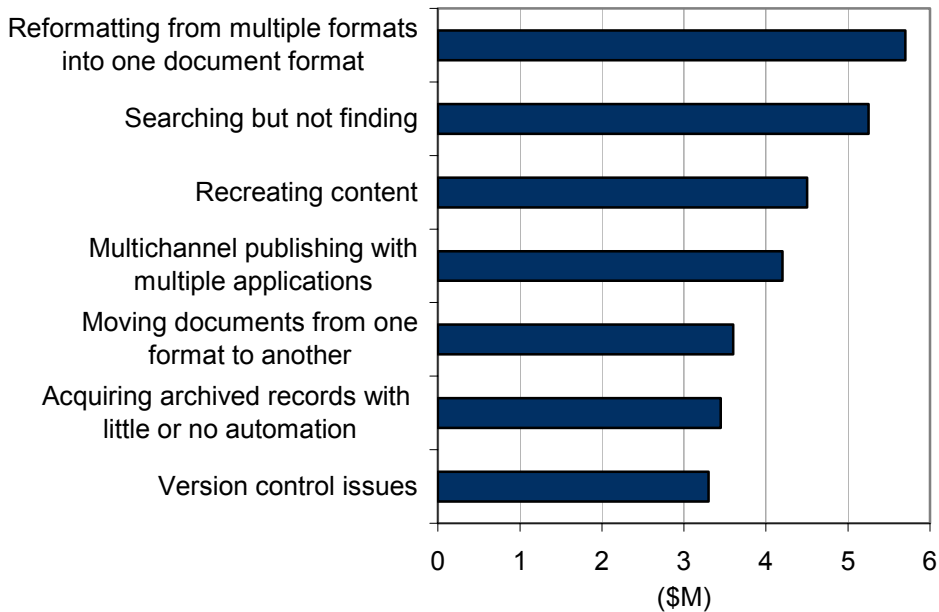
Task	Average Weekly Hours	Cost per Worker per Week* (\$)	Cost per Worker per Year* (\$)	Annual Cost to Enterprise with 1,000 Information Workers (\$)
Reformatting from multiple formats into one document format	3.8	110	5,701	5,700,760
Search but not find	3.5	101	5,251	5,250,700
Recreating content	3	87	4,501	4,500,600
Multichannel publishing with multiple applications	2.8	81	4,201	4,200,560
Moving documents from one format to another	2.4	69	3,600	3,600,480
Acquiring archived records with little or no automation	2.3	66	3,450	3,450,460
Version control issues	2.2	63	3,300	3,300,440

n = 234

Source: IDC's *Proving the Value of Content Technologies Study*, 2004

FIGURE 2

Annual Cost to the Enterprise of Hours Wasted per Week per Task



n = 234

Note: Cost applies to enterprises with 1,000 information workers.

Source: IDC's *Proving the Value of Content Technologies Study*, 2004

As organizations attempt to operate within leaner budgets, these figures become even more significant. They show that it is sensible to invest in content management, in unified search of email and all other collections of information, and in high-quality content from trusted sources. Failing to do so can affect the bottom line. Conversely, improving content management and access helps organizations control costs and add revenue.

This study also revealed a technology investment pattern that we have seen in other IDC studies: when companies start to expand beyond 1,000 workers, they appear to experience growing pains. As small companies, they are skilled at saving money by either building the small applications they need or making do with what they already have. Economies of scale don't make sense for smaller companies. However, as companies grow, their need for infrastructure and for control of business processes, including content management and publishing, becomes more critical to their success. It is important for these companies to reassess their IT investment strategies in order to invest in important infrastructure. We found that companies in this middle group (1,000 to 5,000 workers) wasted more time at the tasks in Figure 2 and spent more time at the tasks in Figure 1. They also had fewer investments in content management and retrieval applications and were more likely than the other groups to write their own applications rather than to buy commercial software. It is possible that midsize companies that do not learn to take advantage of the economies of scale that content applications can bring will never grow beyond their current size because the labor costs would be too staggering.

TANGIBLE ROI FROM CONTENT MANAGEMENT AND RETRIEVAL APPLICATIONS

Only a third of the survey respondents measured return on investment (ROI). However, our interviews with existing customers turned up some startling benefits, both in increased revenue and reduced costs:

- ☒ A state government serving 9 agencies, 13,500 employees, and 1,000 direct users realized \$284,311 in annual benefits after recouping the cost of the software. It eliminated having to print out 600 documents a day in order to capture and file them. The state government replaced printing and distributing 40 copies each of 300 reports a year with electronic distribution through its document management system. It also eliminated the use of microfilm and was able to integrate reports into the document management system, thereby making them more accessible to all users.
- ☒ A software manufacturer was able to field 50% more customer calls in the same amount of time because of easier access to information and a streamlined, reorganized technical support organization. Customer satisfaction through online self-help increased, and consequently, the call volume decreased by 40–60%. Time spent on calls was also significantly reduced, lowering phone expenses for the manufacturer.
- ☒ A publishing company implemented a new search engine. It found that better search improved the ability of customers to find the information that they were seeking and therefore decreased the number of calls to customer service by 20–30%, cutting costs and freeing the customer service staff to work on other tasks. Based on the initial results, the company "guesstimated" that the combined content management and search applications will save approximately \$281,250 over five years at a minimum.
- ☒ Using translation management software, a Web travel site was able to cut translation turnaround time in half.

INTANGIBLE BENEFITS

While quantifiable benefits may make it easier to justify technology purchases, our interviews with existing customers demonstrated that the intangible benefits of using content applications may be even more valued. Here is a sampling:

- ☒ The state government reduced errors in data collection, making its information more valuable than it had been previously. Every employee now has access to more information more easily. This improves efficiency and eliminates repetitive tasks. As a result of the savings, the state government was able to hire more professional-level employees.
- ☒ The software manufacturer found that it had created a powerful sales tool — a side benefit of creating a knowledge base that is fed automatically by each customer call. Sales representatives mine the knowledge base to correlate users with specific products. They can monitor their clients, track product success and failures, and identify cross-sell and up-sell opportunities.

- ☒ The publishing company reported that the improved search capability removed a large burden from account representatives, and in the long term, the company expects sales to increase due to increasing online sales and customer satisfaction. The 8–10 IT staff members find it easier to maintain the Web site and related content on a daily basis. By centralizing the document submission process and repository, editing, proofreading, and formatting groups around the world will be able to share documents and resources, balancing their workloads during crunch times. These groups will increase efficiency and convenience by improving collaboration.
- ☒ The Web travel site's non-U.S. customers no longer must wait for new innovations in site design and functionality, fostering goodwill and improving customer relations.

CONCLUSION

If enterprises are leaking money from the costs of information work at such a great rate, then why is so little written about the impact that inefficient information tasks have on an organization?

The answer is that knowledge work is hard to quantify. Unlike manufacturing processes, information tasks are a complex mixture of intellectual efforts and repetitive jobs. Repetitive, predictable tasks are amenable to automation, but intellectual analysis and judgments are usually not. Teasing these apart is not easy. It is only by analyzing hundreds of interviews with information workers across many different organizations that we begin to discern patterns. In this and other IDC studies, it has become obvious that tasks related to creating, organizing, finding, and analyzing information have become significant time sinks. The problem will only get worse as our economy migrates from being manufacturing-based to information-based.

As this study has demonstrated, content-related work — basic information work — costs an organization too much when it is not organized and automated. Our studies demonstrate that investment in content technologies pays for itself, often in a matter of months. Our interviews show that when knowledge work is automated, not only are enterprises more efficient but their relationships with customers, partners, and suppliers are improved immeasurably. This may be the most valuable effect of improving information work with content applications. To quote one of our interviewees:

"Our image now is more professional. How do you translate that into dollars?"

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