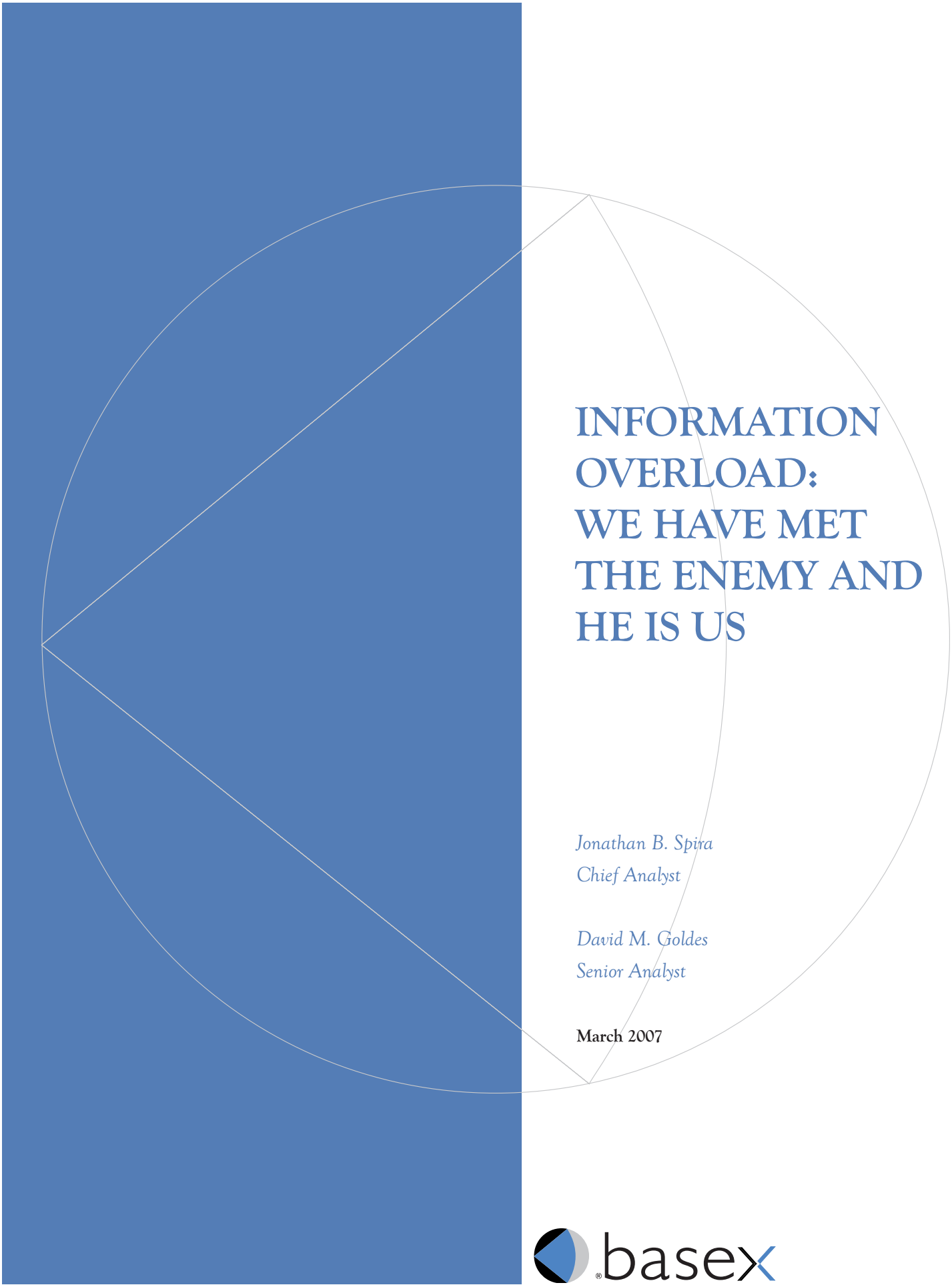

INFORMATION OVERLOAD: WE HAVE MET THE ENEMY AND HE IS US

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INTRODUCTION

We try to do our work, but information gets in the way. It's not unlike Tetris, where the goal is to keep the blocks from piling up. You barely align one, and another is ready to take its place. Information, in the form of e-mail, instant messages, text messages, Web pages, discussion forums, RSS feeds, wikis, Weblogs, phone calls, letters, magazines, and newspapers, keeps piling up. In fact, we have become far more proficient in generating information than we are in managing it, and we have also built technology that easily allows us to create new information without human intervention.

It isn't a new problem and it was very much on the minds of thought leaders of an earlier information age, centuries ago, including Roger Bacon, Samuel Johnson, and Konrad Gessner whose 1545 *Bibliotheca universalis* warned of the "confusing and harmful abundance of books" and promulgated reading strategies for coping with the overabundance of information.

Information overload was also predicted by Alvin Toffler in *Future Shock* (1970). In 1989, Richard Saul Wurman warned of it in his book *Information Anxiety*.

It's no longer something that we need to prepare for. Now that we are in the knowledge economy, it's something we need to manage on a daily basis.

THE KNOWLEDGE WORKER

We define the knowledge worker as a participant in the knowledge economy. The knowledge economy connotes an economic environment where information and its manipulation are the commodity and the activity (in contrast to the industrial economy where workers produced a tangible object with raw production materials and physical goods).

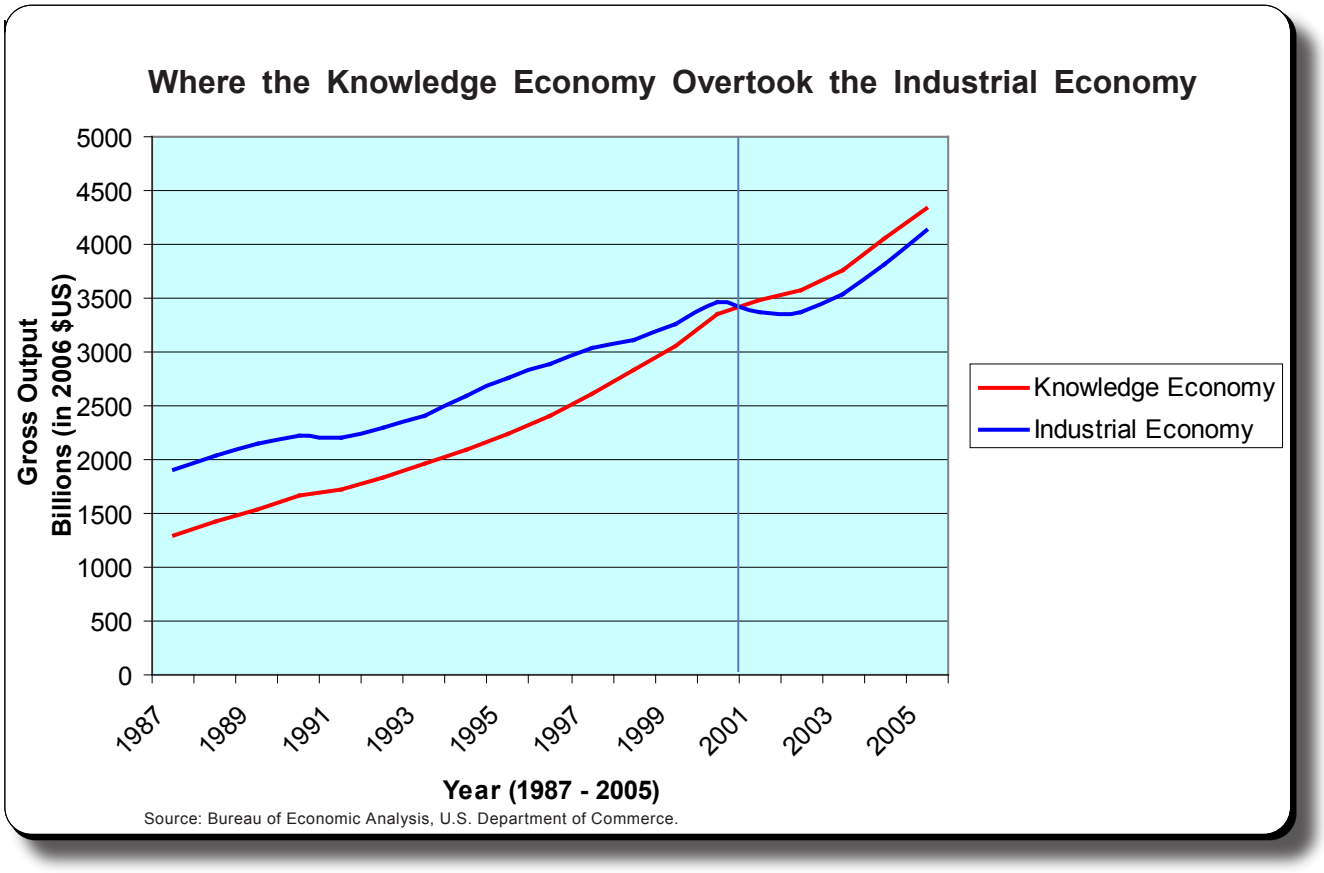
Today knowledge workers comprise a plurality of the workforce and every day we get closer to a majority. This stands in stark contrast to the beginning of the twentieth century, where unskilled labor accounted for ca. 90% of the workforce. Today, that figure is closer to 20%.

As the world's economies become knowledge based, the knowledge workforce has become the rule, not the exception. This means that knowledge workers, more so than other workgroups, are often the linchpins to an organization's success.

Despite their importance, this change represents a significant challenge to managers, who have been trained to manage workers in more traditional roles.

Sometimes the thinking is insular, especially in companies involved in the IT sector in some way. Many see knowledge workers all coming out of one mold but not all knowledge workers sit in front of a computer keyboard day in and day out. Indeed, not all knowledge workers who sit in front of a computer spend their time collaborating and sharing knowledge.

Another change for managers, especially in organizations where the product or service is knowledge, is that the knowledge workers literally



own the means of production as opposed to a factory worker who uses, for example, a welding machine provided to him on the factory floor.

Age may play a role here: younger computer users, under the age of 33 (which means they were born after 1974, the year Pong was introduced), seem to be wired differently than older users. These younger users appear to multitask naturally, whereas for many people over 30, the concept of having ten instant messaging sessions open, plus a telephone conversation, and doing work (on the computer, of course) is a foreign and mostly unattainable concept.

Of course, the ability to devote partial attention to multiple sessions does not necessarily make an individual more productive.

A recent Basex survey revealed that more than 50% of knowledge workers surveyed write e-mails or engage in IM sessions during conference calls. It's not yet clear what the long-term ramifications of this type of behavior may be.

WHY THIS IS IMPORTANT TO YOUR ORGANIZATION

It's important to note that the issues covered in this report are critical to your business but you will probably not make it to the end, at least

not without multiple interruptions and distractions. While reading it, you will receive at least one or two phone calls, at least 10 to 20 e-mails (whether you read them or not is another issue), a few instant messages, and a colleague may pop in. Your mobile phone may ring or you may get a few text messages. You might get distracted and visit a Web site (but we do promise to keep this report interesting enough so you do not leave).

When you work, you spend several hours per day "doing" e-mail, whatever that amorphous phrase means. Then you try to go onto other tasks, with varying degrees of success.

The chances are that you will use a computer for a good portion of what you do, regardless of your job title. That wasn't always the case. As recently as 10 years ago, even as computers on the desktop became commonplace, most work was still not done on a computer.

The majority of the current generation of knowledge workers grew up first envisioning computers as big machines with blinking lights that computer scientists in white lab coats would hover over, and many saw a keyboard as a tool only a secretary would use. Of course, today almost all knowledge workers interact directly with computers far more powerful than the big machines on an hourly basis. How productive their interaction is, however, subject to question.

Such is the state of the knowledge workplace in 2007.

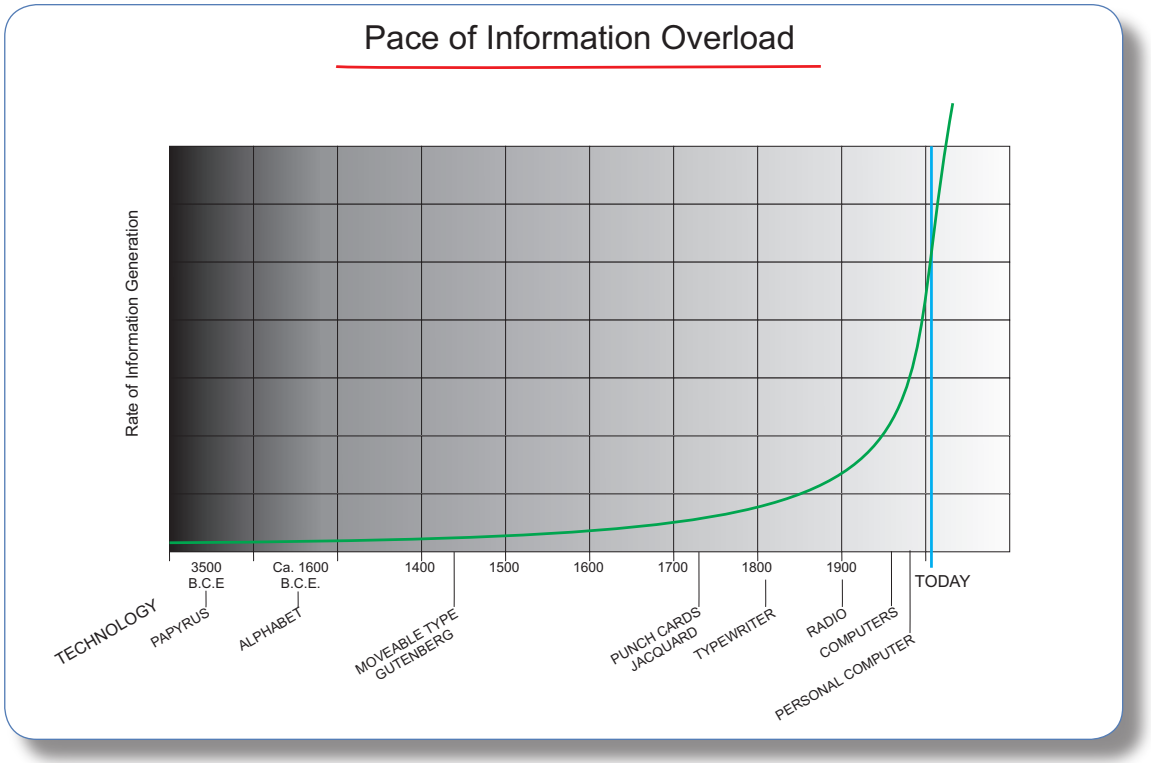
INFORMATION AND THE INDIVIDUAL

How much information can any one person manage at a given time?

The answer to that question has become critical to how companies will fare in the knowledge economy although the answer itself remains elusive.

You'll need to keep your eyes peeled or you might miss something. Information comes at us at a fantastic rate that is increasing daily and we fail to assimilate most of it. This is true even in face-to-face exchanges of information. Over 40 years ago, Ray L. Birdwhistell demonstrated that "no more than 30 to 35 percent of the social meaning of a conversation or an interaction is carried by the words." The rest is communicated with kinesics, non-verbal behavior, commonly called body language, such as facial expression and gestures.

Our work is far more information intensive than it had been in a world whose economy was largely agricultural or even industrial just decades ago. In larger organizations, the problem is exacerbated by the number of people who generate information and "share" it with thousands of colleagues. Today, everyone is an information publisher or content creator. This of course makes it difficult to discern what information is valid and most up-to-date, a topic that is best left for another discussion.



The problem is further exacerbated by information technology allowing information to be created and disseminated at a far greater pace and to a far greater number of individuals than book publishing ever did.

THE PROBLEM

Today, for companies with thousands of knowledge workers, information overload has become a major problem, costing them perhaps billions of dollars in lower productivity and hampered innovation. It may also be harmful to employees in a variety of ways, including lowering comprehension levels and skewing the work-life balance.

The problem of information overload is multi-faceted. It covers e-mail overload, interruptions, new technologies that compete for our attention, and improved and ubiquitous connectivity (making us available from almost anywhere at anytime), just to name a few issues.

Defining the problem from the foregoing isn't that simple either. It's not just a case of too much e-mail, too many interruptions, too many projects, or too many instant message sessions. It's how these things all mesh together — sometimes like an orchestra without a conductor.

In other words, whether sitting at a desk in the office, in a conference room, in one's home office, or at a client's, the likelihood of being able to complete a task (what many call "work") without interruption is nearly nil. Not all work is created equal, nor are all interruptions. With apologies to George Orwell, some interruptions are more equal than others.

But just what constitutes an interruption? An interruption for the interruptee is not necessarily an interruption for the interrupter! Most knowledge workers don't think of an interruption they occasion as a "bad" interruption; on the other hand, when they themselves are interrupted, their perception is often quite different.

TECHNOLOGY

A new challenge awaits companies in the knowledge economy: the tools that serve as a lubricant and keep knowledge flowing (such as e-mail, the

Web, and instant messaging) also act as a wrench in the works when they interrupt the knowledge worker and cause information overload.

Bringing new technologies into the workplace can create fear and distrust. Gisele Bonitz, the knowledge manager for the U.S. Navy (Third Fleet), tells of the difficulties of replacing radio communications with chat tools shipside. One engineer onboard a Navy vessel seemed disinclined to use the new chat tool. One day, radio communications were particularly unclear and he couldn't make out what someone was trying to say, asking the other party to repeat the message multiple times. Finally, another engineer, realizing that the other party was using chat as well as the radio, printed the message, handed it to his colleague and instantly converted that engineer into an ardent believer.

HUMAN FACTORS AND HUMAN NATURE

In looking at an interruption, it is important to determine whether something is important, urgent, or both. Many knowledge workers simply do not differentiate, or see everything as both important and urgent. Something that is important may not require an immediate interruption, whereas something that is urgent would certainly be more likely to merit, and surely call for, an interruption. Importance can also vary, based on the particular needs of the group or organization.

Even more important to note is the fact that each knowledge worker has different priorities, different tasks, and a different idea of what is urgent or important. What is urgent and/or important to me at a given moment might not be as urgent and/or important to you.

Knowledge workers may be constantly busy, but that doesn't make them either productive or efficient. It also doesn't mean that what they are doing is aligned with the strategic goals of their employer.

Sometimes a knowledge worker might feel like a ping pong ball, bouncing around from task to task. The unending barrage of work — be it e-mail, meetings, or teleconferences — just like the Tetris squares, never stops.

Very few knowledge workers could enumerate everything on their plate — including priorities and deadlines. The task management tools that come with Lotus Notes and Microsoft Outlook leave a lot to be desired and project management tools that companies use to guide large projects also don't offer a worker-based view that would help an individual knowledge worker plan and prioritize.

Still, knowledge workers can be their own worst enemy. As if to illustrate this point, the majority of knowledge workers, according to a 2005 Basex survey, tend to open new e-mail immediately or shortly after notification, rather than waiting until they have a lull in their work

WHERE KNOWLEDGE WORKERS WORK

The concept of a "workplace" has changed significantly in the past 20 years. Far greater numbers of knowledge workers are working from non-traditional, non-Dilbertian locations, including home offices, customer locations, hotel rooms, telecommuting centers, and airline lounges. Specifically, we estimate that 40% of all knowledge workers work from one to five days a week in such an environment. At AT&T, 90% of eligible employees telecommute at least one day per week; at IBM, 40% of IBMers telecommute or show up each day at a location that is not an IBM office.

The advent of high-speed connectivity away from the office has helped facilitate this trend but with it come new challenges, including

- Ensuring that those working outside the "office" have access to the same information resources as the rest of the organization.
- Making sure that the physical office supports the type of work, including ergonomic furniture, sufficient data connectivity, and a separate and distinct work area.
- Recognizing that new work environments bring new possibilities for work disruption and interruptions. For example, telecommuters might have neighbors dropping in to ask questions (some telecommuters report that they become the de facto recipient of UPS deliveries for neighbors), children home from school, other deliveries, and the temptation of non-work related items in the home.

- The fact that some remote workers use non-sanctioned methods of communication with co-workers (e.g. public IM systems, public Web e-mail systems to which corporate e-mail is forwarded) that do not meet corporate security guidelines.

This doesn't even begin to take into consideration the legions of knowledge workers who toil all day in the office and then take unfinished work home. Some organizations refer to these workers as "Day Extenders." They too need some measure of support and comprise a group not generally as recognized as telecommuters.

Compounding this, the manner in which people work has changed dramatically, and all indications are that more change is in the air. For example, e-mail has become a staple of communication both internally as well as externally. But compared to five or ten years ago, how many e-mail messages does one receive today? Most people report at least a 20-fold increase over that period.

In addition, organizations have multiple means with which to manage content. Content is what we tend to create or read every day. Some content is in documents (this further blurs the distinction between content management systems and document management systems, but that is beyond the scope of this report). All of these tools add new software and technologies that the knowledge worker must not only contend with but master.

WORK-LIFE BALANCE

An additional issue occasioned by the knowledge economy is that the line between work and one's personal life tends to blur. The trend began slowly, as knowledge workers were enabled to check voicemail and, later on, e-mail, from home and on the road. Today, many people feel that they are at work 24x7.

Some workers, with colleagues flung across Europe and Asia as well as North America, face the work-life balance as an extreme. 18-hour days are not uncommon (after all, even if one rises at 6 h in New York, it's already 11 h in London and noon in Frankfurt, and the day doesn't really end until the west coast shuts down). Burnout (both temporary and permanent) is always looming. A recent Wall Street Journal article captured one knowledge worker's sentiment perfectly: after an 11-hour workday, followed by a flight to Chicago for a business dinner and then a conference call at 22 h local time, she was "time-zoned."

On the other side of the equation, it is typical for workers to read their personal e-mail, make personal phone calls, and even surf the Web recreationally from their offices. The job will fall to companies to ensure that the lines between work and home do not become too blurred and to help minimize the damage to knowledge workers' family and private lives.

THE COST OF INTERRUPTIONS

Interruptions now consume 28% of the knowledge worker's day, based on surveys and interviews of high-level knowledge workers conducted by Basex in 2005. This translates into 28 billion lost man-hours per annum to companies in the United States alone. Assuming an average salary of $21/hour for a knowledge worker, the cost to business is $588 billion. It would therefore be an understatement to say that attention management — the area of management science dealing with interruptions — merits immediate attention.

In 2005, Glenn Wilson, Reader in Personality at the Institute of Psychiatry, University of London, gave an IQ test to a group of people who were to do nothing but take the test. He then had a second group take

an IQ test while being distracted by e-mails and ringing telephones. The first group did far better on the test, by an average of ten points. The second group also did worse, by an average of six points, than a group in a similar study that had been tested after smoking marijuana. That group experienced only a four point drop.

Considering the impact of interruptions on the enterprise, it is surprising that managers aren't more concerned. Every day in the workplace, knowledge workers divert their attention to interruptions and other distractions, thereby diminishing efficiency and productivity.

SOURCES OF INFORMATION AND INFORMATION OVERLOAD

Knowledge workers get their information from myriad sources: co-workers, e-mail, the corporate portal or intranet, the Web, RSS feeds, Weblogs... the list goes on and on.

It's not only a question of where employees get information from, but also what sources they place reliance on. At IBM, knowledge workers rely on the W3 portal, one of the most successful Collaborative Business Environments ever deployed. It is worthy of note for a variety of reasons, including its sheer mass and the value that IBM employees place on it. W3 is used by IBMers worldwide everyday. According to IBM's own internal surveys, most IBM employees place a greater reliance and trust on information from the portal than from co-workers and managers.

INDIVIDUAL STYLE

Despite that, at times, it seems that all knowledge workers are grouped together, each knowledge worker has a unique way of working and diverse style when it comes to using "tools" such as e-mail. Such habits are not limited to computer-mediated communications and tools. Some knowledge workers have messy desks and offices, although many claim they can find anything anywhere on any topic regardless of the mess. These habits sometimes transfer over to computer usage. Those with messy desks keep everything piled up in their inboxes although they maintain they can find anything when needed.

Others are filers, who try to put everything in folders and delete messages they perceive as unnecessary, keeping their inboxes neat and tidy. One can identify filers when they ask a hoarder for information they themselves have deleted.

This begs the question, does it pay to file and sort e-mail messages given the quality of search tools that are available today? Does it matter whether one's e-mail inbox has 200,000 messages or just 10?

Deletion of e-mail is a bad idea regardless.

Some companies maintain "risk management" policies that require deleting e-mails older than, say, 30 days. This ensures that "sensitive" e-mails are deleted but not in a manner which would be considered to be illegal.

There is probably little that goes on within the enterprise that is not, in some manner, shape or form, documented in e-mail. In fact, e-mail databases become a very important aspect of a company's knowledge management (KM) system, holding the sum of what has been perceived, discovered, and learnt by numerous employees with various points-of-view and differing expertise. E-mails to external parties have replaced written correspondence, both the kind prepared on an IBM Selectric typewriter with carbon paper and, more recently, the kind stored in Word or WordPerfect files. Fortunately, no one has suggested deleting all word processing and spreadsheet files on a monthly basis.

The genesis of e-mail deletion policies had much more to do with the cost of online storage; in the pioneering days of corporate e-mail, when network server space was regularly measured in megabytes, and then hundreds of megabytes, pruning e-mail file size made sense — it was practical only to preserve the most recent e-mail messages. Although, today, IT managers still worry about managing storage, it is not because space is scarce.

Granted, managing knowledge is a far more ambitious task than even trying to catalogue all that is known. It is the development of a culture

and mechanisms that foster ideas and thoughts, in addition to having a system that is all knowing about people, places, and things.

However, it is difficult to imagine flushing out a major component of a firm's knowledge every 30 or even 60 days. Knowledge workers report that they regularly find valuable information in their own e-mail files, located by searching the mail database; sometimes this knowledge is contained in e-mails written or received three or four years ago if not longer. It is mind-boggling to think how much valuable knowledge might be destroyed by misguided corporate e-mail policies.

INFORMATION OVERLOAD IN LARGE COMPANIES

Generally speaking, information overload costs companies by lowering concentration levels, making it difficult for people to follow complicated trains of thought, lowering innovation levels, creating the likelihood of reinventing the wheel because information cannot be found, quickly propagating mistakes, and leaving knowledge workers to wonder how they will know if they got the "right" information from the "right" place. In general it creates a man versus machine atmosphere. Sometimes the machine wins.

But companies are doing something about that. IBM introduced ThinkFridays across the company. Friday afternoons everywhere are to be free of non-essential meetings and interruptions. The practice was informally begun by IBM programmers, who used the time to conduct research or write papers in relative peace.

Similarly, Dow Corning sponsors a no-meetings week once each quarter, banning non-essential meetings. This of course begs the question, what is a non-essential meeting?

CASE STUDY: CITRIX

Gordon Payne, group vice president of Citrix Systems' Advanced Solutions Group, knows all too well from first-hand experience how one can simply have too much information at hand. Payne reports getting 200-300 new e-mails at home on topics he or family members either subscribe to or which just appear. To get to the good stuff, he spends a lot of time filtering this inbox.

In the office, he gets another 200 plus e-mails in the average day. While many of these can be dealt with quickly, many also include larger reports or documents in need of review. "For this I have my airplane reading pile." he says, "Each trip (transcontinental or transatlantic) gives me at least six hours of relatively uninterrupted time to read. This is where I can catch up."

The key things, according to Payne, are prioritization and focus. As a sender, how does one get the right information to someone through

the clutter so they get what they need. On the receiving end, how does one provide filters and intelligence to get what is needed as well, so that everyone doesn't have to spend time manually reviewing and filtering for many hours every day?

Payne also sees different types of information access. On the demand side, we have better and better search tools that anyone can use to find exactly the information they are looking for. On the supply side, people are being inundated with information, some useful, most irrelevant or unwanted. One solution is improved filtering tools, equivalent to search tools, that help users prioritize, view and categorize inbound information.

CASE STUDY: MORGAN STANLEY

Morgan Stanley is a leading global financial services firm that provides a wide range of investment banking, securities, investment management, wealth management, and credit services. The firm's employees serve clients worldwide including corporations, governments, institutions and individuals from more than 600 offices in 30 countries. The firm has been actively studying the problem of information overload for over four years.

Max Christoff is an executive director in Morgan Stanley's Information Technology department who focuses on knowledge worker productivity issues.

According to Christoff, Morgan Stanley sees solving the problem of information overload as a competitive advantage: "We are actively investing in it," he notes. That is why the company is developing ways to measure outcomes of what its users are doing. Such work is groundbreaking in many respects because measuring the work of knowledge workers is a new frontier and more of an art than a science. The firm lives and dies by numbers so Morgan Stanley will apply the same diligence here and look for returns on investment.

The firm has working groups and staff devoted to the problem of information overload, perhaps as many as 100 workers devoted to the

problem. Following an internal study conducted in 2002, the issue has been taken very seriously.

Management at the firm gets it. The head of investment banking technology is at the forefront, studying the dynamic of the new workforce that comes in every year, trying to determine what types of tools they will require. Different lines of business present different problems. People on trading floors typically have eight monitors each and they zealously monitor every change in the markets; equity research analysts may have one or two but spend time deep in thought. Many work in groups. Bankers work in deal teams, traders work in groups, and they need to communicate information to colleagues about what each is doing.

In addition, the firm is conscious of problems created by automated systems such as filters, given the possibility of what a false positive might cost.

Christoff also studied the work habits of five senior bankers (with their permission, of course. He trapped all Exchange events relating to them and ended up with figures on mean time to reply to a client, associate, managing director and so on. He then presented each person with his findings and several were shocked by where they fell as compared to their colleagues. One person realized he was literally off the charts in terms of being hyper responsive.

Morgan Stanley management also realizes that the costs of information overload are real and can be costly. The firm doesn't want to lose a $10 million deal because someone was suffering from information overload and didn't reply to an e-mail or other communication in a timely fashion.

MEANWHILE

E-mail is the pre-eminent culprit of information overload and its effectiveness has been reduced as more and more e-mails go ignored for days at a time. At Morgan Stanley, the CEO has started making important corporate announcements by voicemail to ensure that the message gets through.

INTERVIEW WITH NATHAN ZELDES

Nathan Zeldes is an IT Principal Engineer at Intel and is working on getting a handle on Intel's information overload problem.

1.) Why is information overload/infomania of concern to Intel?

Information overload is a problem not only for Intel but for the entire industry, and in fact also for organizations in every other sector. Dealing with the deluge of messages, many of them quite unnecessary, is causing information workers everywhere loss of productive time, hampering their ability to concentrate, and creating stress and frustration.

2.) What is the extent of its impact?

The impact has many manifestations. There is the immediate loss of time, which can come to a few hours each week for the average information worker. Then there is the fact, validated by the research literature, that the constant interruptions interfere with people's ability to think; there is the impact on the effectiveness of various processes in an organization, such as meetings and task planning; and there is the reduction of people's quality of life and work/life balance, when they are locked in a Sisyphean race against their Inbox.

3.) How aware are your colleagues and upper management at Intel?

Obviously, everyone at Intel is aware of email overload; it's been with us for years and we've been addressing it in various ways for over a decade. Awareness of the impact of constant interruptions is a more recent development, but by now our senior management is aware of both issues and we have plans in place to develop and implement solutions to reduce their impact.

4.) What about awareness at other companies?

From communicating with people at many midsized to large companies, I'd generally say that all of them are impacted by Infomania, and by now most are aware of it as a problem. Some companies are beginning to implement solutions involving education and behavior change campaigns, and a small minority is taking the next step of developing what I'd call second generation solutions, ones incorporating technological tools to complement the education part.

5.) Anything else you would like to add?

The technologies we use to communicate have developed at breakneck speed in the past decade, and the work culture has failed to co-evolve properly; as a result, we are driven by what is possible rather than by what is advisable. For example, just because it is possible to communicate in real time around the clock, we assume that we should respond instantly to every message 24x7... To my mind, it's about time we restored email to its rightful place as an incredibly useful asynchronous communication method, optimized the usage model of other communication channels such as instant messaging, and stopped the overuse, misuse and abuse that have turned them into a source of constant distraction and stress.

As mentioned earlier, a Basex survey of over 1000 knowledge workers, found that each of us loses an average of 2.1 hours per day thanks to unnecessary interruptions and recovery time. This costs the U.S. economy $588 billion per annum

Some companies, including Intel and Hewlett-Packard, call this problem "infomania." Still others refer to the "infoglut" while others prefer "information overload."

John Tang of IBM Research, studies information overload. However, he isn't sure "how broadly recognized it is as a problem throughout the company." Corporate Communications is very aware that the information they send through traditional channels such as e-mails and newsletters is largely disregarded and filtered out. Tang observes that the most effective way to get messages across, at least in his building, is through poster-sized billboards in the hallways. Corporate Communications is a victim of too much information.

Tang speaks of the "Tyranny of the Convenient," where we

do things that are easy to do, rather than the things that are important (or maybe even urgent). In addition, there is the "Tyranny of the Urgent", where we pay attention to things that are urgent, rather than the things that are important. In other words, knowledge workers frequently take the easy way out, for example spending two hours processing e-mail (relatively easy to do) instead of spending two hours writing a strategic plan for a major initiative. Or, when researching a problem, does the knowledge worker use data that is publicly available on the Web that is a "good enough" approximation for what is needed, or go through the much more difficult exercise of collecting or finding the exact data that is required?

Says Tang: "I see lots of little examples where people's behavior is guided more by convenience than doing just the right thing, and as designers of technology, we need to be aware of this to make the important things convenient and recognize when we have to forego convenience to do the right thing."

Eric Horvitz at Microsoft Research comments that e-mail at Microsoft is "sacred." It is accepted that people will spend several hours each day to handle e-mail. In fact, when Horvitz first arrived in 1993, he noticed that the entire organization "buzzed" on e-mail. Anything that happened — it was all on e-mail. Microsoft has combated information overload on some levels; spam is really no longer a problem and internal training on e-mail is offered but everyone from senior executives on down senses that information overload is a very real problem.

THE INFOMANIA SYMPOSIUM

The corporate world is not standing still on the issue of information overload. In January 2007, 20 individuals gathered in Redmond, Washington to focus on the problem. The meeting was organized by Mary Czerwinski of Microsoft Research, Prof. Sheizaf Rafaeli of Haifa University, and Nathan Zeldes of Intel. Attendees were invited based on their "proven track record" in studying and combating the problem of information overload and interruptions. They included Max Christoff and Julianne Sharer from Morgan Stanley, Daniel Russell from Google, John Tang from IBM, and Gloria Mark from the University of California, Irvine.

Everyone brought different knowledge and expertise to the issue: Gloria Mark is an associate professor at the University of California at Irvine and studies how information technology impacts human behavior; Max Christoff is an executive director in Morgan Stanley's Information Technology department and focuses on knowledge worker productivity issues.

After two days of continuous discussion, everyone was on information overload because there was simply so much to absorb on the topic. Unlike many such gatherings, participants here did not divide their attention between the meeting and e-mail or other messaging tools; focus was solely on the topic at hand. Two days here was comparable to two weeks anywhere else. And the group's mission didn't end when everyone left: participants will continue to actively monitor the situation and create strategies for minimizing the problem's impact.

IN CLOSING

It appears that the more information we have, the more we seem to generate and the less control we have over how we obtain it (or how it reaches us). Indeed it appears as if the role of computer-based communications is being obscured, moving from an effective communications medium to a problem that needs to be managed.

In addition, rather than evolving in lockstep, the technologies we use to communicate are coming at us at a faster pace than the corporate culture that must accept these tools into its midst is changing. This puts employees practically on the defensive from technology: just because an e-mail arrives shouldn't mean that one should drop everything to respond to it. Just because one can send an e-mail to all 10,000 employees in a company doesn't mean one should.

E-mail is far from being the only cause. Knowledge workers need to learn recognize the trap of the tyranny of the convenient. And they need to understand what's important versus what's urgent and place their work in perspective with what others migh be doing.

When it comes to e-mail overload and interruptions, companies such as Morgan Stanley and Intel are at the forefront in searching for solutions. Nathan Zeldes at Intel says that "senior management is aware of both issues and we have plans in place to develop and implement solutions to reduce their impact."

It's hard to fight an enemy when you don't know exactly what he looks like.

Gloria Mark points out how complex and multi-faceted the problem is. It's not just e-mail overload. It's "the introduction of new technologies, it's downsizing and other economic factors that lead people to take on extra work duties." Mark's research found that a knowledge worker spends only 11 minutes on a given project before being interrupted and starting something else.

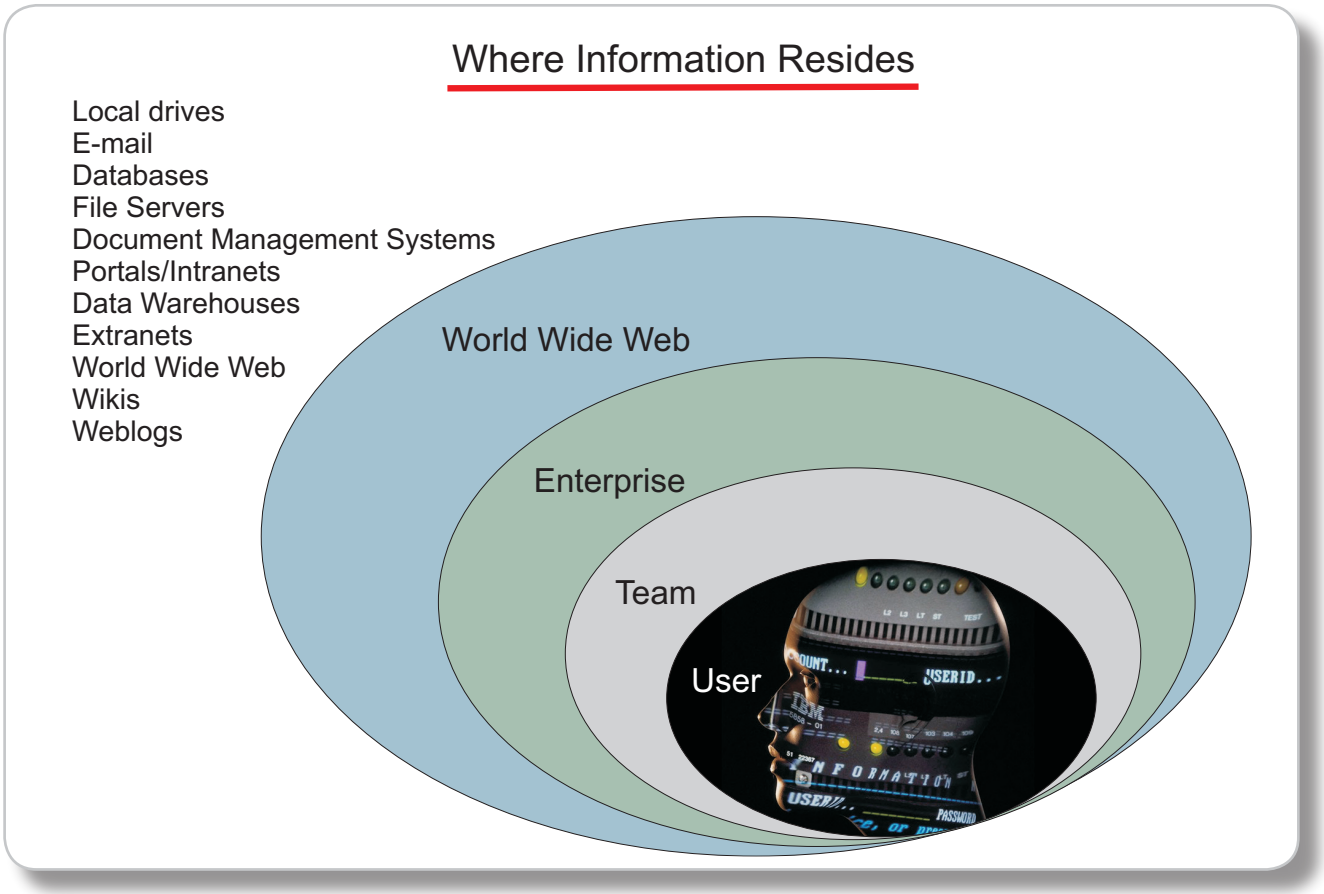
Is the problem too many e-mails, too many interruptions, too many tasks, or too much stress? The lines between work and personal life are disappearing as work expands to fill a vacuum that previously allowed for

relaxation and recreation. Now managers send e-mail when on holiday and from sports matches.

Information overload, aka infomania, has other names as well. Edward Hallowell, a psychiatrist, calls the problem attention-deficit trait, or ADT. He told *Time* magazine about a patient who asked whether he thought it was abnormal that her husband brought the BlackBerry to bed when they would make love.

What is a knowledge worker to do in a world where the Sunday edition of the *New York Times* has more information than the amount of information an average person alive 400 years ago might have come across in his lifetime?

Extreme solutions, such as shutting down e-mail altogether (which at least one company in the United Kingdom has tried), are not the answer. For now, finding better and more appropriate ways of using the tools we use everyday will significantly help everyone.



For the individual knowledge worker, finding a way to track all tasks, from the mundane (make hotel reservation for Florida conference) to the mission critical (set up team meeting to kick off new project with client Z), is crucial if the knowledge worker wants to separate the wheat from the chaff.

Some people use notebooks; others make lists in a word processor or spreadsheet; still others use software from a variety of companies that promises to help with tasks.

These work to some extent on an individual basis but fail on key points, including providing managers a realistic overview of what their employees have on their plate, complete with rankings for urgency and importance.

The problem of information overload is being looked at by many, not only the researchers at Microsoft and IBM, and managers at Intel and Morgan Stanley, but by practitioners and academicians across the globe.

What we can expect in the near term future is more information overload, not less. Information overload is, in part, a byproduct of the lack of maturity of the information age. There is so much to learn as we struggle to make technology work for the business world. And information overload is not a new thing, as we learnt from thought leaders centuries ago. We have managed to increase our information production yet we have few tactics that seem to reduce the problem.

WHAT WE CAN DO NOW

E-mail represents the lifeblood of how business is conducted. It has to be managed. As we add different computer-mediated modes of communication, e-mail may become an archaic medium; people may cling to it and be considered quaint, but for now it's the corporate lingua franca.

10 STEPS TO MITIGATE OVERLOAD

1.) I will not e-mail someone and then two seconds later follow up with an IM or phone call.

2.) I will refrain from combining multiple themes and requests in one single e-mail.

3.) I will make sure that the subject of my e-mail clearly reflects both the topic and urgency of the missive.

4.) I will read my own e-mails before sending them to make sure they are comprehensible to others.

5.) I will not overburden colleagues with unnecessary e-mail, especially one word replies such as "Thanks!" or "Great!", and will use "reply to all" only when absolutely necessary.

INSTANT MESSAGING AND PRESENCE AWARENESS

6.) I will not get impatient when there's no immediate response to my message.

7.) I will keep my presence awareness state up-to-date and visible to others so they know whether I'm busy or away.

ALL FORMS OF COMMUNICATION

8.) I will recognize that the intended recipient of my communications is not a mind reader and supply details in my messages accordingly.

IN CONCLUSION

9.) I will recognize that typed words can be misleading in terms of both tone and intent.

10.) I will do whatever I can do facilitate the transfer and sharing of knowledge.

STRATEGIES TO AVOID INFOMANIA

WHICH IS BETTER WHEN?

Knowledge workers can help reduce information overload by choosing a communications medium wisely. Under which circumstances is IM "better" than old-fashioned telephony? And under which circumstances might IM be more appropriate than e-mail? Choosing the right modality for one's needs will also help ensure that fewer interruptions occur.

IM is better than telephone when....

- There are many people participating and all need to talk/be active.
- At least one participant is in an environment where people could listen in, and privacy or confidentiality is an issue.
- There are a number of many-to-many conversations taking place.

Telephone is better than IM when...

- There are many people participating passively and one person is speaking (such as when the CEO announces a merger or acquisition).
- A more personal touch is required and the nuances of voice matter (e.g., breaking bad news).

E-mail is better than IM when....

- The text needs to be memorialized (archived for future reference, although more and more companies are archiving IM sessions).
- It contains an announcement to be sent to many people.

IM is better than e-mail when....

- An issue demands an immediate response, i.e. it is both urgent and important.
- The issue is relatively trivial, such as lunch plans.

Collaborative technologies are becoming more and more integrated into how we work. As these become more pervasive within organizations, we will have more of an expectation for people to be there – wherever "there" may be.

Still, knowledge workers can be their own worst enemy. In a 2005 Basex survey, when asked how quickly one responds to (i.e. goes to read) a new e-mail notification, 55% said immediately or shortly thereafter. Only 35% said when convenient. Given that 45% of respondents receive 50 or more e-mail messages per day, we still have a lot of work to do in managing the knowledge worker's attention for greater productivity.

POSTSCRIPT: CHARLIE CHAPLIN AS SOCIAL SCIENTIST

MODERN TIMES REDUX

Perhaps the first recorded case of work causing overload is found in the movie Modern Times. The still-silent Tramp, with his small Derby hat, mustache, and cane in his last screen appearance, is a factory worker whose job it is to tighten bolts on an endlessly-flowing assembly line of indeterminate parts made of like steel plates. Echoing the 1930s industrial obsession with time, motion, and automation, the Tramp performs his duties with clockwork precision. [This scene was echoed in the *I Love Lucy* episode "Job Switching" where Lucy and Ethel work in a candy factory.]

The film opens with an overhead shot of flock of sheep rushing through a chute and dissolves into a similar shot of workers flowing out of the subway exit into the gates of the factory complex.

Filmed between 1932 and 1936, and written, scored, and directed by Chaplin himself, the movie is a splendid study of the 1930s view of the office of the future. In the executive quarters, the presumed CEO of Electro Steel sits at his desk working on a puzzle, reading the comics in the paper, and interacting with the factory floor via a two-way video screen that also supports audio. "Section 5 - speed 'er up" he barks. Our CEO is also witness to new and emerging technologies, including a mechanized salesman delivering a sales pitch with the help of a phonograph record, and a "practical device which automatically feeds your men while at work." This feeding device features a revolving table, an automatic food pusher, a corncob feeder, a soup pourer, and last but not least an automatic mouth wipe. Naturally, our hero, the Tramp, is used to demo this tool, which promises greater productivity by eliminating the lunch hour.

Of course, all of this technology proves to be too much, and the Tramp suffers from a nervous breakdown, demonically tightening everything in plain sight, including buttons on a woman's dress, and people's noses.

The pace at which e-mail arrives is sometimes comparable to the assembly line scene in Modern Times. What's more, many people's views of productivity have been shaped by scenes such as the conveyor belt

sequence, and as the knowledge economy and information unfold, this is generally how people envision productivity.

Modern Times is an excellent tutorial for too much technology and for technology applied solely for the sake of technology; today's knowledge workers may not benefit from a *Deus ex machina* that allows the tramp to walk with his lady friend into the horizon as the sun rises.

ABOUT BASEX

Basex is a knowledge economy research firm that serves IT vendors and buyers with an expertise in knowledge worker management and productivity.

A trusted advisor to some of the world's best-known companies, Basex provides holistic research and analysis across 22 market categories on leveraging Collaborative Business Environments, the workplace that supports new, organic ways for companies to conduct business.

With more than 24 years of trusted analysis and a range of time-tested offerings, Basex works to accomplish two simple, yet elusive goals: leverage knowledge assets and make the right IT decisions.

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