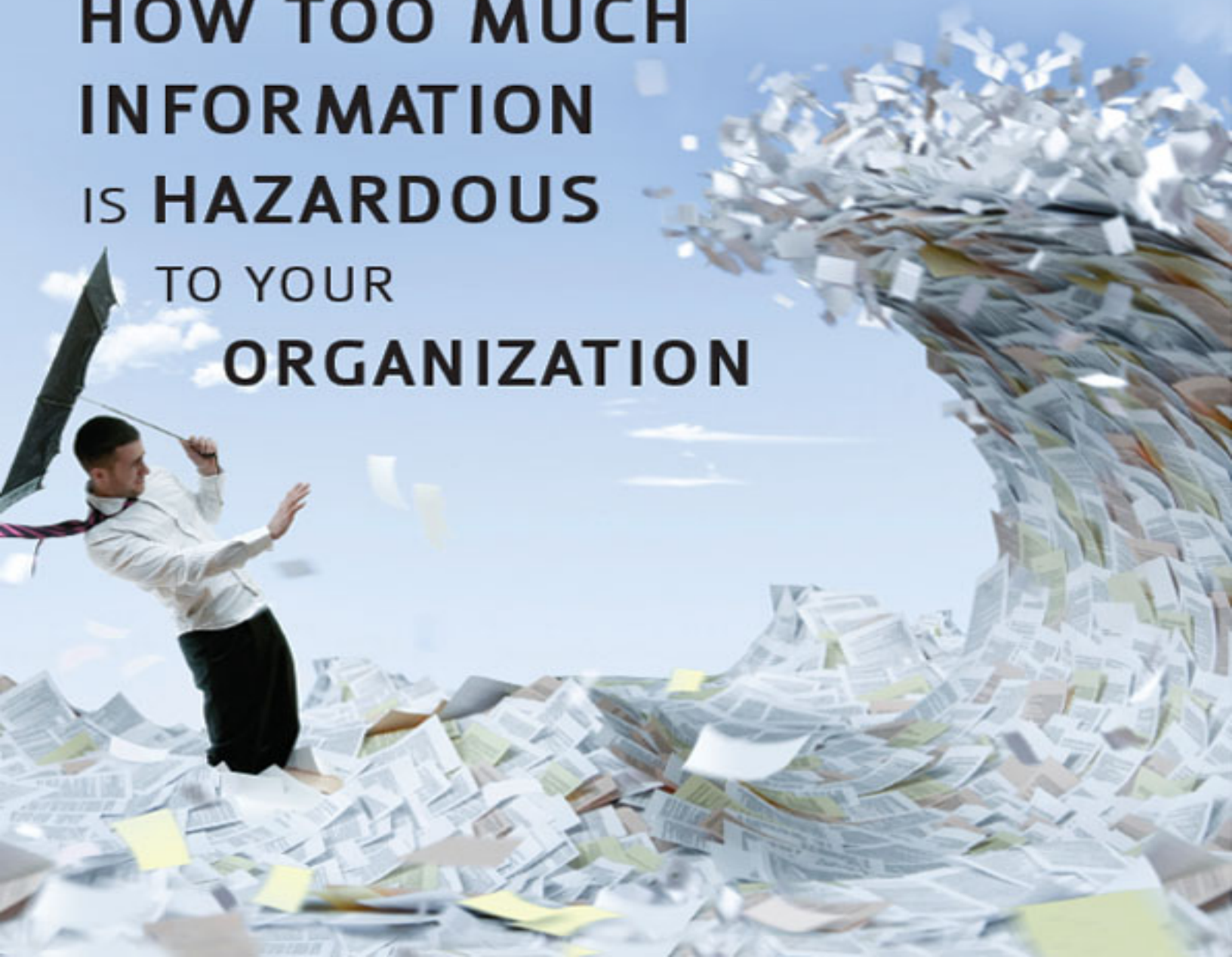


Jonathan B. Spira

Foreword by Esther Dyson

OVERLOAD!

HOW TOO MUCH
INFORMATION
IS HAZARDOUS
TO YOUR
ORGANIZATION



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To my parents, who taught me about knowledge, and to the millions of knowledge workers around the world, who inspired me to combat Information Overload.

FOREWORD

FIGHTING THE GOOD FIGHT AGAINST INFORMATION BLOAT

In this book, Jonathan Spira addresses the problem of Information Overload and our own responsibilities for it. But this isn't just a question of "don't spam." People usually create content with some purpose in mind. Sometimes it's just self-aggrandizement, in which case this book is not for you.

But if you're sending messages without getting a response, maybe you aren't thinking enough about the recipient. If you do so, you'll get more done with less effort and more control . . . because thinking about the recipients helps you determine what actually gets into their heads.

Take how I came to write this foreword. Jonathan had sent me an e-mail politely asking me to write a few notes for his book. In reply, he got this plaintive away message from me: "staving off e-mail bankruptcy: I am traveling and my deferred message liability is around 4000. I'm hoping to work my way through this, but please don't expect a reply until December 31 or worst case December 32!"

He then wrote again - and didn't get a reply. I was too busy dealing with the very problem he is describing in this book.

We then chatted in Facebook instant messaging, but I responded with little enthusiasm.

What *should* people do to cut through the clutter and elicit a response? In the case of Jonathan's first e-mail, he should have given me much more complete directions. In other cases let's say if an individual had wanted me to

recommend him for a job, he should write the forwarding letter for me - which I could edit if I wanted. Otherwise, all I would have to do is add the recipient to the cc line and hit reply.

In the case of someone who wanted help getting an in with a certain company, he could do the research himself - i.e. list the top management and the board of directors - and ask me if I knew anyone there.

If someone has to write to me a second time - I'm looking through my backlog of unanswered e-mails here! - he should not say: "Did you get my last e-mail?" Instead, he should make it easy for me by resending the whole thing - which should not have been that long anyway! I would say that my response rate goes down by 60 percent if there's a file attached.

And so on! Thinking about the person you are engaging with will not just clear up information overload; it's also likely to get you the response you want. This is one of the key points addressed in *Overload!*

(How did Jonathan actually get me to write this? By calling me! Sometimes realtime voice communication beats all this fancy electronic stuff!)

Esther Dyson

PREFACE

“Why are you so passionate about the problem of Information Overload?” is perhaps the question I have heard most in the past decade.

The answer is rather simple: Information Overload is killing us. It is death by a thousand paper cuts in the form of e-mail messages, documents, and interruptions.

Information Overload and related issues are now mainstream topics. The phrase itself is being co-opted for multiple purposes (many unrelated to the actual problem), and it’s the topic of front-page stories in mainstream newspapers, magazines, and blogs.

No one I know is exempt from the problem as information is all around us. The issue is not only the quantity; it’s also the intensity. Information is also appearing in new and unexpected ways.

Just a few days before I sat down to write this preface, the Web site WikiLeaks released 250,000 classified State Department documents including hundreds of diplomatic cables. The question of right or wrong notwithstanding, my first thought was “How will anyone be able to sort through this quantity of material and make any sense of it?”

In 1971, the *New York Times* published the *Pentagon Papers*. At the time, the approximately 7,000 pages supplied by Daniel Ellsberg probably seemed insurmountable, but the knowledge worker journalists at the *Times* managed to present the material in a comprehensible manner.

Today, anyone can go to the Web and see the actual cables released by WikiLeaks as well as tens of thousands of analyses published by various parties.

The Internet has removed the intermediaries, such as newspapers, that even a mere decade ago would have been the place to which someone such as Bradley Manning, the

private in the U.S. Army who is suspected of having disseminated the classified documents, would have turned.

Manning didn't even need WikiLeaks. Anyone can publish a Web page and content today, and this, of course, is why we have more and more information coming at us from all directions.

The unfortunate reality is, there is no magic bullet for "fixing" Information Overload at this time, and it is likely that we may never fully resolve the problem. In addition, there is a huge financial cost associated with the problem - according to my research at Basex, the knowledge economy research firm where I serve as chief analyst, Information Overload cost the U.S. economy almost \$1 trillion in 2010.

While there is relatively little that we can do about Information Overload, we don't have to grin and bear it. What does help reduce Information Overload and lessen its impact is 1.) raising awareness and 2.) presenting context and history as to why the problem is occurring.

Raising awareness helps because most people are simply unaware of the root causes of Information Overload, such as poor search techniques, unnecessarily copying dozens if not hundreds of colleagues on an e-mail, or calling someone two minutes after sending an e-mail message simply to tell the sender of its presence.

Providing context and history puts things into perspective. The quantity of information has increased in lockstep with advances in technology, beginning with pen and paper and continuing into the Information Age. Not surprisingly, sixteenth-century knowledge workers complained with alacrity about such things as too many books.

In addition, we can also take preemptive steps by teaching knowledge workers more about information and information management and ensuring that they know that their actions (e.g., sending an e-mail to 300 supposedly close colleagues)

have a significant impact on their colleagues' efficiency and effectiveness.

In addition, a new class of workers may be required, namely knowledge workers who are capable of efficiently sifting through the torrent of information, separating the wheat from the chaff, and presenting the important nuggets in an accessible manner. That person might be a librarian, researcher, editor, journalist - the titles are almost irrelevant but the information-swamped world will be grateful.

When I was doing a research project in grammar school, I learnt about the Library of Alexandria, built in the third century BCE. The library was charged with collecting all of the world's knowledge, the first effort of its kind, and became a home to scholars from around the world. It also had one of the most original (and possibly apocryphal) acquisition policies ever: It confiscated every book that came across its borders (Alexandria had a man-made port and was an early international trading hub) and copied each one, usually returning the copy, not the original, to its owner.

Today, multiple parties are attempting to build a modern-day Library of Alexandria, albeit an online one. Wikipedia, since its founding in 2001, has amassed over 9.25 million articles in 250 languages that, while not books, represent a good part of the world's knowledge. In a similar vein, Google is assembling the world's known books online. An official Google blog post from August 5, 2010, stated that Google had accounted for 29,864,880 as of that date. Thus far, it has scanned approximately 10 percent of them.

The concept of the Library of Alexandria (and, subsequently, the New York Public Library, which I frequented during another research project) made quite an impression on me. But I also realized how much information was out there. When I started working at my father's company, Spiratone, during school vacations, helping select

and deploy office automation systems, I began to see how information flowed throughout an organization, or sometimes how it didn't flow.

The time I spent at Spiratone created an indelible impression of how technology sometimes could work in harmony with business - and sometimes not.

It was in the early 1990s, by which time I had been at Basex for almost a decade, when I began to realize that the spread of then-new technologies within the enterprise, such as e-mail, were probably creating as many problems as they were solving. This contrasted with the prevailing view of such new technologies, which viewed them as a panacea for all the ills of the office.

CNBC interviewed me on productivity issues back in 1993. The reporter, Bob Pisante, opened the segment by saying "It's not just meetings that are taking up a ton of time, there's also a problem with mail. And in this day and age, mail means e-mail. You think you're busy? Jonathan Spira can get 150 e-mails a day."

If only that were the case today.

A NOTE TO THE READER

At the risk of potentially overloading you with information before you even start reading, I wanted to alert you to two important issues relating to this book.

First, while this book is bound and fixed in time and space, its mission is not limited to these pages. The book's companion Web site, Overload Stories (www.OverloadStories.com), has been created in order to allow you to share your own experiences and stories about Information Overload and read what others are going through. You will also be able to review updated research and case studies and participate in a dialogue with me on these issues.

Second, I have written this book with the individual knowledge worker in mind. As a result, throughout the book, my references to the knowledge worker are in the singular tense and this requires a singular pronoun, such as he or she. (It is at this point that I am reminded of Mark Twain's excellent essay, "The Awful German Language," in which he points out that "a tree is male, its buds are female, its leaves are neuter; horses are sexless, dogs are male, cats are female.")

To avoid what would be a rather awkward repetition of "he or she" or "him or her" throughout the book and to maintain a modicum of consistency in pronoun usage, I treat the term "knowledge worker" as a masculine noun that requires a masculine pronoun (i.e., I refer to the individual knowledge worker as "he" or "him"). Of course, Information Overload impacts everyone without regard to gender; it is truly an equal opportunity problem.

ACKNOWLEDGMENTS

Despite suffering from significant overload themselves, many knowledge workers have selflessly contributed their time and thoughts to my research over the past ten years which culminated in this book. Without the thousands of knowledge workers who took my surveys, participated in interviews, attended workshops, and sent me their thoughts, I would never have been able to understand the extent to which Information Overload impacts them and at what cost this occurs.

There are a few people whom I must single out by name, due to their unique contributions.

David M. Goldes, president of Basex and a lifelong friend, who has worked alongside me for 22 years studying knowledge workers and knowledge work and kept me focused on the reason we are doing what we do.

Cody Burke, vice president and senior analyst at Basex, who has served as my partner-in-crime since I started to work on Overload! and contributed a good deal of research and thinking that was incorporated in the book.

Basilio Alferow, vice president and editorial director at Basex, who has tirelessly reviewed my writing and made sense of it, even when it made little sense to me.

Greg Andrew Spira, my brother and a veteran of multiple books himself, who was always happy to review at my text and contribute his knowledge of the book-publishing industry.

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Finally, I would like to thank my partner, Daniel Lafler, for his unconditional support and understanding during the preparation of this book.

INTRODUCTION

Information has become the great leveler of society and business. Today, practically everyone is more informed than even the most informed person was a mere 25 years ago yet, paradoxically, knows a smaller percentage of the available knowledge. Governments, too, are far better informed about what other nations are doing (which, we hope, leads to fewer misunderstandings) as well as what the citizenry is up to. Young people in poorer nations - witness India, for example - have been able to capitalize on the flexibility of an information society to create better lives for themselves as knowledge workers, something unimaginable a mere quarter century ago.

Knowledge workers think for a living to varying extents, depending on the job and situation, but there is little time for thought and reflection in the course of a typical day. Instead, information - often in the form of e-mail messages, reports, news, Web sites, RSS feeds, blogs, wikis, instant messages, text messages, Twitter, and video conferencing walls - bombards and dulls our senses.

We try to do our work, but information gets in the way. It's not unlike the game Tetris, where the goal is to keep the blocks from piling up. You barely align one, and another is ready to take its place.

When computers first began to encroach upon our everyday lives, they were in distant, glass-walled rooms run by scientists in white coats. The closest most of us came to them were punch cards that came with utility bills. Indeed the term "Do Not Fold, Spindle, or Mutilate" became a running gag among late-night comedians (as well as the name of a movie in the 1970s about a computer dating service).

Technology was the source of conflict in earlier films as well. Films, such as *Metropolis* (1927) and *Modern Times* (1936), commented on the negative impact of automation in the workplace. *Desk Set* (1957), where Spencer Tracy and Katharine Hepburn clash over the computerization of a TV network's research department, presented an epic man versus machine struggle.

Information Overload was first mentioned in 1962 by Bertram Gross in *Operation Basic: The Retrieval of Wasted Knowledge*. It was predicted by Alvin Toffler in *Future Shock* (1970). In 1989, Richard Saul Wurman warned of it in his book *Information Anxiety*.

But Information Overload is no longer a problem of the future; it's something that we have to address and manage right now.

Indeed, the term "Information Overload" has become part of the vernacular. While spending the better part of a week at the remote Blackberry River Inn in Connecticut to focus on writing this book, I found that people I ran into had a lot to say on the topic. They also had an encyclopedic knowledge of the problems that arise from multitasking (something I cover in Chapter 16) and cited several incidents where texting resulted in train crashes and other accidents.

Two 40-ish women dining in a local restaurant and seated next to me asked me about my visit. When I mentioned the topic of the book, they both started rattling off the dangers of multitasking and the problem of finding accurate information online.

Back at the inn, the chief information officer at a large software company quizzed me endlessly on what he could do to make his workforce more efficient and effective, given the severity of the problem.

The Way Work Was

As our work environment changed and evolved, it was accompanied by a significant increase in the amount of information that was being created and that we needed to perform our jobs.

For thousands of years, work was a matter of subsistence. We worked to eat, to survive, to provide our family with food. Life was simpler then. There was a direct correlation between the success of our work and whether there was food on the table, or even if there was a table. The dawn of the Industrial Age changed all that. We went off to factories and offices as fewer and fewer of us lived off the land.

The way we look at work today is inexorably and somewhat romantically linked to 1950s situation comedies where the father, a distant figure, would leave for work in the morning in his suit and fedora, briefcase in hand, returning promptly an hour before dinner, just in time for his wife to ask “Hard day at the office, dear?” A quiet dinner hour usually followed, along with time to discuss homework with the kids and present various life lessons, all of which were to be resolved in under 30 minutes. (The actual work performed by dear old dad during the day was somewhat nebulous in most cases, but it generally involved a desk, a secretary, and occasionally a cranky boss.)

My father, who was not in a situation comedy, was the CEO of Spiratone, a midsize company in the photographic industry. He typically came home from the office at 5:30 in the evening, but his information-laden briefcase was always heavy with work that included memos, ad copy, correspondence, and other paperwork.

After the dinner hour, he retired to his study to do more work. He usually received a few phone calls from colleagues, and they were expected to be working as well. Invariably, a few times a week, the phone would ring and at

the other end was a distant-sounding female voice announcing “long distance from Tokyo, Japan, calling”: The head of his Tokyo office was on the line.

The reality of that age, however, was that most people did not work in offices but held far more mundane jobs. Indeed, in 1950, more people worked in industrial and factory jobs than anywhere else.

The Age of the Knowledge Worker

Today, 78.6 million people in the United States are knowledge workers, a plurality of the workforce. A “knowledge worker” is defined 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 produce a tangible object with raw production materials and physical goods).

Knowledge workers are found at all economic stations. An accounting clerk is a good example of an entry-level or rudimentary knowledge worker. An architect or engineer is an excellent example of a skilled knowledge worker, as is an airline pilot or physician. And a rocket scientist or Nobel Prize-winning economist is representative of the top echelon of knowledge workers.

Of course, not everyone is or should be a knowledge worker, nor is knowledge work performed simply for its own sake.

Factories will still continue to produce products (although these factories will be increasingly robotized and automated), and, as there are some tasks machines simply can't perform as well as a person, people will continue to be

directly involved in the manufacturing process. Knowledge workers may develop product design software that other knowledge workers will then use to design, for example, a refrigerator or automobile, but at the end of the day, a product is still manufactured.

The current economic makeup contrasts sharply with the workforce of 25 years ago where industrial workers represented a majority, and that of the turn of the twentieth century, where manual workers, many agrarian, comprised 90 percent of the workforce.

Mark Rivington's Day

Mark Rivington woke up at 7 a.m. to a news report on his clock radio, a bit surprised to find himself in his own bed since his job requires so much travel.

He continued listening to the news while he showered and ate breakfast. He was still sleepy since he had been up late studying Spanish online for an upcoming trip to Madrid.

After a five-minute walk to catch the 8 a.m. train, he continued on his way to work, reading additional newspapers on his tablet computer. He also listened to music on the built-in music player.

After arriving at work at 9, he logged into his computer at his desk. He pondered the work he was about to do, sitting in front of his computer, staring at the screen, deep in thought. As he began his work, the phone rang, and he answered the call. Ten minutes later, he stared blankly at the computer screen, unable to recall what he was about to write.

At 9:30, he joined an hour-long departmental meeting in a large conference room. Like most meeting attendees his age (Mark is 27), he listened with half an ear and spent most of his time triaging his e-mail inbox on his smartphone.

The meeting was over at 10, and, back in his office, Mark caught up with industry news.

It was time for another meeting, this time on the Web. Participants from a special task force Mark was on were presenting preliminary findings. Mark had to pay attention to what his colleagues were saying and make his own presentation. After the 90-minute meeting, Mark wondered how he would keep track of everything that was discussed and, more important, had to be done.

Mark had grown up with information bombardment. As a child, he had been left by his parents in front of the television for hours at a time. He knew how to use a mouse before he could write the alphabet with a pencil and spent his preteen years on the Web, constantly messaging friends around the world.

Back again at his desk, it was time to catch up on correspondence. One e-mail - marked urgent - caught his attention. A major issue was developing at a supplier's factory in Munich, and Mark would have to travel there to resolve the problem.

Mark researches flights and plans a quick trip to Munich for the next day. Since he doesn't have another meeting until 2:30, he starts researching the problem he hopes to be able to solve. An hour of searches proves fruitless, and he starts to feel overwhelmed by the vast amounts of information on the topic, unable to discern what is accurate and what is not.

His meeting comes just as Mark starts to hit a breaking point. He goes to the meeting and continues his research on his laptop. Everyone is silently tapping away on their laptops or smartphones while two people discuss the meeting topic.

Halfway through the meeting, Mark realizes that one attendee is describing a situation eerily similar to what he will be facing in Munich. He starts taking notes and sends

the speaker a meeting request to chat later. The speaker replies a few minutes later (clearly, he was multitasking, too) and a meeting time of 5 p.m. is agreed upon.

After this meeting, Mark needs a break. He relaxes by visiting his favorite hobby discussion forum (high-performance German cars) and participates in several discussions.

As the 5 o'clock meeting time comes closer, Mark realizes he needs to try to assimilate all of the information he has on the factory problem in order to make the best use of his time. He curses the poor search tools but uses the knowledge gained in the meeting to improve his search terms, and he begins to find useful information.

The meeting at 5 proves fruitful, and Mark realizes how difficult it would have been to get the information he needs if not for the chance meeting earlier.

At 6 p.m., Mark remembers he has a customer presentation due tomorrow - before he leaves for Europe. He starts to research new industry figures and 90 minutes later realizes he has enough information for his presentation, but it's far from done. He stops and goes to the gym.

Mark, finished with the gym by 9, catches the late train and starts to review the information for his presentation on his tablet. By the end of his commute, he has his presentation ready.

By 10 p.m., Mark is home, preparing dinner and checking e-mail. Already, there are over two dozen messages from colleagues many time zones away. And he still has to pack for his trip.

A Global Economy

In today's global economy, information has become both a currency and a product. Somewhat contrary to the normal

laws of supply and demand that dictate the value of other currencies and products, information has become self-perpetuating, in part because we have built technology that easily allows us to create new information without human intervention.

In fact, we've become so good at generating information that it becomes effortless and, as a result, we end up creating far more than we can manage.

Let me take a step back for a moment. While some may contend that there's no such thing as too much information per se, what does exist without question is an inability to manage the flow of information so that people can easily find what they are looking for and not feel overwhelmed. This is Information Overload.

Information Overload throttles productivity, reduces our capability to absorb and learn, puts our physical and mental health at risk, and interferes with personal and business relationships.

Research that I conducted at Basex, the research firm where I serve as chief analyst, has found that the costs of Information Overload are extremely high, in terms of both dollars and human costs. Indeed, according to research published by Basex in December 2010, Information Overload cost the U.S. economy \$997 billion per year.

As the tools we use beep and blurt, day in and day out, one competing with the other for a moment of the knowledge worker's day, they take a toll, not only emotionally and intellectually but on the bottom line as well.

The changes in how we use and view information that will happen over the next half century will not only reshape the globe but turn it inside out. This will in turn change how we view the concept of home, our home and work lives, our business and personal relationships, and perhaps even our national loyalties.

GREAT MOMENTS AND MILESTONES IN INFORMATION OVERLOAD HISTORY

Prior to the 1800s, the tools used by knowledge workers required much effort on the part of the user. Indeed, the earliest knowledge workers used stone, chisels, quills, and parchment to store information. To them, these tools were true innovations and dramatically increased their ability to create, share, and distribute knowledge.

Transmitting information over a distance in earlier days was also tricky. Sending a message might have involved beacon fires, flags, carrier pigeons, drums, mirrors, or even a man on a horse. Clearly, despite the occasional hard drive crash, today's users have it relatively easy by comparison.

Our timeline navigates through many centuries of recording information and details the many innovations that allowed mankind to create, store, and distribute more information to more people. Of course, the easier it became to publish information, the more overloaded we became.

Today, innovation comes quickly and today's state-of-the-art tools become yesterday's news in a nanosecond. What will be available even a few years down the road is hard to fathom, and what we will be using 20 or 30 years hence is the stuff that science fiction is made of. I have no doubt that the individual who updates this timeline in 2084 will look back at today's rather primitive tools and smile knowingly.

Year	Development	Why it was relevant
4000 BCE	Clay tablet	Allowed information to be recorded and stored for the first time
3500-3000 BCE	Papyrus and reed brushes or pens (Egypt)	More portable and easier to use than clay and stone
2697 BCE	Ink (Tien-Lcheu, China)	Further advanced the recording of information