EXECUTIVE SUMMARY

Intel's War on Information Overload: A Case Study

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For the knowledge worker, each day is filled with demands on his time. From colleagues stopping by to discuss both work and social matters, attending scheduled and unscheduled meetings, and the constant stream of electronic communication from e-mail and instant messages to tweets and texts, the ability to focus and accomplish tasks in today's work environment is constantly being challenged.

Information overload, a problem that results in an inability to concentrate on tasks and stay focused, is a massive problem in the twenty-first century; recent Basex research shows that Information Overload costs the U.S. economy ca. $900 billion per year. A large part of that figure is the cost of unnecessary interruptions and resultant recovery time. Recovery time can be as much as ten to twenty times that of the original interruption.

The tools that knowledge workers use turn out to be the source of many of the interruptions that cause them to lose focus; e-mail, instant messaging, and phone calls all provide distractions, yet all are also indispensable to work. The knowledge worker's perception of how these tools affect his productivity is often inaccurate, leaving him unaware of the disruptive effect that all these interruptions may be having on his day.

Since 2003, Basex has interviewed and surveyed over 5,000 knowledge workers at over 1,000 companies worldwide in order to generate a general understanding of the dynamics at play in terms of how knowledge workers are using their tools, how distractions and interruptions affect their work habits, and how workers can effectively maximize the utility of technological tools while minimizing their invasive and often counterproductive nature.

A few pioneering companies became aware of the impact that interruptions and distractions are having on their bottom line early on. One such organization, Intel, started to address these issues as early as 1995 and attempted to instill e-mail etiquette and usage strategies. Since then, Intel has experimented with e-mail usage programs, Service Level Agreements (SLAs) to reduce expected response times, and pilot programs aimed at providing uninterrupted time and reducing e-mail overload.

Before commencing with a recent round of pilot programs, Intel conducted employee surveys to better understand the participants' work environment. The data from those surveys paints a picture of a team of knowledge workers that suffers from symptoms of Information Overload, including a dearth of uninterrupted time to complete tasks and the absence of clear strategies to deal with the problem. The data provide an important snapshot that illuminates both the range of sources of distractions and the information sources that workers encounter during their workday, as well as how they are dealing with them.

Information Overload describes an excess of information that results in the loss of ability to make decisions, process information, and prioritize tasks. It decreases knowledge workers' effectiveness and efficiency and causes diminished comprehension levels, compromised concentration levels, and reduced innovation.

Technology has done much to increase levels of Information Overload and this is evident by looking at the hundreds of messages (e-mail, instant, social network, telephone, among others) received and processed each day by individual knowledge workers.

Many of these messages take the form of interruptions to the knowledge worker. Although distracting, ultimately some interruptions are necessary; a knowledge worker is not a solitary figure existing in a bubble. Information from the outside world is what powers knowledge work and it must be obtained one way or the other. Interruptions can provide critical information and function as a catalyst for a break that allows necessary mental recharging. Through a chance interruption, the knowledge worker can also be exposed to new content that may trigger a knowledge accident, e.g. where a connection is made that may have otherwise gone unseen.

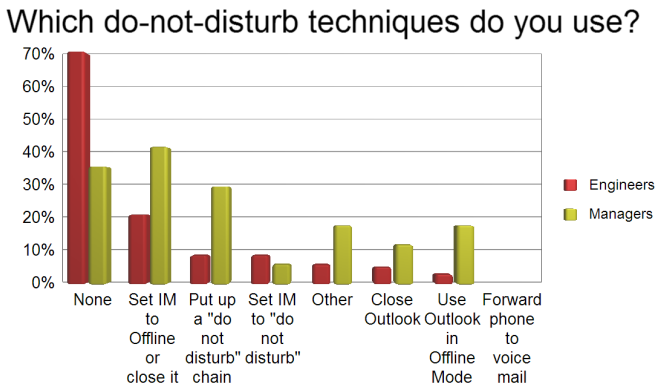

Chart 1 – When surveyed before the pilot, managers at Intel were more likely than engineers to report use of do-not-disturb techniques.

Surveys of knowledge workers conducted by Basex in 2006 and 2007 reveal that 88% depend heavily on information obtained from human interactions such as informal discussions, team meetings, and presentations. These sorts of human interactions remain the leading sources of information that the respondents needed to do their jobs.

Despite the need for such interaction, interruptions and the resultant recovery time are extremely disruptive and can take up to 28% of a work day away from a typical knowledge worker (according to studies conducted by Basex in 2004 and again in 2006).

Disruptions come from a variety of sources, each with its own unique characteristics. Common sources include

- E-mail
- Meetings
- Face-to-face interaction
- Instant messaging (IM)
- Phone calls (landline phone and mobile)

INTEL AND INFORMATION OVERLOAD

Intel has long been a leader in the silicon revolution and in the adoption of knowledge sharing and collaboration technologies. Intel also has a history of developing programs and practices to deal with Information

Overload issues for well over a decade, and for good reason, Intel's own research indicated that each knowledge worker loses ca. eight hours per week due to Information Overload, which for a company its size would result in a cost of $1 billion per year.

In 1995, Nathan Zeldes, who was at that time an IT staff member for Intel in Israel, started developing what he refers to as "first generation solutions" to deal with the problem of e-mail overload. Zeldes traces his work on Information Overload issues to the introduction of IBM PCs to the workplace. The presence and use of the computers quickly created new and unforeseen problems, including that of Information Overload.

Intel's early programs in Israel were well received by management, which had found itself increasingly impacted by e-mail overload. Then, in 1999, these programs came to the attention of the EMEA (Europe, Middle East, Africa) marketing group, and Zeldes was asked to revive and update the 1995 program. It was then launched as a pilot program in Europe.

The experience in the EMEA region led to the development of the YourTime program, which was targeted at the entire corporation. This was a top-down program that began at the senior executive level and worked downward. It was comprised of three components: awareness training for e-mail etiquette, discussion sessions within teams in order to pinpoint ways to improve communication and reduce overload, and specific training for the efficient use of e-mail software. The program was implemented through in-person training and a Web-based training tool specifically developed for the program, and was sponsored by the CIO.

Zeldes discovered through internal Intel surveys that the typical Intel employee was receiving 50-100 e-mail messages daily and spending 20 hours per week handling e-mail, of which 30% (of the messages) were unnecessary. Top executives reported receiving up to 300 messages per day. These survey numbers were drawn from 2006; it is likely that the numbers are higher now.

More recently, under Zeldes' aegis, Intel launched a series of seven-month-long pilot initiatives aimed at combating Information Overload from a different angle. The three pilot programs were:

- Quiet Time
- No E-mail Day (NED)
- E-mail Service Level Agreement (SLA)

DISTRACTIONS AND INTERRUPTIONS

Depending on one's perspective, incoming e-mail can be either an annoyance, such as a message that could have been easily conveyed verbally by walking across the hall, or a force multiplier, such as the use of e-mail to stay involved in multiple tasks at once.

Most knowledge workers significantly underestimate the impact of distractions and interruptions on their work. This occurs for two reasons: first, the phenomenon of recovery time is not well understood and recognized, and second, interruptions are so prevalent that the knowledge worker assumes that they are normal and unavoidable.

In pre-pilot surveys at Intel, 46% of respondents said that e-mail was somewhat of a problem for them, and 14% said that it was a big problem. This sentiment of looming e-mail overload by over half those surveyed shows the necessity of efforts such as Intel's recent round of pilot programs. Perceptions of, as well as reactions to, the pilots showed significant variation when broken down by role, in this case managers and engineers.

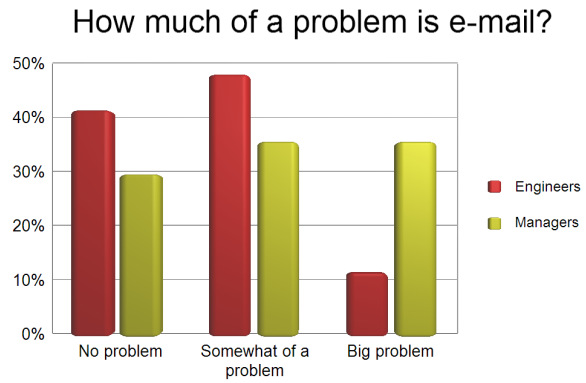

Chart 2 – Before the start of the No E-mail Day pilot, more managers than engineers perceived e-mail as a significant problem.

INSTANT GRATIFICATION

In 1973 the launch of Federal Express started a movement that increased the expectation of instant gratification by delivering packages that "absolutely, positively" had to be there overnight (before then, if you wanted something delivered overnight, you had to bring it to its destination yourself). Today, the need for instant gratification is reflected in the attitude of knowledge workers who expect a reply to an e-mail within minutes of hitting the send button.

This behavior is compounded by an entire generation of knowledge workers who believe that everything they are doing is both urgent and important at the same time, perhaps a reflection from an era where Mr. Rogers told them that they were "special."

This leads otherwise reasonable people to interrupt their colleagues because what the other person is doing couldn't possibly be as urgent and important, a behavior exemplified in the actions of knowledge workers who send an e-mail and two minutes later telephone or instant message as if the building were on fire.

Most if not all knowledge workers are, on some level, aware of the distractions, interruptions, e-mail overload, and general Information Overload that adversely impact their efficiency and effectiveness. What

they do to counteract the problem is generally neither consistent nor well thought out, in part because few comprehend to which extent these problems are impacting them. Indeed, based on a 2008 Basex survey, 75% of managers have little or no idea of how much Information Overload-related problems cost their organizations.

Intel has ambitiously confronted Information Overload with its efforts over the last 14 years, and its most recent round of pilot programs illuminate valuable lessons on how to deal with the problem.

This report explores the sources of information and interruptions that the knowledge worker encounters on a daily basis, as well as the efforts that Intel has undertaken to confront the resulting Information Overload and lost productivity.

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READY TO FOLLOW INTEL'S LEAD IN THE WAR AGAINST INFORMATION OVERLOAD?

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Intel's efforts to combat Information Overload began in 1995. The struggle against Information Overload is still a relatively new and uncharted field and, over the years, Intel has tried a variety of approaches. Some were more successful than others.

Learn how such initiatives as Quiet Time, No E-mail Day, and an E-mail Service Level Agreement impacted employees, and how successful they were in combating information overload.

In this 36-page report, Basex examines such critical issues as:

- Can you change people's expectations about e-mail reply times?
- Are mandated no e-mail days a good idea?
- How do you give knowledge workers more time for thought and reflection?

For this report, a Basex exclusive, Basex was provided with direct access to Intel personnel and exclusive access to surveys conducted before during, and after each program.

Individual and enterprise licenses are available for this report.
for more information. **call**
800 257-2334 ext. 125
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ABOUT THE AUTHORS

Jonathan B. Spira, CEO and Chief Analyst, founded Basex in 1983. The author of Managing the Knowledge Workforce: Understanding the Information Revolution That's Changing the Business World (Mercury Business Press, September 2005), he is recognized as one of the technology industry's leading thinkers and pundits, having pioneered the study of Collaborative Business Environments, the intersection of content, knowledge and collaboration within the enterprise and beyond. He is an authority on the productivity of knowledge workers and how information technology affects them, and helped create the Knowledge Worker Impact Quotient (KWIQ) to answer the needs of IT buyers for a better understanding of the impact tools and technologies have on both the workplace and on the people who use them. Mr. Spira, who directs all Basex research and analytic activities, is a widely published author and acclaimed speaker who makes frequent appearances speaking on the future of technology and has authored hundreds of papers on business and technology issues. He is the co-author of The History of Photography (Aperture, November 2001), which was named a best book of the year by the New York Times, and a graduate of the University of Pennsylvania. He conducted graduate-level research at the Ludwig-Maximilians Universität (Munich).

Cody Burke is a senior analyst at Basex. He conducts research and has co-authored reports on knowledge worker productivity, educational technologies, and information overload. He has done independent research on a variety of topics including open source intelligence, international affairs, and security issues. Mr. Burke received a M.A. in International Relations from Bond University in Australia.

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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