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ADDRESSING INFORMATION OVERLOAD IN CORPORATE EMAIL: THE ECONOMICS OF USER ATTENTION

A whitepaper by The Radicati Group, Inc.

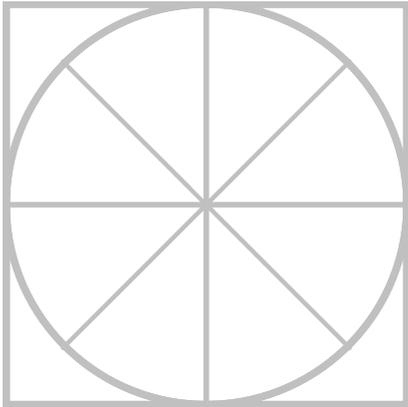


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INTRODUCTION

In one decade, e-mail has evolved from a niche messaging medium to a communications phenomenon that has an influence in every corner of the globe. Over the next four years, we expect that enterprises will spend more than \$17 billion on e-mail software, while the number of e-mail users worldwide approaches two billion people.

For most corporations today, e-mail is mission critical; without a stable e-mail infrastructure both internal and external communications can grind to a halt. But this increased reliance on e-mail has resulted in a quickly growing torrent of e-mail traffic, overwhelming users and slowing communications to a crawl. The primary culprit in this mess is not commercial spam, but more often mail exchanged between people in the same organization. Because of the sheer volume of e-mail traffic, users are often unable to identify important messages, letting time-sensitive messages sit in a crowded inbox.

This whitepaper will introduce an innovative solution that addresses the problem of e-mail information overload using economic principles such as a virtual currency. Unlike existing filtering technologies, this solution enables organizations to tilt the economics of e-mail in their favor.

In 2006, the average corporate e-mail user received 126 e-mail messages per day¹, an increase of 55% since 2003². If users spend an average of one minute to read and respond to each message, this flood of e-mail traffic will consume more than a quarter of the typical eight hour work day – with no guarantee that users actually read the messages that are most important. Additionally, if e-mail traffic continues to increase at this rate, the average corporate e-mail user will spend 41% of the workday managing e-mail messages in 2009.³

Figure 1, on the next page, shows the average percentage of each day that corporate users spend managing e-mail, in 2003, 2006 and 2009.

¹ The Radicati Group, “E-mail and Collaboration Corporate Survey, 2006 – 2007.” September 2006.

² The Radicati Group, “Corporate Messaging Survey, 2003 – 2005.” June 2003.

³ Assuming continued growth at the same rate and that users spend an average of one minute to manage each e-mail message, based on an eight hour workday.

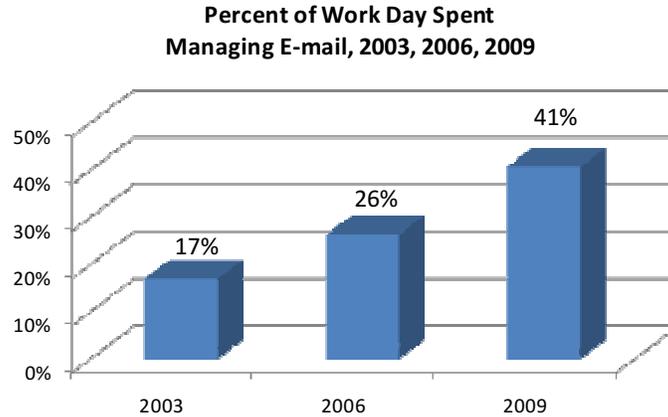


Figure 1: Percent of Day Spent Managing E-mail, 2003, 2006 and 2009

The inability to manage e-mail effectively not only consumes time, but can affect the quality of operations enterprise-wide. For example:

- Leads from sales are often communicated through e-mail, so missed messages can result in missed sales opportunities.
- Leaders are not able to cut through e-mail clutter to insure that teams focus on mission-critical information.
- Team resources are usually allocated through e-mail, meaning that poorly managed messages can render business teams ineffective.
- Innovations and ideas – the lifeblood of most organizations – flow throughout the enterprise via e-mail. A broken link in any part of this network can slow product development and the formulation of new strategies, ultimately affecting a company’s bottom line.

The corporate e-mail dilemma is inherent in the economics of e-mail itself and how cost is differentially borne by senders and receivers. The cost *to the sender* of creating an e-mail message is much lower than in the era of paper memos - messages can be composed in a matter of minutes or seconds. The incremental cost of sending messages, particularly to multiple addressees, is very low, as in the case of cc:’s, forwarded mail, and the notorious “Reply to All.”

This low cost makes it easy for e-mail users to send many messages, regardless of whether these messages are well-articulated, relevant or appropriate for business use.

These economics are problematic for e-mail *recipients*. While the cost of sending an incremental e-mail message is low, the cumulative cost of *reading* these many messages is very high. It can take several minutes to open, read, process and reply to each message, and this procedure, repeated hundreds of times, can consume the workday – diverting attention from critical tasks as well as missing important messages lost in the inbox clutter.

Although there are solutions designed for this problem, few are effective. Some corporations use e-mail filters to streamline message traffic, but these products are designed to block unsolicited messages, such as commercial spam, that fit a particular pattern or contain certain keywords. E-mail filters do not help e-mail users prioritize the e-mail traffic that gets through.

Some companies are experimenting with rules that restrict the size of the inbox, but this penalizes the recipient, rather than the sender. Others are using training and exhortation to discourage inappropriate use of the cc: line and “Reply to All” to reduce clutter. Others have instituted “e-mail-free Fridays.” The information overload problem is about human judgments of importance and human behavior, so purely technical solutions are not likely to succeed nor are restrictions on communication practical.

Many e-mail systems feature icons or flags that are designed to identify ‘important’ e-mail messages. But for these features, the economics of e-mail again come into play. These features are free to the sender, and are quickly overused, ignored by the recipients and therefore end up with no currency amongst users.

Additionally, e-mail flags provide no granularity – users have no idea how important a message marked with a flag actually is. As a result, the exclamation mark has become ineffective, no longer acting as a reliable method of assessing the importance of e-mail messages.

Other solutions that haven’t worked include costly behavior change programs forced on employees (e.g. attend workshops, incentive programs), automated message templates where delivery priority is given to people who use a particular format to write notes, and all AI programs that attempt automatic categorization of messages.

In this environment, the benefits of e-mail are increasingly mitigated by the time it takes for employees to manage e-mail messages. This is a growing problem for enterprises today, and in many companies key personnel are handcuffed to their e-mail inboxes, reducing productivity and slowing operations.

CHANGING THE ECONOMICS OF E-MAIL

To solve this growing problem, enterprises need to directly address the root causes of the problem. Most solutions today focus on helping recipients manage the e-mail deluge, none attempt to address the source of the e-mails; i.e. senders. Only by changing the economics of sending e-mail, and thus the behavior of senders, can one start to address the system-wide issue. But in order to manage the growing deluge of legitimate e-mail traffic from friends, coworkers and partners, businesses must instead focus on changing the economics of e-mail itself.

Imagine an environment where e-mail messages are prioritized based on the amount of money users are willing to pay to have a message noticed. Naturally, senders would pay more to have their most important messages noticed, while paying less for low priority or casual messages. Senders attaching a lot of currency to a message would tend to take time to ensure that the message is clear and concise in order to achieve the most ‘bang for the buck.’

On the receiving end, money attached to e-mails enables people to quickly assess the priority of each incoming e-mail. Messages sent with more money will tend to be read first, while messages sent with less money will be read at a later point if more time is available.

The relation between message priority and the monetary value of each message to the sender is easy to understand and beneficial for all parties involved. Users understand the value of money as a scarce resource, and therefore money becomes an effective tool to both signal importance and encourage senders to prioritize outgoing messages, give feedback and gain insight about what co-workers think is important. With this monetary structure in place, the interests of e-mail senders and recipients are aligned – important e-mails are not lost in a crowded inbox, while messages with a low priority are read at a convenient time for the e-mail recipient.

INTRODUCING SERIOSITY

Although a monetary-based prioritization system for e-mail makes sense in theory, this model is impractical to implement. Few users have the resources to pay for each message sent – and no enterprise has an infrastructure in place that can handle the exchange of currency with e-mail.

Enter Seriosity.

Founded in 2004, Seriosity is a Palo Alto, California-based company financed by leading venture firm *Alloy Ventures*. With a focus on improving enterprise collaboration, innovation and leadership, Seriosity designed a virtual currency system called **Attent**[™] that enables organizations to implement a monetary-based message prioritization system.

Attent uses lessons learned from economic and monetary policy, both in real and virtual worlds, to create an efficient new economy for enterprise collaboration. Using **Serios**[™], the virtual currency of the Attent ecosystem, the solution enables users to assign values to messages based on importance.

Attent users are given certain number of Serios every week. Serios are allocated equally to each user. Serios can be spent, saved or traded like a physical currency, and like an actual currency Serios are a scarce good that is valued among Attent users. Serios are traded using a secure, reliable financial system that keeps track of trades. And there are sophisticated monetary policies that insure the financial system stays healthy and the currency remains stable.

Serios are designed to be easily attached to e-mail messages, in order to communicate message priority. For example, an e-mail sent with 50 Serios is judged by the sender to be more important than a message sent with 10 Serios.

E-mail recipients can easily view the number of Serios sent with each message, and prioritize messages appropriately. In the few minutes before a meeting, for example, a user can quickly read and reply to the messages sent with the most Serios, in order to ensure that important messages are addressed quickly.

Of course, recipients will still pay attention to current cues about message importance, such as the name of the sender and its subject line; what's different with Serios is that the recipient can see exactly how much the sender wanted this particular message to be noticed. Because the

supply of Serios is finite and users must allocate their balance among many messages, the authentic intention of the sender comes through in a way not possible with other tools.

One of the exciting uses of the Attent system is that users have a new and extremely efficient way to give feedback to their correspondents. For example, if an e-mail recipient thinks that a new product idea sent with 50 Serios is valuable, they can reply with 60 Serios – a net reward of 10 Serios. On the other hand, if the e-mail recipient believes that a product idea sent with 50 Serios is not valuable, they can reply with something less than 50, including zero Serios.

In this way, senders and recipients quickly learn what is important to each other. This environment encourages e-mail senders to take the time to develop a strong, clear and concise argument that is more likely to generate a net Serio reward. This infrastructure for feedback is important in enterprises. Serios can be used to reward users with valuable ideas, while steering users in a different direction if their idea needs more work. For example, in a brainstorming session, team members can quickly see which ideas are most popular among colleagues based on the number of Serios rewarded for each idea.

In traditional e-mail environments, feedback requires the composition of additional e-mail messages and a lengthy explanation – a time consuming process that must be repeated constantly throughout the day. With Serios, e-mail recipients can quickly and objectively send feedback to e-mail senders – a more efficient process for both parties. Serios do not take the place of other effective forms of feedback, but allow people to more quickly collaborate on what each other thinks is important. People like it when they get a well-worded thank you note, but will appreciate it even more when it comes with a generous bouquet of Serios.

In summation, Attent facilitates one-to-one relationships while providing insight into the network of value exchange for the larger organization.

REAL WORLD APPLICATIONS FOR ATTENT

This section provides two examples of how Attent can be used in a corporation. We describe each scenario with and without Attent, and show the value that the solution brings to everyday business situations.

Getting the Attention of Hyper-Busy Executives:

In this scenario, an executive at a consumer package goods conglomerate is bombarded with messages throughout the day. These messages include critical information including a delay in the release of a new product, a critical customer care issue, and an interruption of the supply chain. However, messages that are not important, including personal notes, off-topic conversations, and forwarded non-work related messages also cloud the inbox.

The executive tries to diligently read and respond to these messages in the few minutes of free time she has between back-to-back meetings. However, much of this valuable time is wasted reading and replying to non-critical messages, while other critical, time sensitive messages remain unread in her inbox. As a result, key customer complaints go unaddressed, resulting in lost business, and supply chain issues are not resolved, which result in falling inventory levels and a drop in sales.

With Attent, the executive is able to make the most out of the few available minutes in her busy schedule. Between meetings, the executive can quickly sort her inbox to display the messages with the most Serious attached first. She quickly finds the message regarding product delays, customer issues and the supply chain interruption, and is able to reply to these messages in a timely fashion. Her quick response resolves the issues before they result in any product or inventory issues, or upset customers.

Brainstorming with Attent

This scenario follows the brainstorming activities of a high-tech company's marketing group. This talented team includes ten individuals from leading educational institutions, each with an impressive work history.

In theory, this group should be able to work freely to develop and refine ideas, ultimately producing strategies and products that benefit the corporation as a whole. However, the variety of personalities in this group makes brainstorming difficult – there are several outspoken members of this team and several softer-spoken workers, making it difficult to create a free and efficient marketplace of ideas.

In this group, outspoken members frequently clash with each other, while the ideas of other members get lost in the mix. As a result, the group is often unable to reach a consensus due to squabbling among members. When an idea is picked by the group, it is often due to the strength of an individual's voice, rather than the appeal of the idea itself.

In this environment, the talent of the group is wasted because all ideas are not heard equally. This creates hostility among team members, and slows innovation. In the competitive high-tech industry, this lack of innovation leads to product stagnation, ultimately resulting in falling sales.

Attent provides this group with a more effective environment for collaboration. Instead of the individual with the loudest voice winning, Serios provides each team member with an equal platform – helping the group to quickly reach consensus on important issues, refine ideas and determine which ideas have the most potential for success.

With Attent the ideas of softer-spoken team members are viewed and assessed by all team members. Likewise, outspoken team members are also given an equal platform to voice ideas. Instead of squabbling amongst each other, team members reply to each idea with Serios, enabling the group to see which idea has the support of the group as a whole.

In addition, some members suggest improvements to the original idea in their responses. The group responds to several of these suggestions with Serios, and these ideas are quickly adopted as well.

This example shows how Attent enables a marketing team to efficiently select ideas in a democratic manner. This leverages the talent of each individual team member, preventing squabbling among team members while raising the morale of the team as a whole. Attent also enables the team to refine ideas – enabling each team member to contribute. This helps to drive innovation within the company, ultimately resulting in new, highly successful product releases.

Table 1, compares these two scenarios with and without Attent.

	Without Attent	With Attent
Hyper-Busy Executive	<ul style="list-style-type: none"> • The executive’s inbox is overflowing with messages. • Precious time is wasted reading unimportant messages while messages critical to daily operations are left unread. • Customer service is affected, key supply chain and product issues are left unresolved. • Customers leave the company, and falling inventory results in lower sales. 	<ul style="list-style-type: none"> • The busy executive is able to make the most out of her few minutes of free time. • Messages can be sorted quickly, enabling the executive to address the most important messages first. • Time-sensitive issues are addressed quickly, resulting in high customer satisfaction and an uninterrupted supply chain.
Team Brainstorming	<ul style="list-style-type: none"> • Members of a marketing team in a high-tech company are having difficulty brainstorming. • Outspoken team members frequently clash with each other, making it difficult to reach consensus. • Softer-spoken team members are drowned out by others. • It is difficult for the team to develop ideas. • The ideas that are adopted are not agreed upon by all team members. 	<ul style="list-style-type: none"> • Each team member has an equal platform to voice ideas and receive feedback. • Team members can quickly reach consensus by rating ideas with Serio feedback. • Ideas can be refined through subsequent replies and feedback. • Marketing team operates more efficiently, leveraging the talent and ideas of each team member.

Table 1: Benefits of Attent in everyday business scenarios

DEVELOPING A NEW MODEL FOR E-MAIL

While the basics of Attent are easy to understand, the solution has potential far beyond e-mail. Seriosity designed Serios to be a currency for e-mail messages, but Serios can be used to buy, sell or trade any good or service. For example, Serios can be used for company auctions of scarce resources, such as conference or lab facilities, for internal prediction markets to track confidence in sales projections or the likely success of new ideas, for managing customer relationships to monitor contact with priority accounts, for corporate networking, and for organizational analysis to see which people and groups are instrumental to the exchange of value across groups (e.g. which people are the important liaisons between engineering and marketing).

Individual organizations can adapt Attent to their unique corporate culture. Serios can be used enterprise-wide in multinational organizations, within single company sites or within smaller departments or groups.

Serio transactions can also extend to Attent users outside of the organization. Since the Serio Bookkeeper manages all Serios in circulation worldwide, two organizations with Attent can send Serios back and forth via e-mail. This is a valuable scenario for users that manage large volumes of e-mail traffic from various corporate partners.

CONCLUSIONS

Corporations today are slowly but surely proceeding down the path towards pervasive e-mail inefficiency. As e-mail traffic figures creep up each year, key corporate employees will find a greater percentage of their day consumed by remedial e-mail management tasks.

Seriosity provides an innovative solution for the corporate e-mail dilemma. Attent provides an efficient and objective method for prioritizing e-mail messages, assuring senders that important messages are read, while preserving the valuable time of corporate workers. It also enables greater collaboration and fosters innovation among team members, helping organizations to drive innovation and profits.

Although Serios are a new concept, the efficacy of this virtual currency system is validated with every monetary transaction we complete. For years, e-mail has escaped the age-old adage that time equals money – to the detriment of e-mail users worldwide. Seriosity's Attent solution changes the economics of e-mail to ensure that the goals of e-mail senders and recipients are finally aligned.

APPENDIX: IN DEPTH WITH ATTENT

Attent is a hosted service that integrates with Microsoft Outlook. The solution is easily installed with a downloadable Outlook plug-in. This plug-in enables users to quickly and securely send and receive Serios through Outlook, view Serios attached to individual messages, and refer to statistics of other Attent users to guide their responses.

Serios are managed through the Serio Bookkeeper Server – a hosted server maintained on Seriosity’s secure collocation site. Once users install the Outlook plug-in and register with the Serio Bookkeeper, they are up and running.

The Serio Bookkeeper plays a central role in the Attent ecosystem. The Serio Bookkeeper keeps track of the number of Serios attached to each message, manages the balances of individual Serio users, and controls the supply of Serios worldwide. There are three key steps to sending a message through Attent.

1. **Sending a Message:** Attent users compose messages with Microsoft Outlook and the Attent Plug-In (Figure 2). In the message composition screen, users can select the number of Serios they would like to send to each person the message is addressed to, as well as people that are CC’ed on the message.
 - a. The Attent statistics of recipients are displayed in the Attent Plug-In, helping users to determine how many Serios they should attach to attract the desired amount of attention.
 - b. Once the number of Serios to be sent with the message is determined, the message is sent normally through Microsoft Exchange.

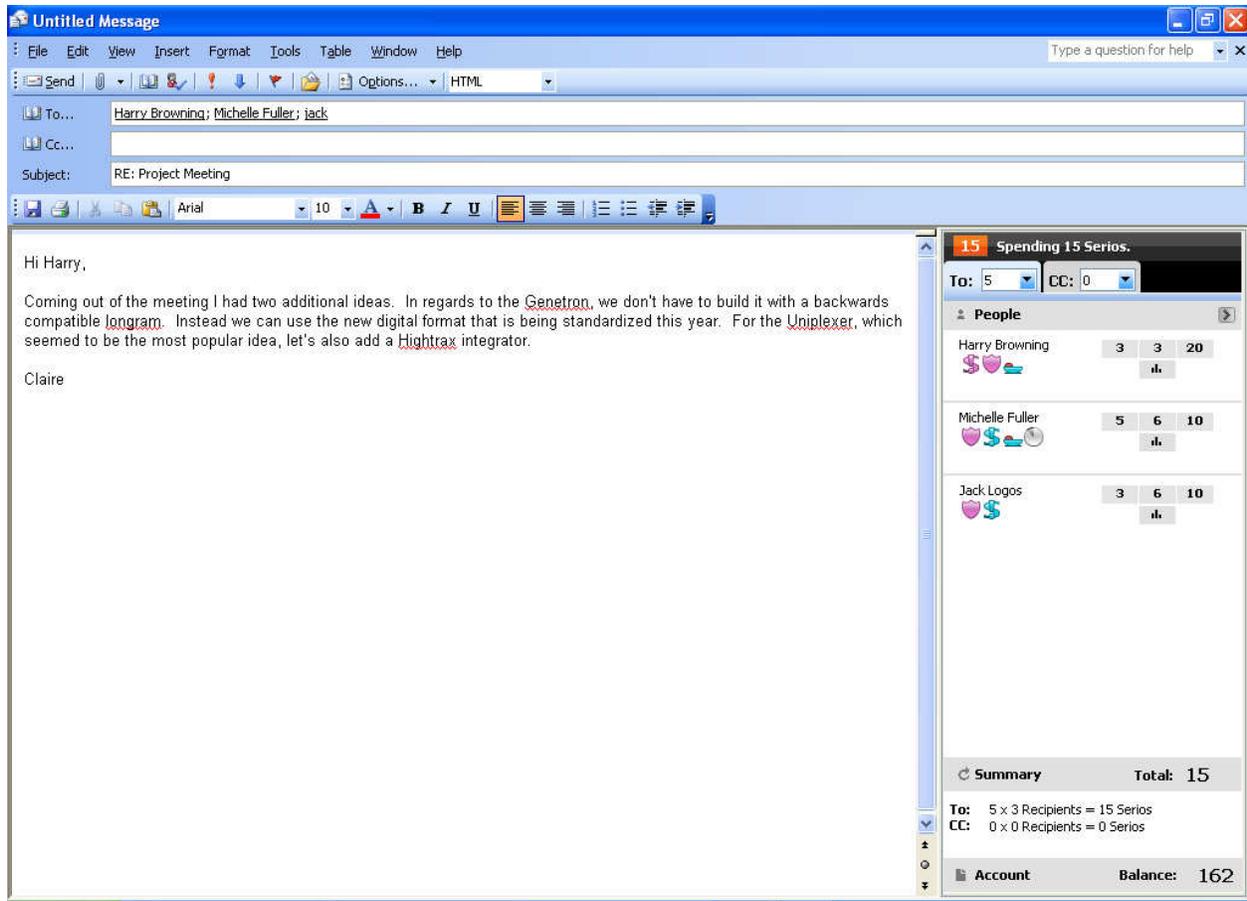


Figure 2: Sending Serios with a message

2. **Receiving a Message:** E-mail recipients receive messages normally through Microsoft Outlook with the Attent Plug-In (Figure 3). The Attent Plug-In creates a new column in the Outlook inbox that displays the number of Serios sent with each message. This column can be sorted so the messages with the most Serios are viewed first.
 - a. E-mail recipients can view the Attent statistics of e-mail senders, such as the average number of Serios sent and received, to easily assess the relative importance of each message.

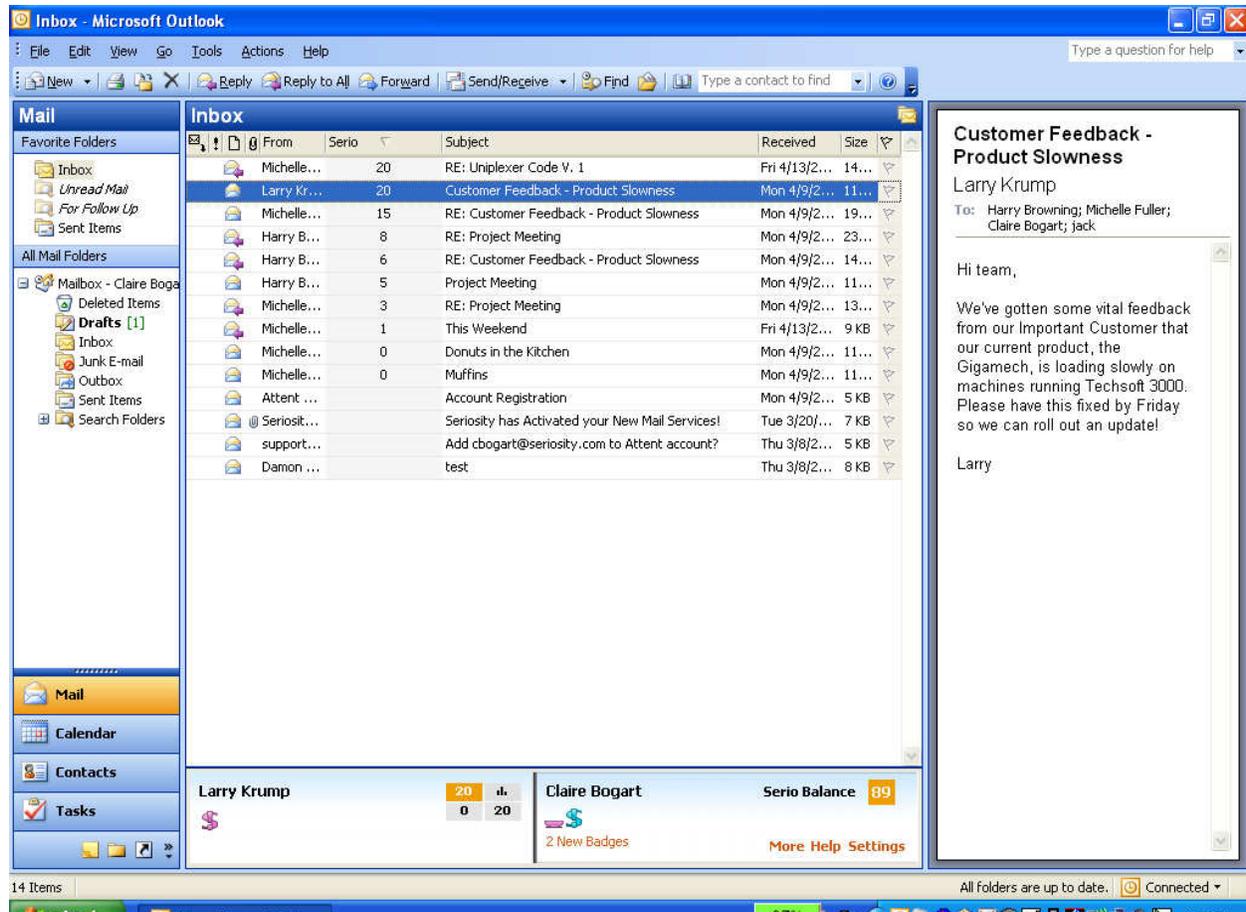


Figure 3: Viewing Serios in Microsoft Outlook

3. **Transaction Recorded:** The Serio Bookkeeper, which is securely hosted by Seriosity, confirms and records the transaction.

Attent users manage the service through a web-based administration console. This console enables users to view reports on Serio balances, transaction history and enterprise-wide statistics. This helps Attent users and administrators to get a better idea of how Serios are being used within the organization.

The Attent administration console also enables users to understand the flow of e-mail traffic within an organization. Attent provides users with an organizational web chart that shows connections made between different users via e-mail.

This view facilitates social networking, since users can see which Attent users are connected to others, and how strong these connections are. This feature can help to form new relationships with different users, or create synergies between departments or groups.

The social networking aspect of Attent is a key differentiator for the solution that further facilitates communication within an organization. The solution allows users to quickly find contacts and streamlines the flow of information enterprise-wide.