

Enterprise Communication and Collaboration Market Dynamics

*Peter O'Kelly
Senior Analyst
Application Platform Strategies
pokelly@burtongroup.com
<http://pkokelly.blogspot.com>
www.burtongroup.com*

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Enterprise Communication and Collaboration Market Dynamics



Communication and Collaboration

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Thesis

- Communication and collaboration are increasingly mission-critical for both organizational and personal contexts, providing opportunities to
 - Be more productive, responsive, and competitive
 - Optimize time and attention; minimize rework and thrash
 - Stay out of jail...
- Unfortunately
 - The terms are neither well-defined nor consistently used
 - Organizations have often been unsuccessful in related software initiatives
 - Mixed results in collaboration for years; communication degenerating recently
 - Most organizations are exposed to inadvertent complacency risks
 - Especially with consumer broadband and public wireless data services
 - The demands are growing more challenging, e.g., with expanding regulatory compliance requirements and expanding use of wireless/mobile devices
- Fortunately
 - A new communication/collaboration model is rapidly emerging
 - Channels, workspaces, and communication/collaboration in context
 - Standards-based and platform-integrated
 - Simpler and more cost-effective

Communication and Collaboration



Agenda

- Communication and collaboration in context
- Trends
- Projections
- Recommendations

Communication and Collaboration



Agenda

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Communication and Collaboration



Communication and Collaboration in Context

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Core concepts: back to basics (Encarta Dictionary definitions)

- **Communication**
 - “The exchange of information between individuals, for example, by means of speaking, writing, or using a common system of signs or behavior”
- **Collaboration**
 - “The act of working together with one or more people in order to achieve something”
 - Joint purposeful activity, typically documents, processes, and projects
- **Context**
 - “The circumstances or events that form the environment within which something exists or takes place.”

Communication and Collaboration in Context



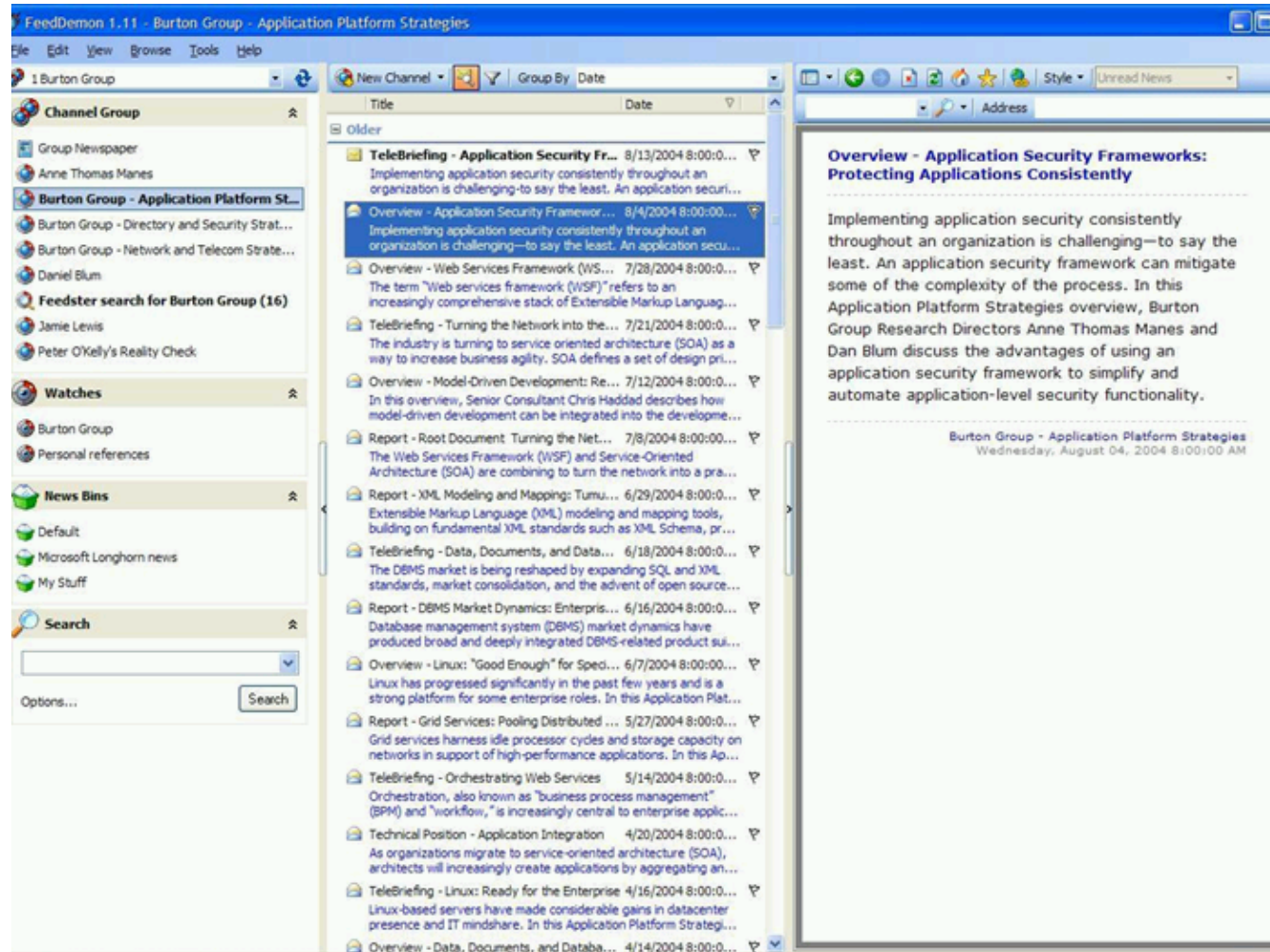
Communication and Collaboration in Context

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Core concepts: communication

- **Channels for communication**
 - Item transmission – e.g., post, message, or document
 - **Examples: asynchronous**
 - Email
 - RSS-based resources such as blogs and newsfeeds
 - Usenet NNTP (Network News Transfer Protocol)
 - Fax
 - **Examples: synchronous**
 - Instant messaging
 - Audio and video
 - Telephony (increasingly virtualized, e.g., Vonage, Skype)
 - **Ideally with supplemental and services for**
 - Filing, indexing, searching, and filtering
 - Unread (new activity) indicators/marks
 - Subscriptions and alerts

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Slide 7



Communication and Collaboration in Context

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Core concepts: collaboration

- **Workspaces for collaboration**
 - **Shareable virtual spaces**
 - Containing artifacts (e.g., documents) and tools for group tasks such as discussions, file sharing, and project calendars
 - Typically defined with membership and role (e.g., manager, participant) privileges
 - Often with presence awareness (ideally global and local) and synchronization services
 - Sometimes used by one person (probably using multiple devices)
 - **Goal-focused: usually on documents, processes, and projects**
 - Ideally with flexible subscription and alert options – to be advised of changes to pertinent workspace contexts (e.g., project content, schedule, or status)
 - Conducive to collaborative swarming: subscribe, alert, assemble, act, publish

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Core concepts: collaboration

- **Workspace examples**

- **Asynchronous**

- EMC Documentum eRoom
 - Groove Virtual Office
 - IBM Lotus Notes/Domino databases
 - Microsoft SharePoint workspaces
 - Socialtext and other wiki-based offerings
 - Traction Software

- **Synchronous**

- IBM Lotus Web Conferencing (a.k.a. Lotus Sametime)
 - Macromedia Breeze
 - Microsoft Office Live Meeting
 - Oracle Collaboration Suite (sync and async)
 - WebEx

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Communication and Collaboration in Context

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Core concepts: communication and collaboration categories

	Communication	Collaboration
Synchronous	<p>Channels for instant messaging, telephony, audio/video chat E.g., IBM Sametime, Microsoft Live Communications Server</p>	<p>Workspace-based conferencing and application sharing E.g., IBM Lotus Web Conferencing Service, Microsoft Live Meeting</p>
Asynchronous	<p>Channels for email, RSS syndication, alerts/notifications E.g., IBM Lotus Notes, Microsoft Outlook</p>	<p>Workspace-based environments for sharing documents and tools E.g., IBM Lotus Domino, Microsoft SharePoint</p>

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Core concepts: combining categories

- Workspaces and channels are complementary
 - Communication is often conducive to collaboration
 - E.g., an item in a communication channel, describing a relevant real-world event, triggers a new collaborative project
 - Examples: customer RFP (requests for proposal), competitive product update, regulatory change, inventory outage (likely via application communication with other applications and/or people), or other potentially business-impacting events
 - Collaboration commonly results in communication
 - For both successful and unsuccessful collaborative endeavors
 - "Bad news should travel faster..."
 - Often leading to further communication => collaboration cycles

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Core concepts: combining categories

- But channels and workspaces are not interchangeable
 - Collaboration in channels is usually ineffective
 - E.g., email is ineffective for collaborative endeavors
 - Information dissipation among email inboxes and folders
 - No consistent record of activities or artifacts
 - Worsening signal-to-noise ratio with spam (and “occupational spam”)
 - Communication in workspaces is constrained
 - Although most workspace-oriented products/services support subscription-based channel/item-oriented updates, e.g., email newsletters and RSS feeds

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Core concepts: keeping in context

- **Goal: work at a level of abstraction that**
 - **Consistently sustains focus on real-world concepts and tasks, rather than technology/ implementation details**
 - E.g., users work in terms of product trials, R&D initiatives, regulatory processes, and sales reports, not software applications/tools and files
 - **Unobtrusively captures metadata in context**
 - Using consistent goals, models (data/schema and process), and classification schemes (taxonomies)
 - Rather than requiring redundant (and error-prone) content capture activities
 - **Flexibly enables users and developers to work in their preferred tools and environments, rather than tool/task-switching for communication and collaboration needs**
 - **Seamlessly makes other resources – information and people**
 - Accessible in context
 - Across geographical and organizational boundaries

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Core concepts: context

- **Contextual**

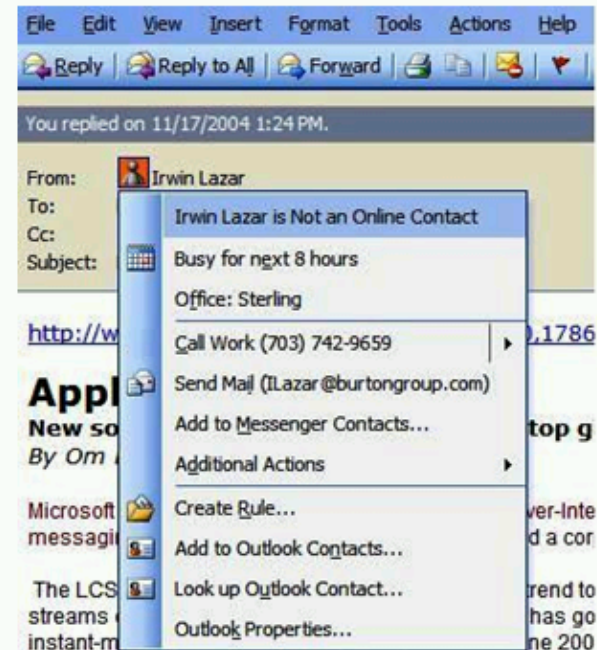
- Augmenting current tools and applications with communication and collaboration capabilities
- The same model can be used with transactional and workflow applications, e.g., SAP

- **In this example**

- Outlook 2003 with Exchange providing calendar data
 - Additional options would appear if Irwin and I had also used Live Communications Server

- **Applicable to**

- Portal clients
- Transactional clients
- ... all user contexts



Communication and Collaboration in Context



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The emerging communication/collaboration/content picture



Communication and Collaboration in Context



Reality check

- **These concepts are all reasonable and intuitive...**
 - This is how people have been working together for centuries, after all
 - Admittedly often with large administrative support staffs and significant place/time/coordination constraints, in the past
- **... and yet**
 - Most organizations and individuals currently face considerable communication and collaboration challenges
 - Especially small- to medium-sized businesses, which often have more mission-critical communication and collaboration needs
 - The infrastructure and tools required to productively, reliably, robustly, securely, and seamlessly foster communication and collaboration are exceptionally deep and integrated
 - One-off/project-specific requirements may seem straightforward, but optimized communication and collaboration requires a broader perspective

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Current causes of communication and collaboration complexity and chaos

- **Costly, complex, and closed enterprise-oriented infrastructure products**
 - Generally proprietary and not ideal for departmental/ad hoc needs
- **Artificial, arbitrary, and counterproductive boundaries**
 - Such as distinct and often incompatible offerings for communication, collaboration, and content management needs
- **Good-enough, often Internet-based alternatives**
 - Which naturally emerged to address the otherwise under-served market requirements, and resulted in even more islands of communication, collaboration, and content
- **Explosive growth of channels and workspaces**
 - Coinciding with several challenges (spam, viruses, and other security challenges) that have made email, the primary channel, far less effective

Communication and Collaboration in Context



Communication and Collaboration in Context

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Current causes of communication and collaboration complexity and chaos

- **Divisive devices and nettlesome networks**
 - Devices that extended communication channels but weren't broadly useful for collaboration
 - Expensive and cumbersome wireless networking, further complicating communication/collaboration tools
- **Incumbent vendor strategy shifts and stability concerns**
 - IBM and Microsoft, the leading communication/collaboration incumbents, have both made significant changes to their products and strategies
 - Growing commoditization and standardization have created strategic challenges for many smaller and/or more focused competitors
- **Ineffective etiquette and incentive systems**
 - Longstanding challenges in communication and collaboration contexts
 - Often result in people resorting to least-common-denominator tools (typically email, phone, instant messaging, and fax) that are not well suited for collaboration
 - And exacerbate information dissipation problems

Communication and Collaboration in Context



Communication and Collaboration

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Analysis agenda

- Communication and collaboration in context
- Trends
- Projections
- Recommendations

Communication and Collaboration



Trends

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“The future is already here, it’s just unevenly distributed”*

- Many organizations and individuals are already more productive and responsive due to deft deployment of communication and collaboration technologies, e.g.,
 - Enterprises fully exploiting the capabilities of IBM Lotus Notes/Domino and Sametime
 - Multinational organization project teams using Groove workspaces
 - Organizations using Microsoft’s 2003/2004 products
 - Burton Group analysts routinely participating in vendor briefings using Web conferencing services from vendors such as Macromedia, Microsoft, RainDance, and WebEx
 - Individuals using AOL Instant Messenger, Apple iChat, MSN Messenger, or Yahoo! Messenger for text chat and video communication

*William Gibson

Trends



Trends

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“The future is already here, it’s just unevenly distributed”

- Perhaps the most compelling leading indicator: multi-player games over the Internet
 - E.g., Microsoft Xbox Live and Sony PlayStation online gaming
 - Immersive multimedia workspaces with seamless communication/ collaboration tools
 - Users focus on collaborative (albeit often combative...) activities and are not distracted by tool boundaries
 - Shared workspaces
 - Real-time multi-party voice over IP
 - Presence awareness and group/individual instant messaging
 - Real-time collaboration within persistent workspaces – users can suspend and resume activity

Trends



Trends

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Emerging communication and collaboration requirements and challenges

- Carrot: unrealized longstanding goals – securely, reliably, and cost-effectively address goals such as
 - Productivity and responsiveness
 - Optimize time and attention; minimize counterproductive interruptions/thrash
 - Address increasing information and communication intensity and complexity in both work and personal contexts
 - Do more with less; enable more self-service
 - Reduce travel and entertainment expenses
 - Flexibly and securely support virtual teams
 - Fully exploit emerging mobile/wireless devices

Trends



Trends

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Emerging communication and collaboration requirements and challenges

- **Stick: rapidly-expanding regulatory compliance requirements and competitive requirements**
 - **New options – and often requirements – to record *everything* may be the next communication/collaboration “killer app”**
 - **Stringent record and digital rights management challenges**
 - For all types of communication and collaboration
 - New business opportunities
 - For vendors such as Akonix, FaceTime, and IMLogic, which address the intersection of organizational and public communication channels
 - For myriad vendors focused on Sarbanes-Oxley, HIPAA, and similar regulatory acts in other business domains
- **Industry category-level competitive dynamics: first movers in more effectively exploiting communication/collaboration tools often establish significant competitive advantages**

Trends



Trends

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Compelling convergence

- Back to basics: broad industry convergence toward a simpler and more robust model
 - An improved form-follows-function fit
 - Channels for communication
 - Workspaces for collaboration
 - Communication and collaboration in context
 - Also exploiting and capturing more metadata in context
 - Architecturally
 - Enterprise offerings moving to a distributed DBMS foundation
 - Designed to support anywhere/anytime/any device usage
 - Integrated with leading developer tools (e.g., Visual Studio and Eclipse)
 - Supporting key standards ranging from SIMPLE to XML Schema

Trends

Trends

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Pervasive Collaboration Capabilities

Broad range of easily maintained solutions

Integrated communications



- ▶ IM/e-mail
- ▶ AV/Web conferencing
- ▶ Telephony/voicemail

Collaborative workspace



- ▶ Meeting workspaces
- ▶ Team sites
- ▶ Project management

Access to information and people



- ▶ Search info/people
- ▶ Document libraries
- ▶ Notifications/alerts

People-driven processes



- ▶ Flexible forms
- ▶ Web services integration
- ▶ Portfolio management



The diagram shows a 3D structure with two layers. The top layer is blue and labeled "Shared collaboration services". It contains two columns of text: "Presence Rights management" and "Workflow Personalization". The bottom layer is green and labeled "Infrastructure services".

Source: Microsoft

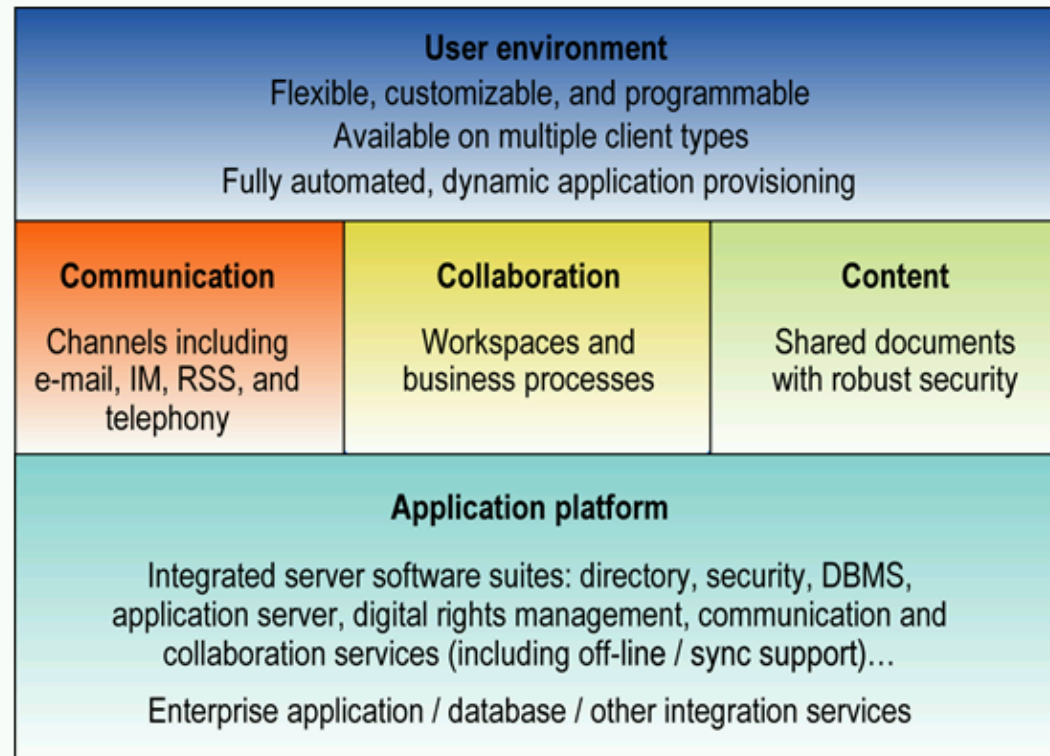
Trends



Trends

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Compelling convergence: platform-wide implications



Trends



Trends

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Compelling convergence

- **Growth of cost-effective and good-enough alternatives**
 - **Blogs and wikis for communications and collaboration**
 - Simplistic in comparison with traditional enterprise offerings
 - But useful for many communication/collaboration contexts
 - **Hosted services, including**
 - Traditional enterprise-oriented offerings, with much lower cost and complexity
 - Emerging alternatives such as blogs and wikis
 - ~P2P real-time communication offerings such as Skype
 - **Free and open source alternatives**
 - Ranging from *ikis (wikis, blikis, kwikis, etc.) to open source Microsoft Exchange clones
 - Another market in which consolidation, commoditization, and standardization is producing free and open source alternatives
- **Reality check: all of these developments also produce even more content, communication, and collaboration activity that needs to be factored into overall organizational plans**

Trends



Trends

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Compelling convergence

- **MSN Spaces and MSN Messenger 7.0 beta example**
 - Contact cards
 - Easy to scan for blog updates
 - One click to create new blog post or go to personal space
 - Multimedia – text, links pictures, ...
 - Free
- **Consumer-oriented offerings are leading indicators of what's coming next in enterprise-oriented tools**



Trends



Trends

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Rapid evolution

- User skills and expectations
 - Penetration of PCs and Internet at home and in schools
 - Most people entering the workforce today are already using email, browser, chat/discussion and instant messaging tools, mobile/wireless devices (e.g., with SMS text messaging)
 - For organizations: less of a user conceptual model and training challenge
- Etiquette
 - Growing appreciation: do unto others, in terms of optimizing time and attention, without compromising security, privacy, and respect
- Incentive systems
 - As part of broader (sometimes “knowledge management”) initiatives
 - Reward people who exemplify best practices

Trends



Communication and Collaboration

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Analysis agenda

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Communication and Collaboration



Projections

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Increasingly a platform-based choice for enterprises

- **Communication and collaboration trends align with platform themes including**
 - Security framework and services: platform instead of per-application
 - Identity (including groups and roles), authentication, access control...
 - Virtualization
 - At multiple levels, ranging from dynamically provisioned rich client applications to telephony
 - Key to avoiding *Batman Utility Belt* syndrome, with $N * M$ devices where N = tool types and M = usage contexts
 - SOA, schema-based, loosely-coupled integration
 - Platform-based services for
 - Presence, rendezvous, and session initiation
 - Synchronization/replication
 - Meetings, conferencing, and shared applications/tools
 - Workflow and orchestration
 - Subscription and notification

Projections



Projections

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Growing need for autonomous operation

- **Goals**
 - **Fully exploit device capabilities – local processing, storage, etc.**
 - Gestalt, as more resources are collected and organized – PIMs (personal information managers) on steroids
 - **Productively work when off-line**
 - Even with wireless Internet service on flights, you'll still be occasionally off-line for the foreseeable future, and you won't always have trusted/secure/cost-effective network access
- **Synchronization is critical**
 - **Beyond the basics (email, contacts, and calendar), to include workspaces and ever-expanding repositories of *your stuff***
 - **Non-trivial complexity and not uniformly well done today**
 - And rapidly getting more complex, e.g., a person with 2 devices is, architecturally, a distributed, multi-user scenario

Projections



Projections

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Metamodels matter more

- **Form follows function**
 - Some tools and services can be bolted on, e.g., presence and text chat
 - But a cohesive/comprehensive approach is intricately integrated and requires an elaborate metamodel
 - Expect to see a hypertext renaissance
- Lots of subtly deep dimensions, e.g.,
 - Access control for individuals, groups, and roles
 - And some applications require dynamic, content-based access control
 - Distributed (and disconnect-able) model-view-controller
 - Robust and secure mobile support is subtly complex
 - Multifaceted tools and compound documents
 - Flexible support for versions; locking and isolation levels; conflict detection and resolution
 - Personalization with optional enterprise-compatible central management/integration
- **Reality check: all of this must be presented in an intuitive and appealing user experience**
 - Or the tools and applications it won't be used effectively (or happily...)

Projections



Projections

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Etiquette and incentive systems will remain pivotal

- One constant, amid the changes: etiquette and incentive systems will continue to make or break communication/collaboration initiatives
 - The new tools make it much easier for users to communicate and collaborate in context, and for developers to exploit and capture more metadata in context
 - But even the simplest tools will be of limited utility if cultural and incentive systems don't encourage sharing and cooperation
- Etiquette is essential
 - Otherwise communication/collaboration can easily degenerate into flame-fests and information dissipation
 - All participants must also be cognizant and respectful of digital rights management

Projections



Analysis agenda

- Communication and collaboration in context
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Communication and Collaboration



Recommendations

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Create a comprehensive communication and collaboration strategy

- Bring all related domain/subject matter experts together and work with a common, holistic perspective
 - Communication/collaboration impact messaging, conferencing, content/document/knowledge management, portals, workflow, business process automation, telephony, digital rights management, security, privacy...
 - Don't arbitrarily distinguish among sync/async, ephemeral/persistent, or intranet/Internet, they're all part of the same fabric
 - Account for work dynamics, e.g., workspace-based collaborative activities that follow channel-based communication
 - **Work to develop an integrated and comprehensive strategy ASAP**
 - Assume many of the remaining, historical constraints will fade away
 - Expect next-generation wireless/mobile devices to be explosively popular
 - Don't expect world governments to slow or reverse regulatory trends...
 - **Practice what you preach**
 - Use communication and collaboration tools to formulate the strategy

Recommendations



Recommendations

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Plan for change and heterogeneity

- Few enterprises are likely to “rip and replace” existing communication/collaboration infrastructure
 - Vendors such as CASAHL are well positioned to help enterprises integrate, extend, and migrate collaborative applications and content
- No organization can dictate product/service choices to all of its customers and partners
- With major transitions in the product portfolios of IBM and Microsoft, and with simpler and often free alternatives expanding for some communication/collaboration contexts, plan on having to accommodate more rather than fewer products and services

Recommendations



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Conclusion

- Communication and collaboration are moving from complexity and chaos to compelling convergence
- IBM and Microsoft are poised to continue leading in enterprise communication/collaboration contexts
 - In what's increasingly a platform-aligned domain
- Several free, open source, and specialized initiatives/vendors are appropriate for non-enterprise contexts
 - And can also complement enterprise-oriented products
- The workspace/channel/contextual model will produce a resurgence in communication and collaboration for both organizations and individuals

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Questions and Answers

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Submit text questions using the “Ask a Question” button.

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Questions and Answers

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Survey