Tools for Teams: Beyond the Email Bottleneck

by Anthony J. Christopher, Digital Places

"I can't find that spec I'm supposed to review."

"Where is the latest version of the project plan?"

"Our remote team members aren't getting all the docs!"

"Email is a pain – which of these attached files do I use?!!"

Sound familiar? They're all-too-common issues project teams experience as they work together. Collaboration is central to their work—reviewing deliverables, communicating status, dealing with issues. But talk to team members from any given project long enough and the same frustrations are heard again and again. Seemingly simple tasks become arduous chores.

Teams that rely on email as the primary networked tool to support their work are handicapped; the above cries are obvious signs that email is not enough. It's simply inadequate to support the collaborative needs of many project teams; and all organizations lose value.

Email undermines the centralized accumulation of knowledge that could benefit the organization both during the project and long after it's over. Organizations that have not evolved from email to a broader set of networked tools face lost opportunities and hidden costs:

- Long start-up times required for new members joining complex project teams
- Valuable materials and lessons-learned from past projects, now buried in personal files
- Difficulty of sharing knowledge between groups across the organization

Amazingly, nearly twenty years since the dawn of the Web—which started a gusher of server-based, networked applications using Web standards for communicating and sharing information—we still do not have one term for these ever-more-powerful tools.

While "Networked Tools" is not a common term, we use it to connote a range of applications like file repositories, databases, and calendars, and sometimes real-time communications capabilities like instant messaging and shared display. They enable project teams to center their work around a server instead of dozens (or hundreds) of individual email inboxes. When we apply these tools to collaboration all the project documents and information become server-based—always available to all team members. When we apply them more broadly toward

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organizational knowledge management they become organized repositories, accumulating and creating collective institutional knowledge from intellectual assets that currently walk out the door each evening.

As the application of the tools become more mission critical, the solutions we're searching for become less about the tools themselves, and more about how we use them. “Networked Tools System” is the concept we use to describe an integrated implementation approach—both the tools themselves and the processes by which those tools are managed and used. Neither is sufficient alone. If your organization does not seriously take on managing the use of the tools, even the most elegant networked tools will be ineffective; if your organization embraces tools management, you’ll make great strides even with the simplest networked tools.

By integrating the *management* of the networked tools into your organization along with the tools, you control the productivity and assure the quality of deliverables from your production processes**.** Until your organization invests the management effort and worker time to develop rigorous processes around use of networked tools, it will suffer reduced productivity and asset yield on all information-based deliverables.

This article provides a step-by-step approach to planning a **Networked Tools System** for your organization. It provides an overview of the key factors for an effective Networked Tools System; defining tools and management needs; building support; and creating the infrastructure for successful selection, deployment, and adoption of whatever tools you’ll use. These five steps guide you through developing a plan that will relieve the pains your teams experience when collaborating on projects, and begin accumulating long-term knowledge assets from your organization’s project investments.

Step 1: Identify and Rank Your Problems

A) **Current collaboration pain points:** First, clearly identify the collaboration problems to be solved by the networked tools. Identify the painful aspects of working together for which your teams need a cure—the gnarly issues you want to resolve.

B) **Business process improvements desired:** Define how you want your team processes to work after the new networked tools are implemented.

C) **Priorities:** Now prioritize the pain-points and improvements. Which hurts the most? Who needs help the most? Which solution will deliver the most value? And what can be reasonably tackled given internal constraints?

With your pain points and business process desires identified, and your priorities decided, you now have a prioritized functionality list.

For example, wasted time is often a very painful issue, such as when team members can’t find the right document and have to interrupt others to find what they need, or when the project manager gets redundant status requests from several different upper managers. Over time, repetitive interruptions like this undermine team productivity and generate tremendous frustration. The table below shows a list of such problems in the Pain Points column, and how a particular team would like their processes to work instead. The items in the New Business Process column will lead naturally to specifying features needed in the tools and to standards for how the team will use them. And the priority column helps focus everyone in on the most important functionality to start.

Collaboration Problem (Pain Points)	Priority	New Business Process Desired – How collaboration should work with use of the new tools
PM spends too much time asking team members for status on tasks.		PM knows that by close of business on Monday she'll have the latest status on all tasks in the database. Much time saved.
Team members asking other team members for status of dependent tasks in order to create their own status report.		Team members update status reports in database by close of business every Monday. Those responsible for tasks with dependencies have set up alerts; they receive emails when teammates update status on the dependent tasks.
Management is taking up PM's time asking for status of schedule (e.g., "…your email dated X, with schedule attached: is it the latest?")		Management knows where on the server they can always find most current schedule, status updates, etc. Their time with the PM covers more substantive issues than status updates.
PM, team members, and management waste time looking for latest version of files, and often unknowingly work on prior versions.		All files are always on the server …The latest version is clearly identifiable by standards that all members of the team understand and use.
Project participants remote from main group attend weekly status meetings by phone, but are frustrated that they don't have material being covered in the meeting and often cannot hear the discussion or sometimes even decisions made and actions assigned. They long ago gave up constantly asking that the microphone be moved nearer to speakers or that soft-spoken people raise their voice. Sometimes they take the time to read the minutes emailed after the meeting.		Weekly Status meetings are posted on the project calendar. The entry includes the meeting room (which is reserved via the calendar), the dial-in phone # for remote participants, the URL for shared screen access, the agenda and files of any documents reviewed in the meeting, and an Instant Messaging address of the POC for the meeting. During the meeting when any remote participants do not understand what is being said, they send an IM to the POC asking him to move the microphone nearer to the speaker. The person taking minutes posts the file to the calendar event following the meeting. Weeks or months later anyone (with access) can go back to the meeting entry in the calendar, read the minutes and learn decisions made, actions assigned, etc. during that meeting.

Step 2: Create a High-Level Plan for a Tools System in Your Organization

A Tools System solution for your organization, if successful, will cause significant changes in the ways people work and how they think about working together. So you'll need to think through what both parts of the system (Tools & Process Management) will mean within your organization, your groups, and their work.

To begin, make a preliminary assessment of:

- The types of new work procedures your people will need to adopt and
- The tools capabilities required to fulfill the needs identified in Step 1.

This will lead to creation of a high-level Plan. That plan will be indispensable as you proceed to explain all this to senior management and IT (Step 3), and eventually to the people who will lead the organization's use of the tools and development of procedures, and direct how to support their adoption across the organization (Step 4).

The high-level plan will help you clearly communicate to management both your needs and how you will address the needs. It will also help you communicate the idea to IT and get useful reactions from them. It will provide a common vision to minimize misunderstandings as everyone learns to communicate about this new approach.

In thinking about new work procedures, begin with the actions people across your organization will have to take to accomplish the outcomes in the New Business Process column. In addition to those specific weekly and monthly actions, consider some ad hoc actions your people will have to learn and use when the networked tools system is in place. For example:

> "I'll make a first draft and put it in the xyz file repository of the abc workspace and send you a link."
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> "Let's create a new workspace for this little project under the main project workspace; we'll need a file repository and wiki, but not a calendar—we'll use the main project calendar to post our meetings and milestones. Everyone who has access to the parent workspace should have 'read' access, but only the three of us and our manager should have 'write' access."
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> "How about we all put our comments on this document in a discussion board in the abc workspace, I'll set up the discussion board and send you a link to it."

Plan before you buy for what happens with data at the end of a project. The data in a project workspace should become a valuable *and easily accessible* company resource for the future. How can the knowledge and processes developed and the lessons learned, benefit the company in the future, and benefit teams that don't exist yet? How are you going to archive the data? Who outside of the team gets access to it? How is it indexed and meta-tagged for maximum usefulness? You'll get early buy-in across the organization when others see this value to them.

Then, using the **Overview of Features/Capabilities of Networked Tools** on page 10, identify the tool features/capabilities that will be needed to support the list of procedures and actions you just created. Using the first item in our previous table as an example, to support the new business process of team members submitting status reports every Monday, you would need a configurable database[‡] with some pre-set field values (your department names, the staff members' names, the types of customers you have, etc.). Record the required actions in a new table (or just add two more columns to the previous one):

New Business Process Desired	New Procedure or Action	Tools Capability Required
By close of business on Monday status on all tasks are updated in the database.	Staff members with action items and task responsibilities log into system, enter status information.	Database configured with staff members' and department names, and categories

[‡] We chose this example specifically because most would assume this requires IT to design a database. But there are tools available that can be configured by non-technical users and can be customized to include your specific names, departmental terms, etc. These customizations create a familiarity in the users of the tools that makes adoption and proper use much easier to achieve.

Now, in addition to the pain points and new business processes, you have detailed examples of the types of actions and procedures your people will carry out to accomplish the new processes, plus a high-level description of the networked tools capabilities needed to support those processes.

Next, think about people in your current organization who are part of the day-to-day work and could be innovative at applying networked tools to the work. If there are people who may not be innovative, but you believe they would be able and willing to learn to apply new tools to the work, put them on your list, too. What's most important in choosing these people is that they thoroughly understand the work. You want people who understand the business objectives because they may be able to see opportunities for tools to augment current work methods and achieve the goals with less effort or better quality. Your list should include one person for every 10–20 involved in the information deliverables production—whether local or remote, in your organization and among your clients or partners. It is important that knowledge of all groups' work be represented.

The people you are listing will be part of a new, permanent team: a motivated group that's excited to take on responsibility for leading your organization's use of the networked tools. In organizations we've worked with, they're called the Knowledge Management team, the Facilitators Team, or the KM Collaboration Team. Here, we will refer to them as the Tools Management Team, but you should give them a name that fits with your culture and communicates their function.

The Tools Management Team should have a central role in software tool selection and application in your organization. Members of the team will configure the online virtual workspaces for their groups and ensure that everyone working in their groups knows and uses the tools properly. They will lead the creation of new uses for the tools and support all the people in your organization in effective use of the tools.

The members of the Tools Management Team should be particularly active in promoting consistent standards around use of the tools. The fact that the Tools Management Team is pervasive in the organization helps build grass-roots acceptance and adoption of the new tools and methods.

All this work by your people who are already fully tasked sounds impractical right? You're thinking, "They'll never get their work done." They do not have to do this work themselves; they can manage others who configure and support the tools. Consider bringing on additional resources—full or part-time staff or outsourced (on-site or virtual)—to provide the support required to implement and sustain the standards. The workload will be heaviest when the tools are new; it will drop off dramatically after that.

We are proposing some significant investment here, but it produces significantly better results. You can make the investment just in the tools, but if you don't also invest in the infrastructure to adapt the tools to fit the work you will not realize returns on the tools investment. The research of Dr. Erik Brynjolfsson at MIT Sloan Business School shows that "firms that adopt [organizational processes] and also invest more than the industry average in IT are disproportionately more productive and more valuable [including market valuation, employee salaries] than firms which do one but not the other."

What is most important here is that the people who know the work be central in controlling the user-experience configuration of the tools. If the tools are customized to the work, they will be used effectively. The workers can manage the configuration without actually doing the configuration themselves. Successfully implementing network tools requires several related tasks, not all of which require the direct participation of the Tools Management Team:

1. Architect (define) the user experience of the tools—how the tools are applied to the organization's work at the lowest possible level, i.e., nearest to those people who will be doing the work.
2. Configure tools to the user experience defined in 1.
3. Define initial practices and oversee their evolution (standards, governance, etc.) around use of the tools.
4. Train others in the use of the tools.
5. Support use of the tools.

Of these required areas of work, the Tools Management Team is most critical to defining the user experience and the practices and standards surrounding use of the tools (activities 1 and 3). Others would carry out the rest of the work to those standards and specifications.

Step 3: Line up Your Support

Now that you have a high-level plan, it's time to bring your vision to the people whose support you need to make it all happen. Support comes in two flavors: business management and IT.

The #1 factor correlated to success or failure of an organization's use of networked tools is the support or lack of it from business management. It's critical to the success of the new system that leadership actively uses it. Have champions in management. Line up their support concretely and make sure it's obvious and stays obvious to all involved. Support means:

- Resources for managing use of the tools are made available. (i.e., Members of the Tools Management Team must be able to allocate time to their tools work.)
- Authority for the Tools Management Team to create standards and require procedures from the rest of the staff.
- Business managers must use the tools themselves.

Second, if your company has an IT department, you'll need them on your side. At this early stage, you want to find out where you stand with them. You don't want to get into a negotiation with them; you just want to know where you stand and what direction they suggest you take.

How much support do they have for your plan? If there are few networked tools available on your intranet, you'll be carving out new territory—this could make IT anxious about your plan. Will the IT department host your software or will you buy on-demand services from a hosting/service provider?

If there are already substantial networked tools capabilities, you may just need training for your people, or you may have to negotiate to get administrative access to the tools. You need to know how much you can manage the use of your own tools. Will IT provide people to be part of your Tools Management Team?

Third, some support is from your own self-sufficiency. An axiom you should live by in this initiative is that the tools you provide to your organization must be configurable by non-programmers; you should have point-and-click capabilities for adding and changing tool configurations. Your Tools Management team members are experts in the work of the organization, not technology. If they are to be successful creating workspaces that are intuitively navigable and outfitted with the right tools for the work of each group in your organization, the tools software must be easy to use (see step 5). If this does not happen, they

will be demotivated by the constraints on what they can do with the tools, and the rest of the organization will not achieve significant adoption or consistent use.

Step 4: Inspire, Assign Responsibilities, and Promote Ownership

At this point, depending on the availability of existing networked tools from IT, you may know what your tool set will be or you may still have that selection process to complete. In either case, the next things you need are accurate use cases and full engagement of the Tools Management Team in your plan.

Assemble the Tools Management Team. Inspire them with the vision: To get control over your tools of production; to be able to configure the tools your people need when they need them. The team will be part of a major shift in the way your organization's information work is done. Emphasize that they are on this team because they know the work of the organization, not because you expect them to become IT people.

Review the business process desires that you detailed in your high-level plan. These are rough estimates only. You want the members of the tools team to go to their groups and build up actual use cases. The use cases describe how each of the groups and the people in the groups would use the types of capabilities in the Overview Features—or in the actual tools on your company intranet, if any.

By encouraging users to develop a sense of responsibility for the tools, you promote ownership. The organization should be committed to improve the caliber of tools they use in the production of their work products. But words will mean little; the true engagement, trust and ownership will happen when users' input helps configure and customize the tools they use. This should be spot on; the more they adopt and customize the tools, the more they help themselves and support their own productivity. The gathering of use cases by the Tools Management Team members will be the first step toward this engagement. How quickly the next step comes will depend on tools availability.

Step 5: Tool Selection and Operation of the Tools Management Team

Finally we get to the point of talking about specific tools. Rather than running off to evaluate a set of tools, you have done a lot of up-front work to define needs, get support, identify a group of people to support the eventual tools, and begin the 'buzz' about the new tools and new ways of working.

If the company intranet does not already provide appropriate, easy-to-configure tools, you will lead the Tools Team (and IT representatives) through the process of selecting a tools vendor/product. Use your high-level plan to assemble a set of product/vendor alternatives. The use cases begun in Step 4 will provide specific requirements against which you can run a pretty standard RFP and purchase process. We will have more to say about the features of specific tools, the products and services that provide those features, and the tradeoffs between them in future articles. The unique aspect of this approach is not the purchasing of the tools, which can be fairly generic; it's claiming ownership of the tools and providing for their management.

When the tools become available, the Tools Management Team goes into gear. They must configure the workspaces with the various tools needed by each segment of the organization. They must develop governance standards that are within the capabilities of the tools, and that meet the needs of the workers and the desires of management. They need to propose, test, and promote procedures for the highest priority applications of the tools (identified in Step 1).

To accomplish all this, the Tools team will distribute responsibilities based on three roles:

> **Architect** – a person who directs the way the tools are applied to a group's work. The architect should understand the work of one or more groups in the organization, know the capabilities of the tools very well, and be skilled at configuring applications of the tools. If the architect has designed a given department's or group's tools, then it may be acceptable for a technical/IT person to do the actual tool configuration. However, it is critical that a group not be dependent on skills that are outside the control of the group's tools management—if you have to wait for resources outside your control to set up your tools, *your entire effort will fail.* In our experience, the architect role is often filled by a facilitator with tools configuration skills.
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> **Facilitator** – a person responsible for supporting (or managing support of) a given group's use of the tools and representing that group to the Tools Management Team. Facilitators should work in—or at least understand the work of—the groups they represent. They guide the development of standards of tool use in the specific work of their groups and they promote adherence to standards recommended or required by the Tools Management Team. Facilitators inform the Tools Management Team of their groups' specific standards. They should be comfortable using the tools, but may or may not have the architect-level skills of configuring them. The facilitator (or a support resource the facilitator manages) is the 'go to' person when users have a tools issue, whether it be a lost password, a need for new capabilities, or questions about procedures.
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> **Group Manager** – depending on the culture of the organization, the group's business manager may be the enforcer of standards or the tools team leader may take up issues of non-conformance through the facilitator. Facilitators will attempt to persuade, but they will likely not have the authority to enforce required procedures (e.g., organization of the file repositories, tagging of files, calendar completeness, etc.). Whatever the organization-wide and group-level standards, there must be a means of enforcement. (Note: A counterpoint to this is that the number of required practices should be kept to a minimum at the outset. Suggest many ways of doing things, but require only a few. Work out the issues that arise from that and build up the system of required standards slowly.)

Without the Facilitator on the project team, there will be little or no ROI on tool systems. ROI is largely independent of the tools. The lack of people formally responsible for facilitation has created wastelands of unused files and information on many corporate intranets.

Fundamentally, the Tool Management Team works to support the organization's shift to server-based work as the norm, and to empower every group in the organization to configure tools for their specific work needs (within the larger organizational standards).

With paper or emails, you have to know who has the latest version. It may be out of your reach, or out of the reach of partners and business associates. With server-based tools, everyone with clearance can get to it from wherever they are. Your work in Step 1 created a solid set of these and related reasons specific to your organization, to make clear that the solution lies in server-based work processes.

Some users will insist they need to keep their work local; this can break any Tool System. The need to shift to server-based work trumps siloing and sequestering of information.

One of the wonders of this integrated approach to implementation is that, despite the complexity of the networked tools, you don't need to worry much about the implications of the changes they will inspire. Because the people on the Tools Management Team come from and

represent each group in the organization, they choose an approach that accomplishes the objective and works for their fellow workers.

Without a dedicated Tools Management Team, your tools won't be effective; they may not even be used. But together, the team and the tools can solve the problems your organization now faces.

About the Author

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Recently, Tony created and led a team of 15 facilitators to address the team collaboration and organizational knowledge management needs of an 800-person government and private industry program. Earlier, Tony led technology development and operations as VP Production for an award- winning project management web service. In the mid 90's he was Executive Director of Fujitsu's popular online consumer community, WorldsAway. Early in the personal computer era, he was the founding Product Manager for AppleLink, Apple Computer's visionary extranet service that connected its employees with its dealers, developers, and corporate accounts. AppleLink was renowned for the 400% annual ROI it returned to Apple and for its role as the intellectual inspiration for Quantum Computer Corporation's 1987 service: America Online.

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Overview of Features/Capabilities of Networked Tools

Capability	Description
Browser-accessible	All user capabilities and many administrator capabilities should be accessible via login from a web browser (e.g., Internet Explorer, Firefox, Safari, etc.)
Configurable by non-technical staff	Non-technical team members should be able to initiate new workspaces, assign access to the spaces to users, and configure the capabilities available in that space.
Access Control	Ability to assign permissions (rights) to individual and groups of user accounts to control their access to workspaces, files, etc.
Workspaces	Ability to create web pages to support projects, individuals, ad-hoc teams, departments, partners, clients, stakeholders, etc.
File Repository	Ability to add repositories to the workspaces, for storing, tagging, and organizing digital files.
Group Calendar	Ability to add calendars and calendar items to the workspaces, to organizing information associated with meetings, milestones, events, etc.
General Communications	Ability to post text and images in a structured way on the workspaces' webpages (e.g., blogs and announcements).
Wiki	Capability to create server-based documents in the workspace; users write, edit and add links to wiki documents directly on the webpage. Instead of the traditional approach of one person writing a document on a PC, then sending it to the server, with wiki documents, the file and the word processor are always on the server. When one team member adds to the document, the additions can be seen in the document window by all team members immediately.
Discussion board	Ability to add a discussion tool which allows users to post topics, messages related to the topic, and replies to the messages.
Search	Ability to search both the full text and the meta-tags of files in repositories, as well as contents of wikis, calendars, discussion boards, etc.
Virtual Meeting Tools	Instant messaging enables any team member remote from any other team member to be 'in touch' on a moment-by-moment basis. Shared display significantly increases the productive participation of people meeting by telephone. Meeting Recordings enable people who did not attend a meeting to experience most of the value of the meeting through an audio recording with synchronized delivery of presentation materials and notes.
Configurable Database	Create and configure individual databases in workgroups that can be customized to meet groups' needs for task-tracking, contact information, issues management, etc.
Links	Capability to create a hyperlink to any file, page, or content and post those hyperlinks on the pages of any workspace.

Additional Considerations for Networked Tools Selection

Ease of Use

- How easy is it for a new user to figure out basic actions like putting a file in a repository or finding information about a meeting?
- How easy is it for an administrator to add a workspace or change a calendar?
- Can users figure out the vast majority of end-user actions and most administrator actions without resorting to a manual?

Security

- Encryption of passwords
- Encryption of data transfers between the user and the server
- Encryption of all data on the server

Scalability

- Number of users, workspaces, files, etc.
- Volume of data storage

Maturity

- Availability of off-the-shelf add-in components that add capabilities
- Platform is popular and likely to grow
- Availability and cost of support & maintenance
- State of user and developer communities
- Popularity of Development Tools

Extensibility – Ability of the system to be extended or customized with new functions or features from either add-on software products or by moving up to the next level system.

Interoperability – Software standards to which the system conforms and which enable the system to easily (or not) exchange data with other systems in your or partner company.