Structured Wikis at Work - Enterprise 2.0 in Action

This is the presentation material for the 50 minute Director's Colloquium talk on **"Structured Wikis at Work - Enterprise 2.0 in Action"** at NASA Ames, 2010-08-17.

Abstract: A wiki enables teams to organize and share content and knowledge in an organic and free manner, and to schedule, manage and document their daily activities. Learn from the founder of TWiki, the leading open source enterprise wiki what exactly a wiki is, and how you can use it to enhance the communications within your organization and between organizations. Learn also how a structured wiki can bring Enterprise 2.0 into the workplace.

Slide 1: Structured Wikis at Work
*How Structured Wikis bring Enterprise 2.0 into the Workplace*
- Wiki, a writable web: Communities can share content and organize it in a way most meaningful and useful to them
- If extended with the right set of functionality, a wiki can be applied to the workplace to schedule, manage, document, and support daily activities
- A structured wiki combines the benefits of a wiki and a database application
- This talk explains basic wikis and structured wiki, covers its deployment, and shows some sample applications using TWiki, an open source enterprise collaboration platform

Presentation for NASA Ames, 2010-08-17
-- Peter Thoeny - peter.thoeny.public@twikiPLEASENOSPAM.net - Twiki, Inc.

Slide 2: About Peter
- Peter Thoeny
- CTO and co-founder of Twiki Inc, the Enterprise Agility company
- Founder of TWiki, the open source wiki for the enterprise, managing the project for 12 years
- Invented the concept of structured wikis - where free form wiki content can be structured with tailored wiki applications
- Recognized thought-leader in wikis and social software, featured in numerous articles and technology conferences including LinuxWorld, Business Week, Wall Street Journal and more
- Graduate of the Swiss Federal Institute of Technology in Zurich
- Lived in Japan for 8 years, developing CASE tools
- Now in the Silicon Valley for 12 years
- Co-author of Wikis for Dummies book
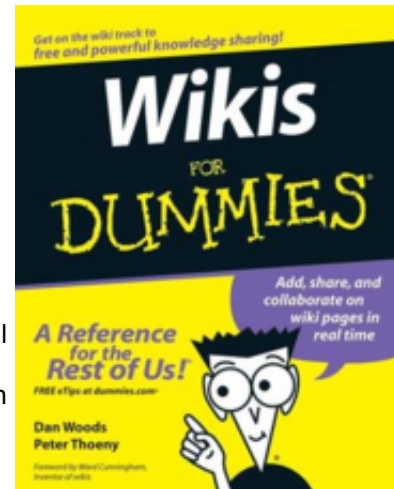
Slide 3: Agenda

- What is a Wiki?
- Enterprise Collaboration
- Demo of Structured Wiki
- What is TWiki?
- Structured wikis
- Collaboration challenges at the workplace
- Wiki champion
- Initial deployment of a wiki
- Overcoming barriers to adoption

Slide 4: What is a Wiki?

- WikiWikiWeb = Writable Web
  - As quick to contribute as e-mail
  - As easy to use as a website
- Ward Cunningham implemented the original WikiWikiWeb in 1995 to collaborate on software patterns
- Inspired by HyperCard; some call it a Blog for groups
- The original WikiWikiWeb has these features:
  - Read-write web, every page can be edited using just a browser
  - HTML form based editing with a simple markup
  - Pages are linked automagically with WikiWords

Slide 5: Wiki Has Come a Long Way
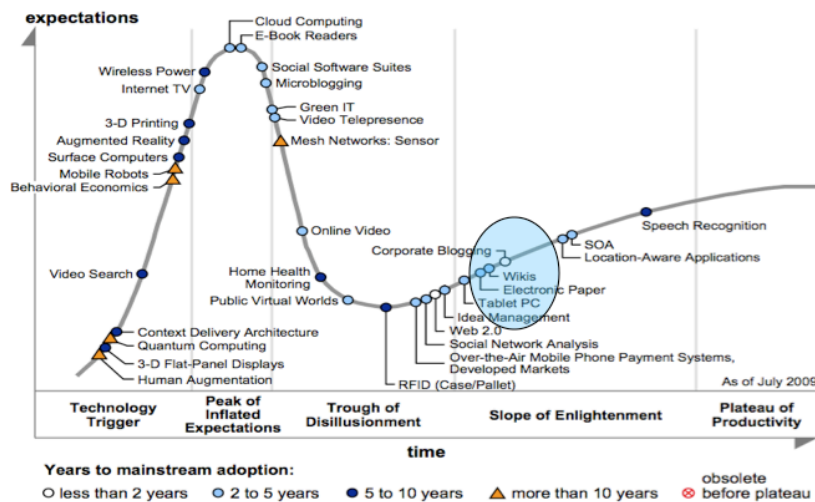
- Wikis are becoming a pervasive technology
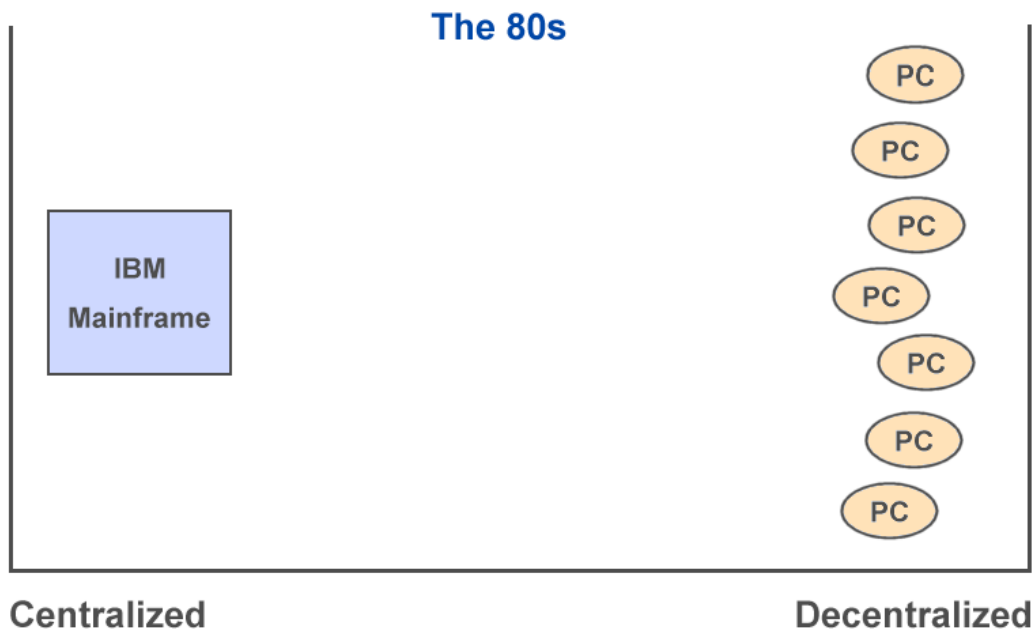
Slide 6: Wikipedia - The 800 Pound Gorilla

- Wikipedia: Wiki + Encyclopedia
- A free encyclopedia written collaboratively by *you*
- Project started in January 2001
- The most active public wiki: 3,000,000 articles and 12,000,000 registered users in the English language Wikipedia alone (ref. Wikipedia statistics)
- Anyone in the world can edit any page.
- *Doesn't that lead to chaos?*
    - Domain experts contribute
    - Well defined policies for contributing and handling content
        - *BUT:* Reality of edit wars, and larger interest groups overpowering smaller groups
    - Graffiti gets removed quickly (many eye balls; rollback available)
        - IBM's research on history flow of articles (gallery)
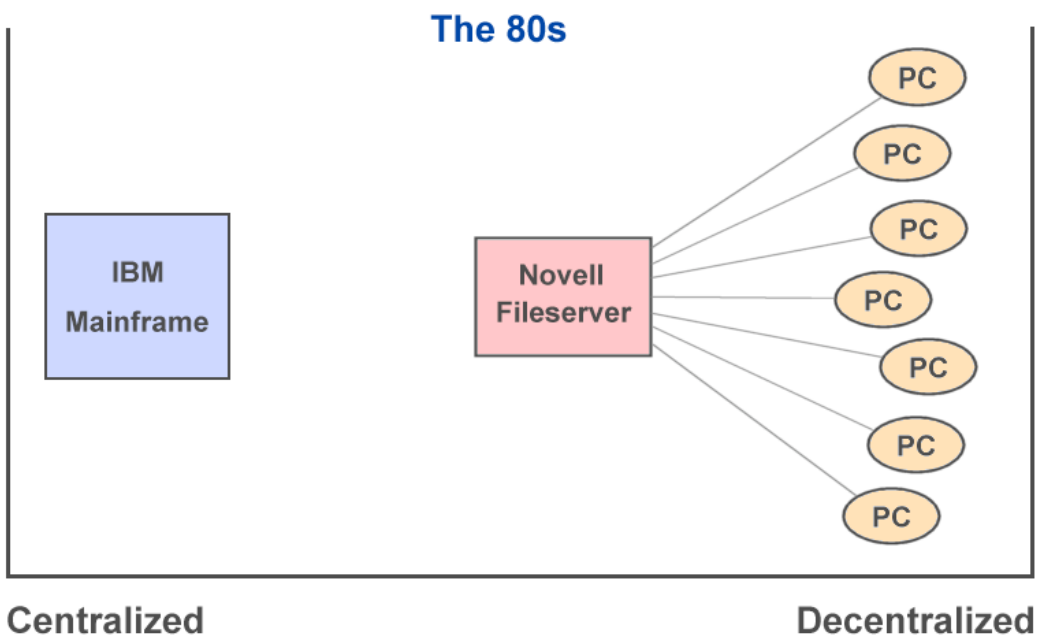- Content can be freely distributed and reproduced under the terms of the GNU Free Documentation License (GFDL)
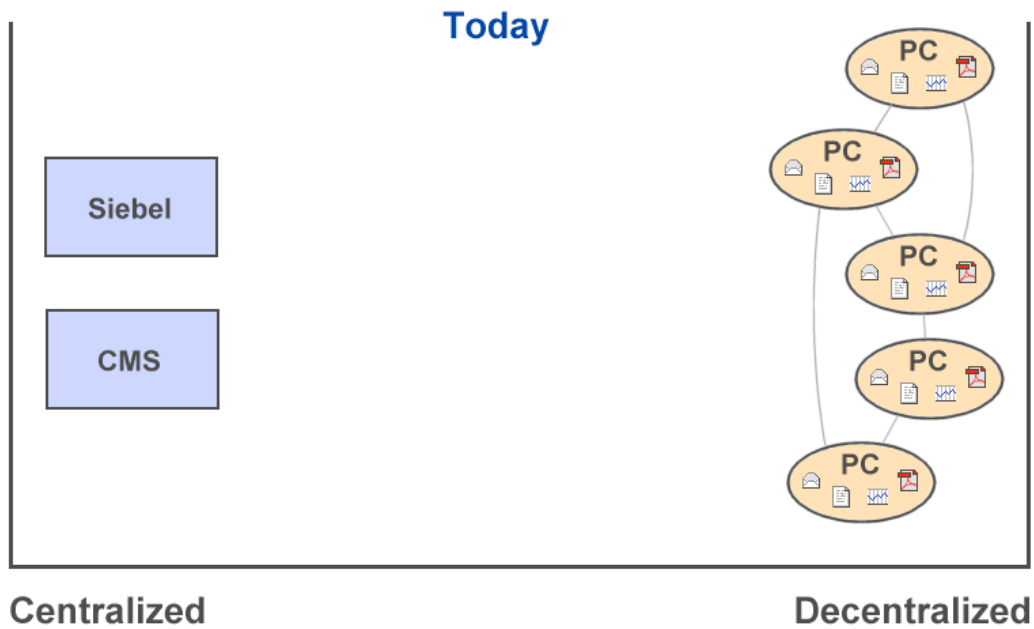
Slide 7: Trend of Term "Enterprise Wiki"
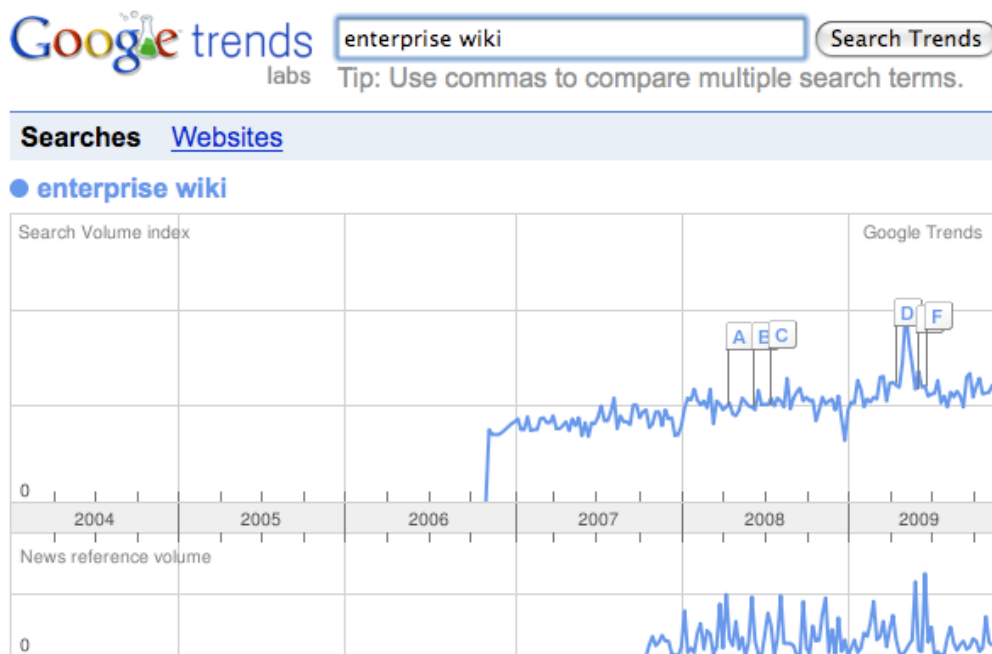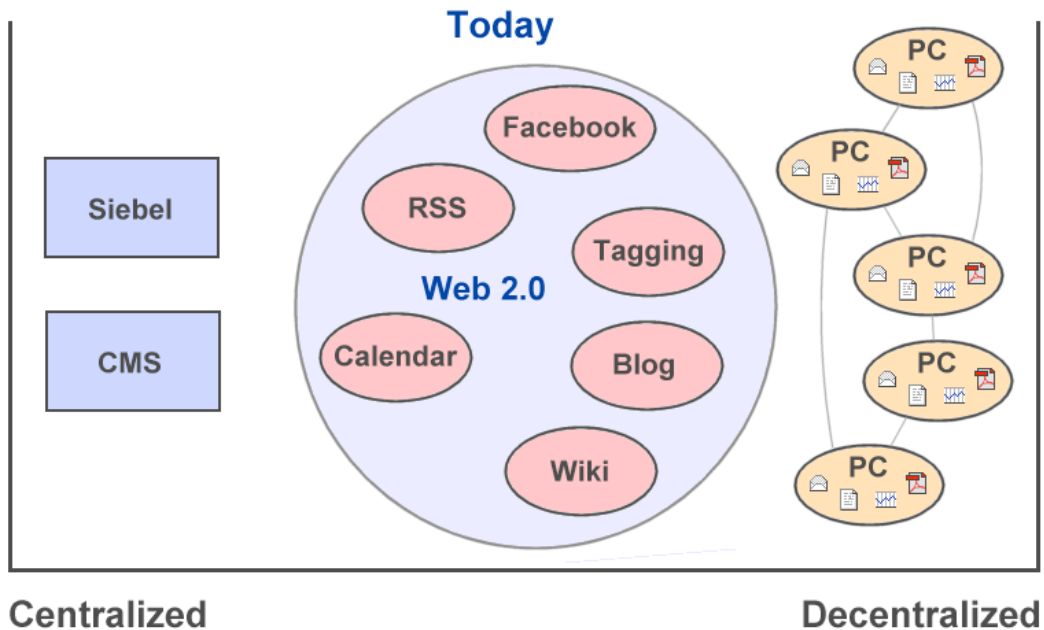
Slide 8: Enterprise Collaboration Landscape 80s

The 80s

IBM Mainframe

PC PC PC PC PC PC PC

Centralized   Decentralized

Slide 9: Enterprise Collaboration Landscape 80s - Networked

The 80s

IBM Mainframe

Novell Fileserver

PC PC PC PC PC PC PC

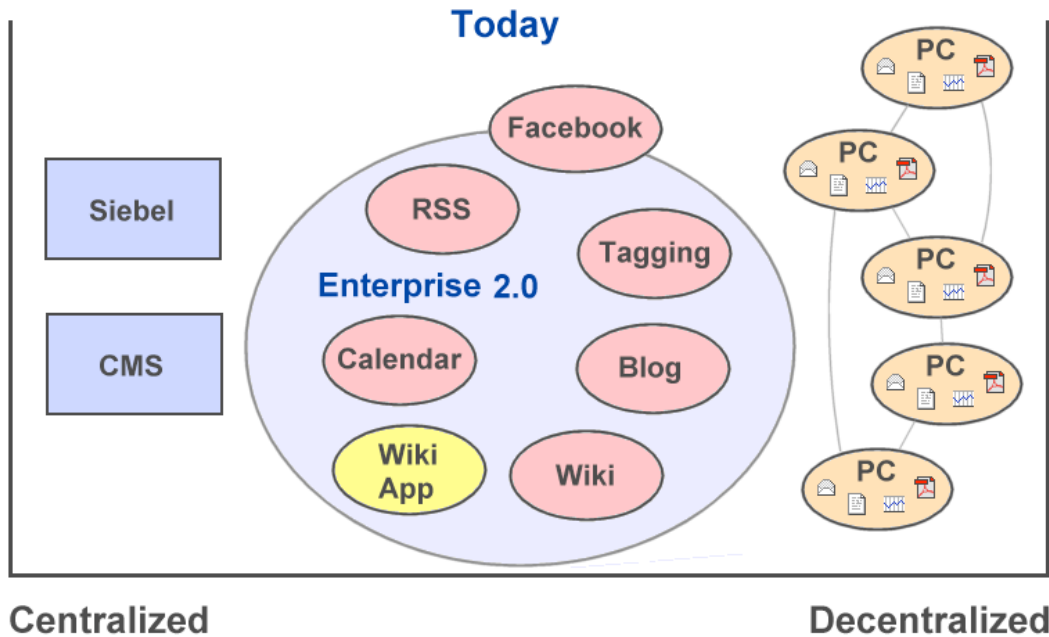Centralized   Decentralized

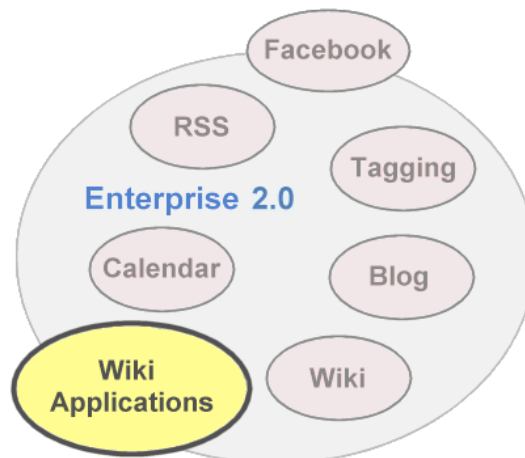## Slide 10: Enterprise Collaboration Landscape Today

Slide 11: Enterprise Collaboration Landscape Today - Web 2.0

Slide 12: Enterprise Collaboration Landscape Today - Enterprise 2.0

Slide 13: Structured Wiki Applications - Whet Your Appetite

- Event tracker of Peninsula Swiss Club
- Outage tracker of an IT organization
- Sales Pipeline Tracker of Twiki, Inc.

Slide 14: Demo: Event Tracker

Event Plans

| ID	Name	Date
☰ ✎ 1010	Fondue 2008	2008-02-02
☰ ✎ 1011	Easter 2008	2008-03-23
☰ ✎ 1012	all Generation Picnic 2008	2008-05-04
☰ ✎ 1013	Semi Annual Meeting 2008	2008-06-08
☰ ✎ 1014	1st of August Celebration 2008	2008-08-02
☰ ✎ 1015	Special event 2008	2008-09-13
☰ ✎ 1016	Metzgete 2008	2008-11-01
☰ ✎ 1017	General Meeting 2008	2008-11-15
☰ ✎ 1018	Samichlaus 2008	2008-12-06

New Event Plan

Event name:	
Date:	2008-07-28 Format YYYY-MM-DD
Based on:	default template ▾
	Create New Event Plan

Slide 15: Demo: Outage Tracker

Monitoring of Outages and Incidents

Monitoring Center	Events				
	Out 🔴	High 🟠	Med 🟡	Low 🟢	Total
DE-HA	0	0	4	0	4
IN-BA	0	0	0	0	0
JP-TO	1	0	1	0	2
US-CA	2	0	0	0	2
US-NY	3	0	0	0	3
US-TX	0	1	1	1	3
Total:	6	1	6	1	14

Events of US-TX

Event	Name	Start Date
000011 ☰ ✎	T22 server: Disk capacity 90%	2007-10-19
000012 ☰ ✎	Network sluggish Intermittently	2007-10-22
000017 ☰ ✎	Tsunami West Coast	2008-03-12

Show outages/incidents by monitoring center
Create new outage/incident

Slide 16: Demo: Sales Pipeline Tracker
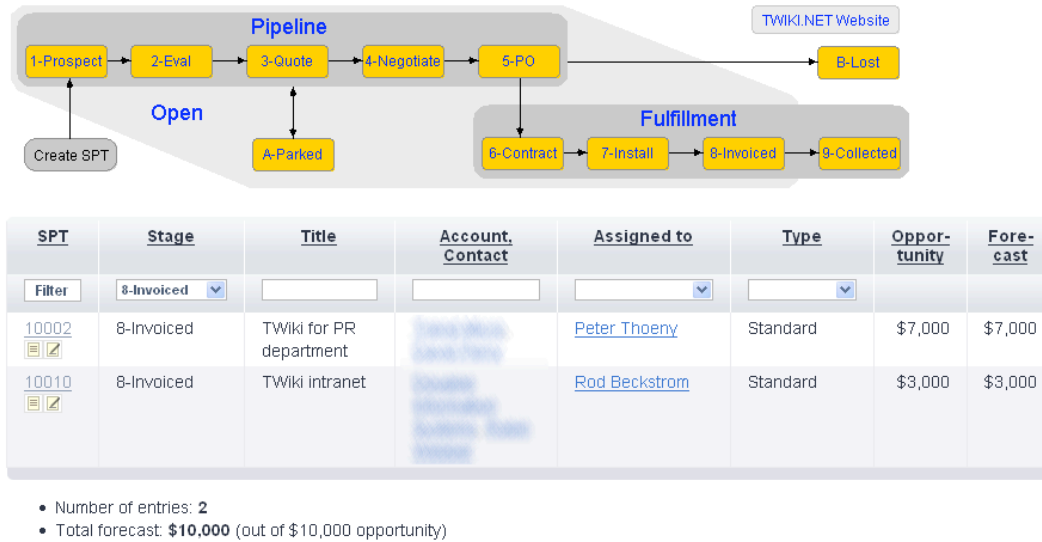
Slide 17: What is TWiki?

- TWiki is a wiki engine *and* wiki application platform, established in 1998
- TWiki is specifically built for the workplace
- Large number of TWiki Extensions: 200+ actively maintained extensions
- Open Source software (GPL) with active community, hosted at http://TWiki.org/
- 5,000+ downloads per month, 500,000 total downloads, estimate 60,000+ installations, 130+ countries
- Est. $27M of human capital invested (ref. Ohloh)
- Source Forge 2009 "Best Enterprise Project" Finalist (among 230,000 open source projects)

Slide 18: TWiki Open Source Community

- Clear mission, charter, roadmap and release focus
- 12 years - several iterations on governance
- Ubuntu style community governance and code of conduct since Oct 2008
  - o Designed to scale
- Small but helpful & inviting community
- Call to action: ***Get involved!***
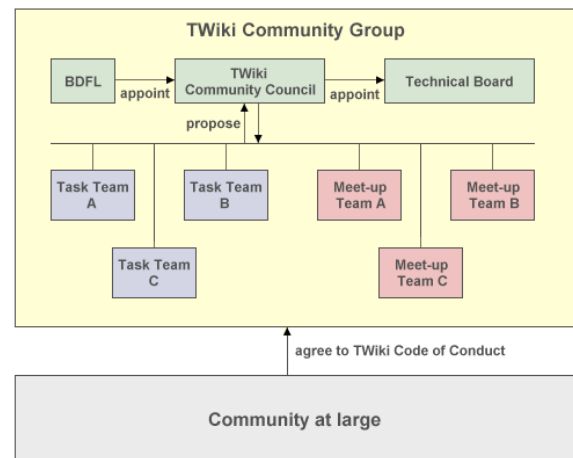
Slide 19: Commercial Open Source

- Commercial open source[1]
  - o vs. community open source
- Model of Fedora/Red Hat, Zimbra, MySQL
  - o vs. Debian, PostgreSQL, ...
- Criteria for success:
  - o Market share, pace of innovation, health of community
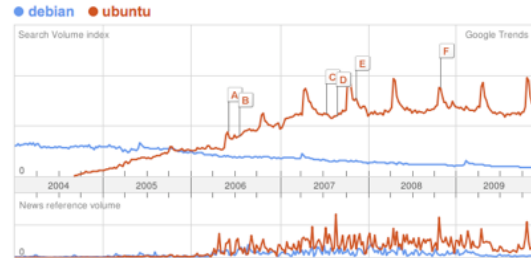
- Twiki Inc supporting community: TWiki.org hosting, feature enhancements, sponsor dev summits and user meet-ups, marketing, ...

[1] The Commercial Open Source Business Model by Dirk Riehle

Slide 20: Twiki Enterprise Agility Platform

System Architecture Diagram of Twiki Enterprise Agility Platform
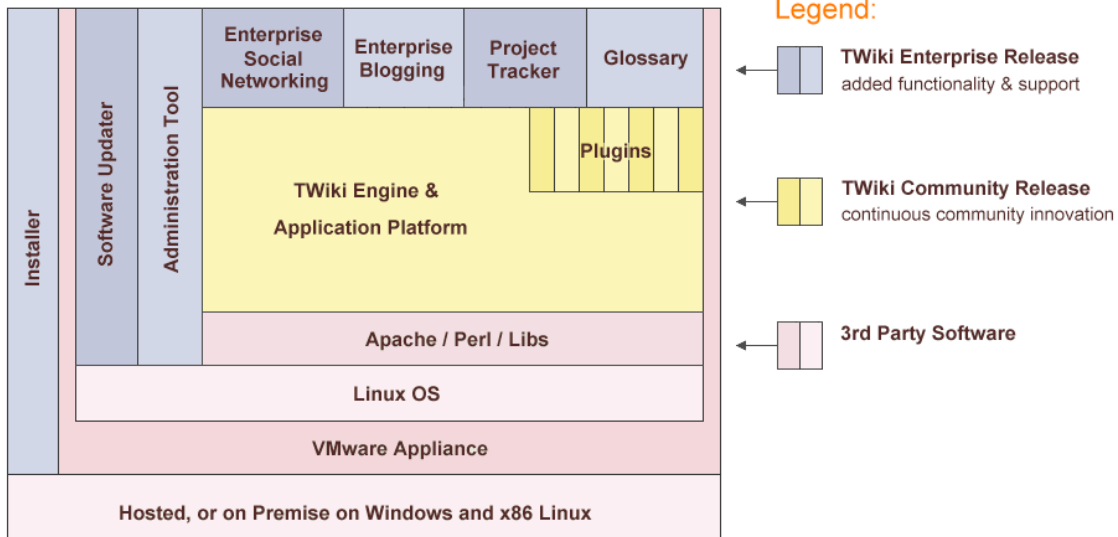
Slide 21: Under the Hood: TWiki I/O Architecture
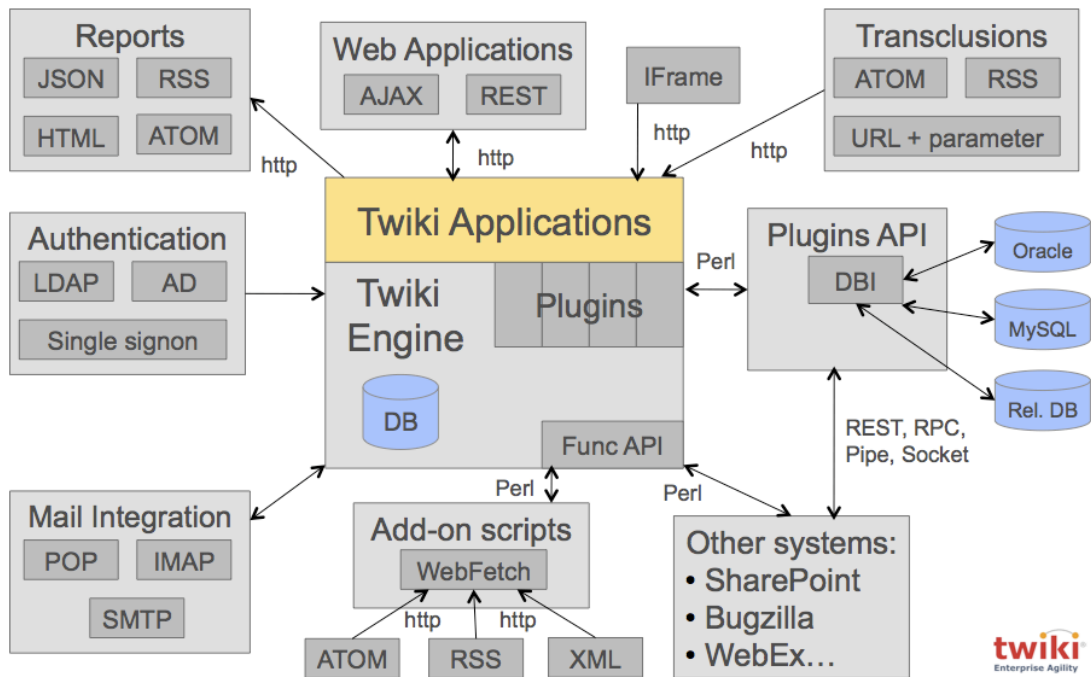
Slide 22: Competitive Landscape of Wikis & Enterprise 2.0
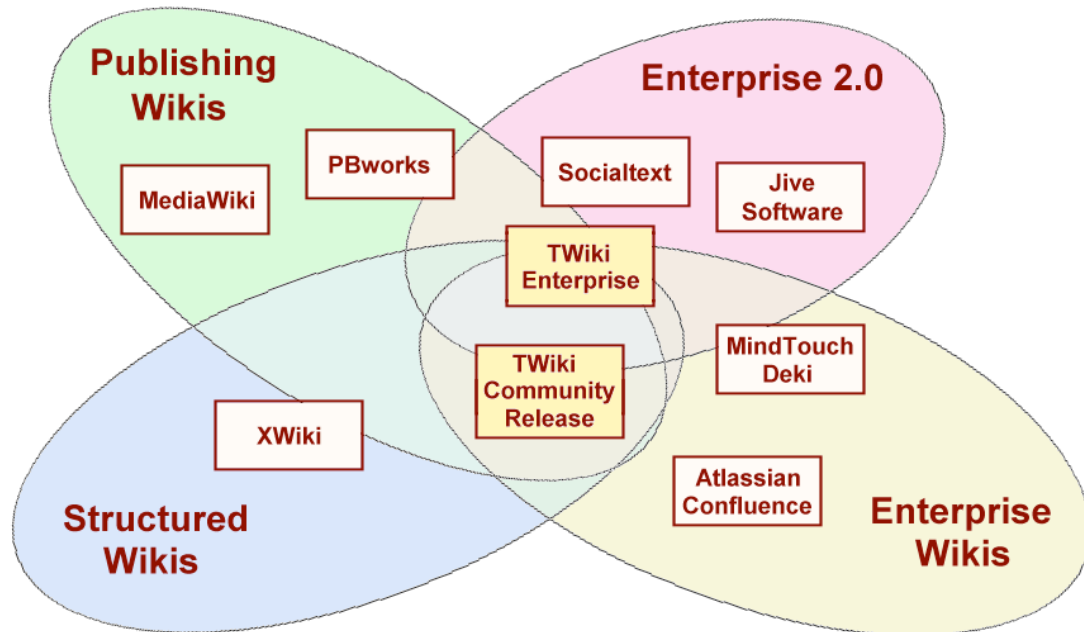
Slide 23: TWiki in Action

Critical Situation Management:

Multi-agency secure agile collaboration
Multiple Data Sources
Securable federal networks
Cross-domain situational awareness
Governance and Compliance Standards

ROI: React Faster, Save Lives, Focus on the Mission.

Pattern Based Applications
Customized workflows

ALPS Water systems:
• Order tracking system
• Collaboration with suppliers in Mexico, and distributors in Spain, Austria, Italy, Sri Lanka

ROI: OPEX : Headcount and space
"racks of file cabinets moved to basement"

Extranet
Partner and Community outreach

City of Melbourne:
• President's Choice Award
• 30,000 citizen Page Views
• 100s of Edits to City Plan
• 11,500 edits by city employees

ROI: Stronger Community, Higher Quality Plan, High Approval Ratings

Corporate Intranet
Network Operations Center
Customer Support Portal

**Cisco Remote Operations Services:**
• Configuration Management Database for over ~400 Customers
• Mission Critical Business Process and Technical Information
• Integration with Remedy Ticketing System
• Change Management Application, with Work Flows and Metrics
• Collaboration Platform between Engineering Communities
• Knowledge Capture, and Publication of Best Practices

ROI: Increased Productivity, Efficiency, and Customer Satisfaction

Slide 24: What is TWiki used for?

- Shared notebook for teams: Projects, repository, scheduling, meetings
- Departmental collaboration tool: Processes, project reviews, QA tracking
- Intranet publishing tool: IT, HR, ISO standards
- CMS with focus on free-form collaboration: Requirements capture
- Knowledge base: Problem/solution pairs with attached patches
  - TWiki started its life as a KB for support
- Platform to create wiki applications, such as news portals, inventory systems, issues tracking systems

Slide 25: Who is using TWiki?

- Many corporations, such as 3Com, AMD, Alcatel, AT&T, Boeing, ... Xerox
  - BT, Disney Corp, Motorola, SAP, TI, Wind River and others have submitted success stories
  - Major TWiki deployments: Google, Motorola, Nokia, Oracle, Sun, Wind River
- Academia, such as Biowiki of UC Berkeley
- Also Internet communities, such as Java.net's Javapedia
- Browse the TWiki Installation directory to see who is using TWiki for what purpose

Slide 26: Wiki Basics: Getting Started

- **Homepage**: Main.WebHome
- **Register**: Create an account
- **Webs:** A TWiki site is divided into webs, each one represents an area for collaboration:
  Blog, Codev, Main, Plugins, Sandbox, Support, TWiki, TWiki01, TWiki02, TWiki03,
  TWiki04, TWiki04x01, TWiki04x02, TWiki04x03, TWiki05x00
- **Topics:** Each web is made up of hyperlinked topics (web pages)
- **Browse**: This is a site like other sites. Read and follow interesting links.
- **Edit**: Every page has an edit link, feel free to edit any page! (sample page)
- **Relax**: Everything is under version control

Slide 27: What is a Structured Wiki?

- Goal of a structured wiki:
  - o Combine the benefits of a wiki and a database application
- Wiki:
  - o Organic content: The structure and text content of the site is open to editing and evolution
  - o Open content: Readers can *refactor* incomplete or poorly organized content at any time
  - o Hyper-linked: Many links to related content due to WikiWord nature
  - o Trust: Open for anyone to edit, "soft security" with audit trail
- Database application:
  - o Highly structured data
  - o Easy reporting
  - o Workflow (e.g. purchase requisition)
  - o Access control

Slide 28: Usage Pattern in a Structured Wiki

1. Users typically start with unstructured wiki content
   - o Example: Call-center status board
2. User discovers patterns in content
   - o Example: Call-center status board has fixed list of users and fixed list of time slots
3. User or administrator builds an application, typically in iterations
   - o Goal: Automate tasks based on discovered patterns
- In other words: A structured wiki enables *users* to build lightweight applications

Slide 29: Example: Call-Center Status Board, v1

- Requirement for status board:
  - o Easily see who is on call at what time
  - o Easily change the status board
- Start with a simple bullet list for status board v1:

  - o 07:00am - 11:00am: Richard
  - o 11:00am - 03:00pm: Peter
  - o 03:00pm - 07:00pm: Sam
- See CallCenterStatusBoard example

Slide 30: Example: Call-Center Status Board, v2

- Status board v1 does the job, but lets make it more presentable and useful:
  - o Convert the bullets into a table
  - o Use WikiWord links to team member's home pages for easy reference
  - o Add Backup person
- Improved status board v2:

Start	End	Primary	Backup
07:30am	11:00am	SamHasler	
11:00am	03:00pm	RichardDonkin	
03:00pm	07:00pm	PeterThoeny	

- See CallCenterStatusBoardV2 example

Slide 31: Example: Call-Center Status Board, v3

- Status board v2 is presentable, now lets make it more user friendly:
  - o Use the TWiki:Plugins.EditTablePlugin to select the times and names from a list
- Improved status board v3, view and edit:

Start	End	Primary	Backup
07:30am	11:00am	SamHasler	
11:00am	03:00pm	RichardDonkin	
03:00pm	07:00pm	PeterThoeny	

Edit

Start	End	Primary	Backup
07:30am	11:00am	Main.SamHasler s	
11:00am	03:00pm	Main.RichardDonkin	
03:00pm	07:00pm	Main.PeterThoeny	

Save table   Quiet save   Cancel

- See CallCenterStatusBoardV3 example

Slide 32: Why Deploy a Wiki?

- Wikis are robust
- Wikis are fun and easy to use
- Wikis solve some of the limitations of existing collaboration software:
  - o Maintenance of static intranets
  - o Taming internal e-mail flood
  - o Implementation of business processes

Slide 33: Challenges of Static Intranets

- Some content is outdated
- Incomplete content
- When was the page last updated?
- Difficult to find content
- Inconsistency across departments
- Special tools, knowledge and permission required to maintain
- Content is static, it has a *"webmaster syndrome"*:
If an employee discovers a page with incorrect or insufficient information, the employee will often ignore it because it takes too much time to find out who the webmaster is and to write an e-mail requesting an update

Static Intranet

Slide 34: Wikis and Static Intranets

- Move some/all Intranet content into a wiki
    - No difference for readers to browse and search content
   - Employees are empowered to fix content on the spot
    - Ease of maintenance
    - No need to install client side software
    - Consistent look & feel
- Paradigm shift
    - from: *webmasters maintain content*
   - to: *domain experts and casual users maintain content*
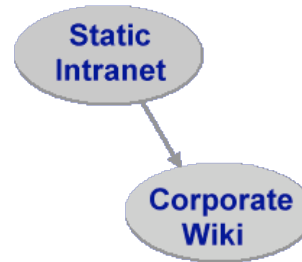
Slide 35: Challenges of E-mail

- E-mail and mailing lists are great, but:
    - Post and reply vs. post and *refine/refactor*
    - Great for discussion, but ... hard to find "final consensus" on a thread
    - E-mail is not hyper-linked and is not structured, content can't be grouped easily into related topics
    - E-mail and attachments are not version controlled and it is difficult to determine the history of a document
    - Not all interested people / too many people in the loop
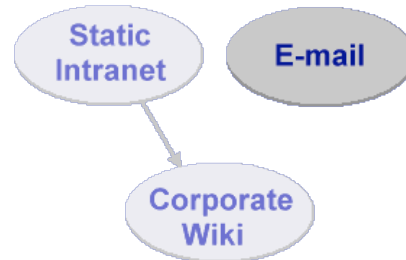
Slide 36: Wikis and E-mail

- Move some e-mail traffic into a wiki
    - Ease of reference (cross-linking)
    - Flexible notification (favorites only, daily digest, RSS/ATOM feed)
    - Pockets of knowledge made available to interested parties
    - Audit trail / domain experts
- Paradigm shift
    - from: *post & reply*
    - to: *post & refine & cross-link*
- Send e-mail with link to content instead of content itself
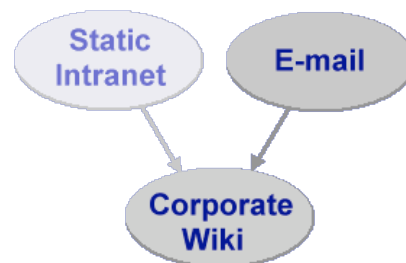
Slide 37: Challenges of Business Processes

- Business processes are implemented in large scale by IT department (Sarbanes-Oxley compliance etc.)
- Teams follow formal/informal workflow to accomplish tasks, which is often a paper-based process (rolling out laptops to employees etc.)
- No resources allocated to implement applications to automate these processes; IT department has no bandwidth to implement lightweight applications for a variety of teams
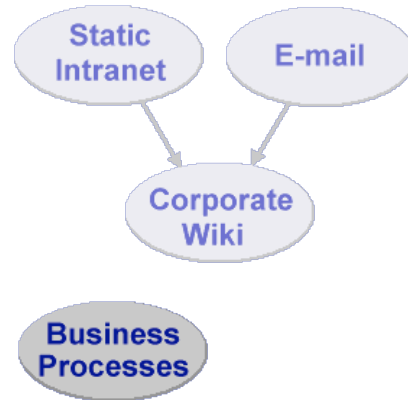
Slide 38: Wikis and Business Processes

- A structured wiki is a flexible tool to support evolving processes
    - in the free-form wiki way -- linked pages, collaboratively maintained
    - and with a structured wiki application -- forms, queries, reports
- Content contributors with moderate skill sets can build web applications
- Paradigm shift
    - from: *programmers create applications*
    - to: *all of us can build applications*
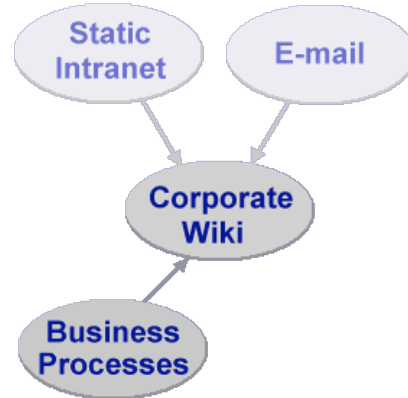

Slide 39: Requirements for a Wiki at the Workplace

- Version control -- audit trail
- Access control -- security
- File attachments -- document management
- Ease of use -- productivity
- Ease of administration -- productivity
- Feature set -- create web applications
- API -- integration with existing enterprise applications
- Scalability -- room to grow
- Support -- get help when needed

Slide 40: Role of Wiki Champion

- A wiki champion is a person who:
  - understands the process of the work for a given project or business (the domain), and
  - knows how to use a wiki (best practices in collaboration)
- The wiki champion is coaching the employees
  - Advocate, important role especially in the initial phase of a wiki
- Typically a part time role
- As the wikis gets larger and grows laterally, new wiki champions emerge

Slide 41: Initial Deployment of a Wiki

- Plan content and rollout
  - Pain killer vs. vitamins
- Build initial structure
- Populate initial content with help from early adopters
- Initial rollout with smaller group
- Train and coach users
- Do not underestimate inertia and time
- Expect quick growth after slow start
  - Example: Wind River's wiki has now 120K pages and 20K page changes / month
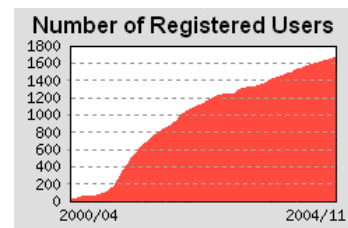
Slide 42: To Click on "Edit" or not to Click

Slide 43: Be Aware of Mental Barriers

- Wikis can be intimidating; the wiki pages appear "official" and corporate
  - Overcome your own internal resistance to edit existing content
  - Paradigm shift: Content is owned by team, not individual
- I want my contributions to be near "perfect"
  - It is more effective to post content early and let the team provide feedback and revise it iteratively

Slide 44: Wikis are Fun

- Wikis are easy to use
- Even people with moderate skill sets can build great content
- Wikis are quick
- Wikis change as your workflow changes

Slide 45: Summary

- A structured wiki is a powerful platform for web collaboration
  - Collaborate in free form; add structure as needed
  - Use it as shared notebooks, a departmental collaboration tool, a publishing tool, a CMS and a knowledge base
  - Use it as a platform to create lightweight applications
- Easy to share knowledge
  - Corporate brain gives a competitive advantage
- Careful coaching is needed
  - Offer user training and wiki champion training
- Viral growth after people "get it"

Slide 46: How can TWiki help your Organization?

Q&A

This presentation: `http://bit.ly/twPres10`
(`http://twiki.org/cgi-bin/view/Codev/TWikiPresentation2010x08x17`)

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