#### Wiki behind the Firewall—Microscale Online Collaboration in a Translation Agency

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This paper provides an introduction to some of the applications—both proven and possible—that can be realized using wiki software in a small language service provider (LSP). It is based on experience gathered with the wiki systems in use at Transform GmbH, a small, high-end LSP based in Cologne, Germany.

## 1. Introduction

#### 1.1. Transform GmbH—a small LSP

At Transform GmbH, we specialize in German-into-English translation, although we also offer other language combinations. Our customers are mostly large or medium-size companies, with some small-to-medium enterprises. We translate a number of corporate image publications, aimed at both internal and external audiences, plus the usual range of press releases and technical documentation. One area in which we are particularly strong is the

translation/localization of publications in layout, i.e. delivering a close to print-ready document in the customer's layout software of choice. This also requires the use of Internet-based editorial systems for some projects.



*Figure 1: Examples of publications translated by TransForm GmbH* 

#### 1.2. What a wiki is and what it can do in general

The first wiki was created and launched by Ward Cunningham in 1995. He named it WikiWikiWeb, taking the Hawaiian word for quick—"wiki"—as used in the name of the Honolulu Airport terminal shuttle bus.<sup>1</sup> The best-known wiki is Wikipedia, which was launched in 2001 and currently handles between 20,000 and 45,000 page requests per second.<sup>2</sup>

A wiki is essentially a Web-based, user-editable database for creating, browsing through, and searching for information. As such, it is a powerful and easy-to-use tool for anyone interested in collaborative documentation. Its flexibility and speed make it well-suited to dealing with volatile—i.e. fast-changing—content. It is designed for multiple users in multiple locations—a feature that also makes it ideal for incorporating work from short-term or temporary personnel.

The use of a standard web interface makes it accessible from any platform for which a standard Web browser is available, i.e. Windows, Mac OSX, Linux and Unix. As any user can edit the pages of a wiki, it can facilitate both top-down information distribution (when a procedure is documented by management) and a bottom-up process (when a job is documented by the employee(s) doing the work). Both of these information flows are essential in an LSP environment.

You can even use it as an online notepad.

## 2. Infrastructure

## 2.1. How we chose our wiki

The starting point in selecting our wiki software was the comparison of wiki software on Wikipedia, which provides a good review of available software.<sup>3</sup> This article currently (21/10/2008) lists over 50 wiki software packages, both open source and proprietary. Wikipedia's article on MediaWiki—the software Wikipedia uses, which is an exceptional reference in itself—convinced me that we should start with MediaWiki. It offers a range of features that we considered potentially useful, in particular templates, and is one of the most popular and best-known open source wiki packages. As the software behind Wikipedia, it is definitely stable and powerful enough for a small or medium-sized LSP, while being easy to install in our intranet environment.

Our servers and in-house planning database system run on an intranet, so it was easy to add a TransForm Wiki link to the company intranet homepage. The intranet is accessible from all computers in the local address space (192.168.0.1-255) and from computers connected to our network via VPN.

#### 2.2. Infrastructure and expertise necessary to get it up and running

The infrastructure necessary to run a wiki in-house is basically a network with a suitable server platform. The commonest type of platform is probably the AMP stack, which incorporates Apache as a Web server, MySQL as a database engine and PHP as the scripting language. This particular combination has the advantage that it is available as open source software for both Windows and Linux. When based on Linux, AMP becomes LAMP—the basis for our intranet. MediaWiki is relatively easy to set up on such a software stack. Our Linux expert, then an IT student, had no difficulty getting MediaWiki up and running. Incidentally, even disregarding licensing issues with Microsoft-based intranets, we believe that Linux offers a better platform for productive-use intranets as opposed to sandbox-level development. Open source packages such as XAMPP for Windows<sup>4</sup> do, however, make it possible to play around with ideas on a home network.

The introduction of new Linux distributions such as Ubuntu and the wide availability of support for such systems has significantly lowered the barriers to entry here.

Getting hold of open source software is easy. Google and Wikipedia make it possible to identify a large number of software packages and determine whether or not they are open source and how they can be obtained. Wikipedia often contains detailed comparative information on types of software, and even on specific packages. Many open source projects are hosted on SourceForge.<sup>5</sup>

#### 2.3. Hosted wikis as an alternative

Many companies offer hosted wikis for businesses. These hosted service providers or "wiki farms" provide a wide range of wikis<sup>6</sup> using open-source and proprietary wiki engines. Costs start at free, and licensing can be anything from copyleft or other open-source type licenses to proprietary. Some such providers offer additional facilities such as Wysiwyg editing or business-specific templates and secure private wikis. Such solutions exhibit the same advantages and disadvantages as any remotely hosted "software as a service" or "cloud computing" applications. Issues such as reliability and security must be considered, as well as what happens when the competition buys your main software provider.

#### 2.3.1. TikiWiki

TikiWiki is an open source CMS incorporating a structured wiki engine with multilingual capabilities, calendar facilities and a wider range of applications than a pure wild engine like MediaWiki. Like MediaWiki, it can run on a LAMP stack. For these reasons, we have installed and are testing TikiWiki.

#### Dependencies

One of the downsides in using open source software is the need to keep compatible versions of the different packages in the stack. We have already experienced incompatibilities between our older chat system based on the Jabber protocol (server: Wildfire, formerly known as Jive Messenger and now called Openfire) and a previous version of TikiWiki.

The TikiWiki documentation also contains a dire warning for anyone wanting to install Tiki with multilingual capability: if you install this without PHP 6 (or later) and MySQL 4.2 (or later) "you will regret it later if you have to move Tiki to a new server." Our internal planning database application was written for PHP 4 and will have to be ported to PHP 6 before we can run Tiki on the same server stack.

#### Incompatibilities

Moving from one wiki engine to another also makes it necessary to recreate the content due to the different markup syntax used. Fortunately, when the wiki in question is only approximately 100 pages, the port can be managed by hand.

# 3. Use

# 3.1. Wikis in companies

Wikis are becoming widespread in companies. There is reliable information on their use at large companies such as the mobile phone manufacturer Nokia, where over 20% of employees used internal wikis in 2007, and the investment bank Dresdner Kleinwort, where over 6,000 pages had been created by October 2006.<sup>7</sup> One factor specifically mentioned as slowing adoption at Dresdner Kleinwort was the need to refine the system to minimize confusion among users. On the other hand, the use of the wiki as a replacement for e-mail is credited with being an important factor in boosting collaboration at the bank.

Other examples are provided by Stewart Mader's "Grow Your Wiki" site,<sup>8</sup> which includes both case studies and common patterns that can have a negative or positive effect on the adoption and effectiveness of different types of wiki.

## 4. Specific information flows centred on an LSP

Top-down information flows are standard in any business. In an LSP, the customer defines what they want, and the LSP attempts to fulfil the request. But life is rarely that simple, if only because the LSP's employees and freelancers know what is linguistically possible, and the customer may not. In consequence, taking editorial decisions on behalf of the customer—making it up as you go along, so to say—is a major part of life in an LSP company or department. This is especially true when the LSP is an independent company working for a wide range of customers. Most procedures and styles are different for every customer. Lots of information is then different for every job. Some information is reused.

# 4.1. The nature of customer-specific information in our LSP

Our company has to handle two major categories of customer or project-specific information. These can be characterized as <u>styles</u> and <u>procedures</u>. Material intended for publication usually has to conform to rules. These could include the customer's corporate image or employee communication guidelines, publication-specific style guides and regional styles, to take just a few examples. Reference is often made to published style guides such as *Hart's Rules* or *The Chicago Manual of Style* for Oxford and U.S. English respectively.



Figure 2: Examples of published style guides in regular use at Transform

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Figure 3: Sample page from a customer's style guide

Although styles, terminology, etc. often differ from customer to customer, a great deal of customer-specific information is reused at more or less regular intervals both in recurring projects and due to the requirement that corporate communications such as press releases conform to a consistent style. Our work encompasses a wide range of magazines, with publication cycles ranging from monthly to annual, plus press releases and internal documentation for numerous companies.

Procedures can also vary greatly between clients and client accounts, with file formats such as MS Office documents, Quark XPress and InDesign layouts, and files in the various markup languages being sent and received via e-mail, CD-ROM, FTP and Web-based editorial systems.

In such a situation, a fast and simple way of documenting and communicating procedures and styles—i.e. a wiki—is extremely useful.

## 4.1.1. Traditional top-down, project manager method of disseminating project-specific information

The traditional, top-down flow of information is relatively easy to manage. Information comes in from the customer and is organized and disseminated by the project manager. A wiki is an excellent tool for this purpose. The task usually comes down to specifying the scope of the project, the workflow and communications protocols, and elements such as existing customer style stipulations or examples of previous editions or issues. A wiki enables the project manager to link to existing documentation of styles and workflows and to create new documentation by copying and editing, or by utilizing templates.

# 4.1.2. Bottom-up information flow and the relevance of wikis as a way of facilitating such a bottom-up information flow

A wiki also supports and encourages bottom-up documentation and information flow. Translators and editors can expand any existing documentation by adding further information on issues as they arise. This provides a real-time feedback loop, with results immediately added to the project's "memory"—the wiki page. Like all information in the wiki, it is immediately available to all participants.

## 4.2. How a wiki connects in an LSP



*Figure 4:* Points of application for a wiki in an idealized schematic of the flow of style information through an LSP

## 4.3. Pathfinder principle in dealing with project information flow

By providing this dedicated, moderately-structured, bidirectional information platform, however, a wiki also makes it easy for a single person to establish procedures and conventions for a project at its initiation. Wikis make it easy to define an outline structure for project-related information at the start of the project. This structure can be adapted and expanded as further information arrives. Errors and omissions are open to immediate correction by anyone who comes across them. A dynamic equilibrium between top-down and bottom-up documentation processes is achieved.

## 5. The TransForm Wiki

#### 5.1. The first phase of use

Media Wiki was installed and the wiki first set up in February 2006.

It almost immediately demonstrated its value by not only enabling me to document the use of the publishing system K4 as I learned it, but also by rapidly turning my notes into a system user's guide for our project managers. K4 is a Webbased editorial system providing all of the parties involved in the design, authoring and production of a publication with access to the relevant elements of the publication. From our position as translators, we had access to complete layouts for a monthly employee magazine as soon they had been approved for translation.

A couple of weeks later, we used the system to document the names of the sections in a customer magazine as we received and translated the texts and layouts, enabling us to avoid duplication and ensure consistency. The complete range of German section names had not been settled by the time that we were translating the first ones, so the system was a great help, enabling us to keep up with changes in the original.

## 5.2. The need for training

Despite these successful uses of the wiki, it was still, to a large extent, used as my own personal notepad and notice board for top-down distribution of procedures etc. Encouraging colleagues to use the wiki had some effect, but it was still viewed as a static website by most employees. In 2007, I therefore developed a simple training workshop to teach people how to create a page and format text on that page. Many of the ideas in this were drawn from a workshop at the

2007 tekom / TC World conference.<sup>9</sup> I then took our employees through these procedures in small groups. Guiding the participants through creating and formatting a personal wiki help page took around one hour. This basic knowledge proved sufficient to encourage productive use of the wiki.

## 5.2.1. Scope, development and positive impact of a short training workshop

The wiki is now seen as a useful part of the company's facilities, and is mostly used, as originally envisaged, for documenting and updating processes and styles. This need for a limited amount of initial training, and the effectiveness of such training in promoting use seem to be common features of small-scale corporate wiki applications.<sup>10</sup> However, in an operation of our size even the arrival one or two new employees provides grounds for planning another training workshop.

## 5.2.2. Specifics of our training workshop

The first TransForm Wiki Training Workshop was based on the concept of a DIY help page. Working on the theory that the best way to learn a system is to document it, I produced a simple help page containing information on the steps required to create this in MediaWiki, then wrote a set of simple, step-by-step instructions on how to create such a help page.

# 5.3. Access to the wiki

## 5.3.1. On the intranet

The TransForm wiki is an application forming part of the company intranet. It is accessed from the intranet homepage, along with our job planning database and a couple of other applications. This means that, like all intranet applications, it occupies part of a block of IPv4 private address space, so it has no direct external IP connectivity. Computers and applications with this type of IP address can only communicate with the outside world via some form of mediating gateway.<sup>11</sup> Users directly connected to the office network can access the intranet by typing in the IP address (usually stored in the browser as a bookmark). We use Firefox as our main browser, with one or two Internet Explorer installations for problem sites and Safari on the Macintosh OS X workstations.

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*Figure 5: Intranet homepage* 

## 5.3.2. Extension using VPNs

Fortunately, there is an easy way to connect other networks also using areas of the IPv4 private address space to the office network. This is the virtual private network, or VPN. After our first, not completely successful, attempts at running a Linux-hosted VPN server with software clients under Windows, we switched to routers with built-in hardware VPN clients at our home installations and a router capable of serving up to 32 VPNs at the office. This configuration has so far proved stable and effective in providing remote intranet access via consumer broadband connections.

## 5.4. How we use the wiki

# 5.4.1. Overall usage statistics

The wiki was first edited in February 2006.

According to MediaWiki, Special Pages, Statistics: "There are 1,572 total pages in the database. This includes 'talk' pages, pages about Transform Wiki, minimal 'stub' pages, redirects, and others that probably don't qualify as content pages. Excluding those, there are 124 pages that are probably legitimate content pages.

"There have been a total of 7,530 page views, and 3,195 page edits since the wiki was setup. That comes to 2.03 average edits per page, and 2.36 views per edit."

That averages out to approximately 230 page views and 100 page edits per month, or roughly 9 views and 4 edits per working day (allowing for holidays, etc.).

#### Structure

The wiki is currently structured under the headings shown below in Figure 6.



*Figure 6: Transform GmbH wiki homepage* 

This ad hoc attempt at a structure was established as an alternative to the much more rambling structure that grew with the wiki.

#### Usage statistics by category

In the course of writing this paper, I took a closer look at the usage statistics for the 50 most popular pages. The total number of page views was 5,618. The breakdown was:

Wiki organization	Style guide	Notes	Training	Standards	Procedure manual	Internal communications
2,392	1,319	929	313	296	177	159
43%	23%	17%	6%	5%	3%	3%

The categories are defined as follows:

Wiki organization

Higher-level pages used to define sections or categories, e.g. "Main Page" and "Customerspecific style guides", the most viewed and second most viewed pages. It is to be expected that the "Contents" pages of a reference work are the most frequently accessed.

Style guide	Style guides for customers, e.g. "Evonik", the third most viewed page.
Notes	Practice pages, individual notes pages, reference material, e.g. "AKK's Practice Page", the fourth most viewed page, which is actually a fairly detailed description of the work of the front desk, where most calls and e-mails arrive. This was written (in German) by a part-time student employee who has since graduated and left TransForm.
Training	The page under which participants create their own practice page—"Wiki Workshop 01"—
	is the sixth most viewed page
Standards	My notes for EN 15038 certification
Procedure manual	Notes on specific, customer-related procedures, e.g. "Working with InDesign Layouts in Smart Connection (Folio & Magazine)"
Internal communications	Pages used for collaborative decisions, e.g. "Christmas Party 2008", where people enter the dates they can or can't attend, and suggestions for a venue.

## 5.4.2. Style guides—how did we handle that in the last issue?

As the above statistics make clear, the most frequent application of the TransForm wiki is for keeping notes of customer-specific styles.

The amount of detailed information on styles required to keep a publication consistent is large. At least two national newspapers, *The Guardian* and *The Economist*, publish their respective style guides as books. And their publishing cycles are daily and weekly, respectively. As can be seen in Figure 1, TransForm translates publications with annual, 6-month, 4-month, 3-month and one-month publication cycles. That's on top of the material that comes at more irregular intervals, such as press releases.

The wiki is used to keep note of style questions that come up during the course of translating an issue of a publication, and of the answers to these questions. These answers are drawn from a wide range of sources, which could include the customer's own style guides, published style guides, questions to the customer, and what the translators and editors working on the project think is appropriate.

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Figure 7: The start of a customer-specific style guide

## Publication as PDF for freelancers

We print out style guide pages from the wiki to PDF and circulate them to external translators and editors. Such PDFs can also contain references to external sites, such as a customer's online edition of a magazine or a corporate media portal.

## Styles template

It very quickly became apparent that some style questions frequently recurred in various publications, so a template was written to provide an outline structure for style guides.



Figure 8: The start of the customer-specific style guide template

Wikis that support templates make it easy to define an outline structure in advance. We use such structured templates for customer and project-specific style guides and procedure documentation. The template is an outline wiki page that can be included in a new page by means of a very simple syntax. In MediaWiki this is done by creating the new page, then inserting {{subst:template\_name}} as the first line of text and saving the page. The person handling the new project is immediately presented with a form containing prompts for the key information needed in almost any publication. Once this information has been provided, other relevant information can be added to write a style guide for the publication.

## 5.4.3. Procedures—the evolving instruction manual

As mentioned above, the first use of the TransForm wiki was to document the use of the publishing system K4 as I learned it, and to turn my notes into a system user's guide. This documentation process continues to be used for new workflows and software packages. A simple template is available for contact information.

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#### *Figure 9: Template for workflow documentation*

Procedures are more complex to document than styles, as they tend to include both highly structured information such as contact details, file types, types of file transfer and address and logon information on the one hand, and details of special software or macros required and how to use them on the other. We will probably end up with a tree structure with the overall workflow as the root and separate templates for subordinate pages such as software used.

#### 5.4.4. The Christmas party—Which days can you make it?

We have a page for recording who can make which days for the Christmas party. Employees can enter suggestions for the venue etc. In 2007, the menu was posted for people to enter their orders in advance.

#### 5.4.5. Individual's notes

The wiki can also be used as an online notebook for non-confidential information. The checklists for EN 1530 certification were written up on the wiki. PDFs of these checklists were sent to the auditors as part of the documentation of follow-up work after the initial audit.

#### 5.4.6. Trivia

It was suggested that employees could use the system to post examples of eccentric English, German, and other languages, but the technology of choice for this application seems to be a combination of digital photography and fridge magnets.

#### 6. Where do we go from here?

#### 6.1. A review of the lessons learned, both positive and negative

My original idea of how the wiki would be used was basically as an evolving instruction manual, adapted by the people doing the work. The effects of the lack of defined structure in a wiki soon became clear. Although this is arguably one of the great strengths of the medium, at least in large-scale applications, where it enables emergent structure and other wonders, small scale users like TransForm benefit from a more structured approach. This point is often couched in terms of the modularization of content,<sup>12</sup> and is one which we could usefully have paid more heed to in advance. Against this, the nature of a wiki is that as soon as it works, you find yourself doing useful things with it, and good intentions tend to fly out of the window. Teething problems in terms of lack of participation and dead content are considered normal for wikis. Our experience is that people use the system when it makes their life easier, and that "dead" content doesn't increase costs and might come in useful one day (two or three-year publication cycles are not unknown among our customers).

Wiki engines usually provide content statistics, and plug-ins may be available to provide them in greater detail. As mentioned above, such statistics provide an extremely useful way to determine the relative usefulness of information and also offer hints as to where the wiki needs further development input.

Our wiki is not a cure-all. It requires a small but non-trivial amount of attention if it is to thrive. It can cope with a regime of benign neglect interspersed with short, intensive phases of input, both in terms of user training and administration. Once people have been offered initial training, those who find that it makes their life easier will use it. There are usability issues with MediaWiki, particularly in the lack of good table support. Most new users get as far as tables, then stop, as they find the syntax confusing, so there is a clear problem here.

# 6.2. Future plans for in-house use of wiki software

I believe that increased input in structuring the wiki and repetition and deepening of the material covered in the training workshop are necessary in order to make the wiki into a more effective and widely used tool in the company.

We need to formalize the use of the wiki in certain areas, for example in developing templates for specific workflows and requiring that certain steps are entered in the wiki. This needs to be done in a way that does not place too great a load on the personnel—for example, in intensive situations like the front desk on a busy day.

The non-intuitive nature of the MediaWiki markup for tables, as mentioned above, represents an obstacle to progress here.

For these reasons, we consider MediaWiki to not be fully appropriate to our needs. It has a lot of excellent features, but it lacks certain specific features that would be of benefit to us. We are therefore looking at the possibility of migrating to a different system.

## 6.2.1. Structured wikis and why we want to move in this direction

The term structured wiki is usually understood to mean a wiki engine with certain features for structuring the information it holds. These features usually include capabilities such as the ability to define templates, categories, forms, and hierarchical tree structures of pages, and can extend to the ability to define database applications within the wiki itself.<sup>13</sup> MediaWiki already provides the first two of these capabilities and is capable of supporting a significant degree of structure.

## Templates

Templates are predefined blocks of markup and text used to provide the basis for a wiki entry. They enable a readymade structure to be incorporated into a new or existing page with one simple command. Templates are extremely useful for moderately structured information such as style guides.

#### Multilingualism

Another capability that is of particular interest to us is the ability to define multilingual structures. There are a number of reasons for this, but chief among them is the fact that TransForm GmbH is based in a multilingual office, located in Germany, with a staff of native speakers of English and German. As can be seen in Figure 7, mixed languages make their way into the wiki. Given that transference and mixing vocabulary and structure are among the most insidious long-term problems facing translators, anything which discourages such mixing of languages is to be promoted. There is no reason why some pages shouldn't exist in English only, some in German only, and some in both versions. Indeed this could be seen as a very positive step. And if we were to extend the access to regular freelancers, then the ability to define pages in Dutch, French, Portuguese and Spanish would also be useful. Unfortunately, the multilingual features of MediaWiki seem to be relatively difficult to use, so we have not made any progress on this front to date.

#### Calendars

Calendars are useful. Better calendar functions would, for example, enable us to put our customer's publication schedules and trade-fair, press-conference and AGM dates on the intranet. Providing everyone with easy access to this information, along with dates for regular scheduled projects, conferences, school holidays and employee holidays already booked, will help individuals plan their holiday requests and provide advance warning of high-stress periods when overtime and weekend work may be required.

## 6.2.2. The next steps

We expect that the improved structuring facilities and the extra capabilities offered by TikiWiki will outweigh the effort required for the port and the short-term disruption it will involve. The reasons in favour of moving to Tiki are, however, not confined to its apparent superiority in terms of our needs. It is also the beneficiary of a great deal of multilingual development work, both in terms of its capabilities and their application to the world of translation and multilingual content.<sup>14</sup>

The actual process of porting the wiki will also offer an opportunity to rationalize the existing structure and provide an incentive to incorporate the new structures from the beginning. A refresher workshop, to introduce people to the new markup syntax, will also provide an opportunity for promoting the system.

We expect to make particular use of TikiWiki's template, multilingual and calendar features. The plan is to establish a new, modular, top-down structure for all languages. This structure will then be fleshed out as appropriate in the respective authors' native languages.

# 6.2.3. Extension to external users

Going beyond the current intranet-only access to the TransForm wiki would require the construction of a fully fledged extranet, with all of the additional security and access provisions that such a semi-public network requires. The trend is undoubtedly in the direction of greater integration, both with clients and with translation service providers. There are, however, a number of issues that must be considered when opening up internal company documentation to outside eyes.

# 6.2.4. Extension to external service providers

Increased cooperation with translation service providers, be they freelancers or specialist agencies, can benefit all involved. Provision of terminology and style information at the start of a job usually results in a better-quality translation regardless of whether or not a translation memory system is used. This quality improvement is in the form of a text that is more appropriate to the customer's needs, and one requiring less time and effort spent on revising and reviewing.

Cooperation with translation service providers currently consists of terminology and style information passed to the external translator along with the job, which itself is usually in the form of a presegmented file. Feedback consists of phone calls, translator's notes, and e-mails. Anything of further relevance must be passed on to the in-house revisers, reviewers and editors. An externally accessible project-oriented wiki could be very helpful here. Clearly, the greater the number of translators involved in a single project, the more useful such a wiki would be. There are obvious issues of editorial control here, and the LSP would effectively have to moderate edits to the wiki by freelancers.

# 6.2.5. Extension to customers

Opening up a wiki to clients would also be conceivable, but would raise issues of editorial control of target language documentation. It may be politically safer to either encourage clients to set up their own, extranet-based wikis, or even to offer to host project-specific wikis. In any event, it would be important to establish and maintain responsibility for the material on the wiki, as it controls how jobs are done.

If such a degree of cooperation is under consideration, it is vital that the LSP's contribution to the overall project is seen to be providing substantial added value by all parties involved.

In the light of the additional effort required to implement such an extranet, we are not currently planning to implement access to the wiki from outside the company.

# 7. General issues

# 7.1. Wiki size

Wikis seem to demonstrate different characteristics at different scales. There is a rough classification of wikis suggesting that small-scale<sup>15</sup> (up to a few tens of users) and massive (10,000 users plus) wikis work well. Certainly, the issue of irrelevant or pointless content is much less of a problem in a small company, where peer feedback is swift. Lack of clear vision and individual ownership start to become problems in wikis with tens to hundreds of users, and large-scale wikis with hundreds or thousands of users will have users actively working against the wiki.<sup>16</sup> There is also some evidence that the maximum number of individuals with whom an animal can maintain social relationships is related to neocortex size, and that this relationship predicts the maximum such group size for humans to be around 150-200.<sup>17</sup> I have not been able to find any comparative studies of wikis at different scales; however, I think it would be an interesting subject.

# 7.2. Collaborative dreams vs. corporate reality

The freedom offered by a wiki is double-edged. Anyone can start writing anything in any way. The wiki is a gigantic sandbox—great for brainstorming, but not so helpful for many practical applications. It offers a platform where all sorts of ideas can be tried out without causing too much damage. Yet a structured wiki could enable highly structured and amorphous information to coexist on the same platform.

## 7.3. Defining what we really need—two degrees of freedom

A system for collaborative working, such as a wiki, can be classified according to two axes defining its nature.

## 7.3.1. Structure-chaos

Take what could be called the structural axis, extending from total disorder to a rigid database structure. A wiki can exist at any point or range along this axis. For example, use of a structured wiki engine such as Twiki with the ability to define internal applications enables a wiki to support both unstructured pages and a rigid database such as a contacts list.

## 7.3.2. Control—egalitarianism

Security represents another axis. Taking a wider interpretation of security, it encompasses issues such as the number of different categories of user and the difference in rights between them. Guests, registered users and administrators are the usual three basic user groups, and the latter two are probably sufficient for a small company wiki—whether or not enabling guest access makes sense will depend on the nature of the intranet's security. If particularly sensitive information is stored on the wiki, it may be necessary to limit access to certain pages to particular departments or individuals. Larger organizations tend to require more subtle gradations of power. A degree of access control is present in most wikis. Wikipedia itself has locked pages and a hierarchy of editors. Commercial software normally provides rights and permissions, although not every organization or individual makes appropriate use of them. Wiki engines such as MediaWiki and TikiWiki have perfectly adequate access control facilities which can be configured to provide a wide range of levels of security and control. The onus is on the corporate IT department to provide the appropriate level of input here.

## 7.4. Commercial confidentiality and open source

Despite Microsoft CEO Steve Ballmer's widely reported comments about open source being a cancer in an intellectual property sense, open source licenses do not require you to publish what you do to or with the software. For example, Version 3 of the General Public License<sup>18</sup>—a widely used open source license—requires you to accept the license if you wish to modify or propagate the software. If you simply wish to use it without modification or further distribution, then you do not even need to accept the license. Confidentiality and trade secrets are not impacted by the use of open source software. Google runs on open source software and still keeps its central algorithms extremely secret.<sup>19</sup>

The real contradiction in working with open source is between having ideas and being able to focus the time and the resources to implement them.

## 8. Conclusions

Management books on the topic contain plenty of anecdotal details of how wikis have revolutionized workplaces.<sup>20</sup> One common feature of the stories presented is that wikis are just another step on a well-travelled road, e-mail was once a revolutionary collaborative tool that would transform the world of business. It was followed by instant messaging in its various forms. Nowadays, the cry is "Don't send e-mail, use the wiki!".<sup>21</sup> Wikis are thus a strictly temporary phenomenon which will soon be replaced by technological progress.<sup>22</sup> For the moment, however, wikis provide a rapid means of documentation and information transfer that is particularly suited to environments such as LSPs and editorial offices where documentation is a never-ending task. Their major advantages—open access, simple formatting, almost no fixed structure—are also their greatest weaknesses in a business environment. But these weaknesses are not insurmountable. Wiki software can incorporate adequate features for controlling access rights and permissions, and a correctly installed system is as secure as the intranet on which it runs. Wiki formatting options are sufficient for many purposes. However, the difficulties associated with table markup present a problem. Finally, some systems offer structuring facilities such as template definition and categorization of pages, and these features are by no means easy to learn.

Earlier in this paper, I mentioned how I first used the wiki to document procedures in the publishing system K4. Our company is integrated into workflows defined in publishing systems such as Woodwing's SmartConnection and Quark's Quark Publishing System. Such systems are gradually taking over the world of print publishing. They consist of central databases integrated with professional layout software and provide Internet-based access to all of the text and layout information required for the publication. Articles and layouts can be created and worked on online and offline, subject, of course to the appropriate rights and permissions. These systems could even be thought of as extremely focussed corporate wikis dedicated to the production of the respective publication. The prospect of a decentralized LSP utilizing a wiki-type tool for collaborative working conjures up the interesting prospect of a wiki-based system intermediate between the small-scale wiki in use at TransForm and the highly successful, slightly larger-scale editorial systems now widespread in the world of magazine publishing.

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<sup>21</sup> see 4)

<sup>22</sup> see 9)