Use of Weblogs for Competitive Intelligence

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Presented at The First International Conference/Workshop on Business, Technology and Competitive Intelligence
25th and 26th of October 2005 Tokyo, Japan
Nihon University Graduate School of Business
25 October 2005

Abstract: Over the past fifty years, the inspiration of hypertext systems has been the challenge of dealing with an ever-increasing volume of information. With the advent of the World Wide Web (WWW) as a near universal platform for commercial and scientific information, it is now possible to use the WWW as a platform for collecting, analyzing, disseminating and receiving feedback on competitive intelligence and other valuable business information. This paper will use examples of weblog deployment for competitive intelligence in the pharmaceutical industry to examine broader challenge of enabling enterprises to more effectively deal with the ever increasing volume of critical business information in general.

Keywords: weblog, hypertext, journal, competitive intelligence, analysis, dissemination, social software

Biographical note: Mr. Lloyd is President and co-founder of Traction Software, Inc. He is a graduate of Brown University where as an undergraduate and graduate student he worked for Prof. Andries van Dam on hypertext systems starting in 1968. Mr. Lloyd continued hypertext research while at the US Naval Research Laboratory and developed commercial hypertext editing and delivery systems at Mentor Graphics and Electronic Book Technology. The Traction TeamPage product is based on Mr. Lloyd's original research as well as that of Prof. van Dam, Douglas Engelbart, Theodor Nelson and Traction's co-founder, Christopher Nuzum.

Introduction

Weblogs (or "blogs") are best known as personal daybooks on the web written by an individual consisting of a "collection of clippings, musings and other things like journal entries that strike one's fancy or titillate one's curiosity. What makes this online daybook different from the commonplace book is that this form of personal noodling or diary-writing is on the Internet, with links that take the reader around the world in pursuit of more about a topic" Safire, (2002).

Weblogs gained mass media attention as personally published websites written by amateur reporters, pundits – or teenagers. For example, anyone can sign up for a free personal or low cost personal weblog from LiveJournal.com. As of August 2005 LiveJournal.com hosted over 2,600,000 active weblogs, 85% written persons by persons 20 years old or younger, see LiveJournal (2005). As of the end of July 2005, Technorati.com reported that it was tracking over 14.2 million weblogs, about double the number tracked in March 2005, see Sifry (2005). Weblogs are part of an emerging infrastructure that uses the global Internet as a massively scalable platform to disseminate information in a form that can be easily written, read, correlated, and commented on by anyone with the skills necessary to use a web browser.

This paper presents the following thesis:

1) The World Wide Web's shift to medium that is generally writable as well as readable represents a return to the original vision of the WWW and hypertext systems that pre-date the Web.

2) Weblog technology will not be limited to personal use, but holds the potential to profoundly change the way that commercial and government enterprises handle internally facing and externally facing working communication.

3) Collection, analysis, and dissemination are classic parts of the Competitive Intelligence (CI) process, and particularly well suited to the strengths of weblog technology.

4) Weblog technology can deliver a higher volume of CI alerts and analysis to a wider audience more effectively than email or any known alternative.

By creating easily authored content and commentary within the weblog and linking to any Web addressable content, weblogs create an open and scalable resource that can be used for notification and reference, as well as mined for historical insight across the largest enterprise.

Hypertext Roots

Vannevar Bush's 1945 Atlantic Monthly article 'As We May Think' is acknowledged as an important influence by the three persons who invented hypertext in the 1960's and

70's: Douglas Engelbart, Theodor Nelson, and Andries van Dam, see Barnet (2004, pp. 117-118).

In his Atlantic Monthly article, Bush describes a desk-like device he calls a 'Memex', which would contain a microfilm research library as well as that individual's notes. The owner of the Memex would use it search and read the corpus, and create personal 'trails' of references connecting pages of particular interest and personal annotations in a form which could be stored for future retrieval and use by the owner, or shared with a colleague, Bush (1945, p. 4 web edition).

Memex Animation from Bush Symposium, Simpson (1996)

The purpose of the Memex was essentially personal – aiding the owner in picking the potentially significant items in the flow of research, and recording them in a form that 'would not fade'. The intellectual problem was: how to recognize, capture and use the 'momentarily important item' in the published record:

> The difficulty seems to be, not so much that we publish unduly in view of the extent and variety of present day interests, but rather that publication has been extended far beyond our present ability to make real use of the record. The summation of human experience is being expanded at a prodigious rate, and the means we use for threading through the consequent maze to the momentarily important item is the same as was used in the days of square-rigged ships. - Bush (1945, p. 1 web edition)

Although a Memex could never have been built using the technology of 1945, 'The dream of a perfect archive for human knowledge, an archive which represents knowledge yet retains all its *structured interconnections*, never seems to fade. Like a spectre of the future, it returns again and again', Barnet (2005, p. 122).

The first operational hypertext system was the Hypertext Editing System (HES) developed by Andries van Dam, Theodor Nelson and students at Brown University in 1967-1968, see Barnet (2005, pp. 212-226), van Dam (1988). As its name implies, it first embodied a link, branch and text node model for creating, reading and formatting non-linear text, using the services of a university mainframe computer and dedicated display for one person at a time.

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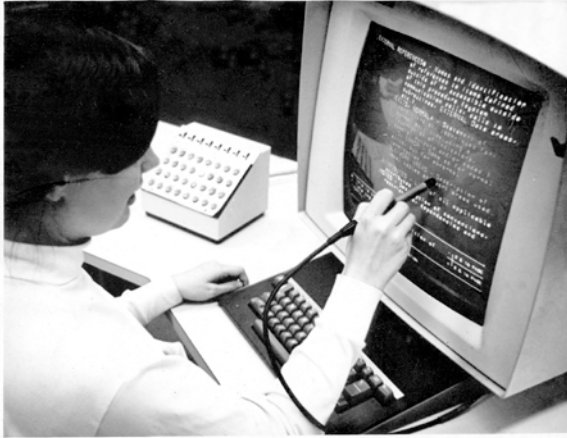
Hypertext Editing System (HES), Brown University 1968, Author's photograph

Nelson coined the term 'hypertext' in 1965 and strongly lobbied for development of additional HES capabilities for historical backtracking, 'transclusion' (content copying by reference) and support for forms of linking beyond the branch and link model implemented by HES. Nelson later pursued his vision of *personal writing system* embedded in a universal, sharable corpus which he named 'Xanadu', Barnet (2005, pp. 177-211), Giles (2000, pp. 100-105)

Douglas Engelbart took a different path from Bush's original vision in two fundamental ways: 1) He focused on group rather than individual creation of a sharable corpus; 2) He introduced a shared, time ordered record of communication (which he called a 'Journal') as a primary organizational metaphor.

Starting in 1962 Engelbart focused on *augmentation* of the capabilities of groups rather than individuals as described in his SRI Research Report, *AUGMENTING HUMAN INTELLECT: A Conceptual Framework:*

> By "augmenting human intellect" we mean increasing the capability of a man to approach a complex problem situation, to gain comprehension to suit his particular needs, and to derive solutions to problems. Increased capability in this respect is taken to mean a mixture of the following: more-rapid comprehension, better comprehension, the possibility of gaining a useful degree of comprehension in a situation that previously was too complex, speedier solutions, better solutions, and the possibility of finding solutions to problems that before seemed insoluble. And by "complex situations" we include the professional problems of diplomats, executives, social scientists, life scientists, physical scientists, attorneys, designers -- whether the problem situation exists for twenty minutes or twenty years. We do not speak of isolated clever tricks that help in particular situations. We refer to a way of life in an integrated domain where hunches, cut-and-try, intangibles, and the human "feel for a situation" usefully co-exist with powerful concepts, streamlined terminology and notation, sophisticated methods, and high-powered electronic aids. Engelbart (1962, web reference I.A)

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Engelbart's hypertext system, 'NLS' (later renamed 'Augment') was developed from 1963 through 1968 with funding from the US Defense Advanced Research Project Agency (DARPA) and National Aeronautic and Space Administration (NASA). Barnet (2005, pp. 124-163), Gilles (2000, pp. 93-100)

In December 1968 Douglas Engelbart first publicly demonstrated NLS in a 3,000-seat hall at the San Francisco AFIPS Fall Joint Computer Conference. Sitting beneath a 20-foot video projection screen, he adjusted his headset and used the computer 'mouse' he invented to click through a live 90 minute demonstration of shared screen video and interactive hypertext that Andy van Dam called "the mother of all demos", van Dam (1999), Engelbart (1968).

The NLS demo was not a solo act. Sitting in downtown San Francisco, Engelbart demonstrated shared real-time interactive editing of documents with colleagues using NLS in Palo Alto, over 20 miles away. NLS was design from the beginning to support the long-term collaboration of creative problem solving teams. Engelbart (1962, web reference III.B.7)

One important element of NLS is the shared, time ordered *Journal* which provides the structural container and history for individual documents (in contrast to the now traditional document file and hierarchical folder system). In 1975, Engelbart said:

> The term "journal" emerged early in the conceptualization process for two reasons:
>
> I felt it important in many dynamic operations to keep a log (sometimes termed a "journal") that chronicles events by means of a series of unchangeable entries (for instance, to log significant events while evolving a Plan, shaping up a project, trouble-shooting a large operation. or monitoring on-going operations). These entries would be preserved in original form, serving as the grist for later integration into more organized treatments.
>
> I also wanted something that would serve essentially the same recorded-dialogue purpose as I perceived a professional journal (plus library) to do.
> - Engelbart (1975, web reference 7A)

In the same article he notes:

> For a true dialogue to work within this system, careful conventions must be followed about citing previously published items. An important value derived from the above storage and access provisions is that when one author wants to write about the work of another, he can cite it explicitly in his text with assurance that his reader has a straightforward way to access the cited work. Where this cited-work accessibility is dubious, an author is considerably burdened. Over a period of time the citations to prior works

grow into a branching network that keeps earlier, relevant writings linked to present thinking.– Engelbart (1975, web reference 6E-6F)

Engelbart's NLS 1968 demonstration greatly influenced a generation of researchers including Alan Kay (present at the 1968 demo) who adopted and extended the mouse and many of Engelbart's windowing and user interface concepts at the Xerox Palo Alto Research Center (PARC), see Engelbart's personal chronicle at http://www.bootstrap.org/chronicle/chronicle.html.

van Dam also credits Engelbart with the impetus to make his next generation hypertext system - the File Retrieval and Editing System (FRESS) a multi-user system with many of the structured outlining capabilities of NLS / Augment, van Dam (1988).

Through the 1970's and 1980's, Engelbart's NLS / Augment system (sold by SRI to the timesharing division of McDonnell Douglas) was the only commercial multi-user hypertext system. Because Augment, like other hypertext systems required customers to put all the information they wished to share and link into a proprietary format, few enterprises were willing to take the leap. Hypertext systems became research projects.

In 1990 Tim Berners-Lee made his 'World Wide Web' proposal to his managers at CERN (the European Organization for Particle Research) in order to solve a vexing problem of documenting and keeping track of relationships between all of the people, experiments, and machines. He made his proposal after finding no hypertext systems that were capable of – or interested in - linking content stored and edited on the multiple computers of CERN's research network. Berners-Lee (1999, pp. 26-28)

Finding no ready solution, he defined a simple protocol (HTTP) to link files written in a basic markup language (HTML) over a standard communication layer such as TCP/IP. By then end of 1990, Berners-Lee personally wrote the first web server and web browser for the NeXT computer to demonstrate his concept. He said:

> What was difficult for people to understand about the design was there was nothing else beyond URI's, HTTP, and HTML. There was no central computer 'controlling' the Web, no single network on which these protocols worked, not even an organization that 'ran' the Web. The Web was not a physical 'thing' that existed in a certain 'place.' It was a 'space' in which information could exist. Berners-Lee (1999, p. 36)

By the standards of then-current commercial and research hypertext systems, this loose collection of protocols was seen as unreliable and easily broken. Unlike data that was parsed before being placed in a reliable data store, HTML documents could be written using a notepad editor with no enforcement of syntactic rules.

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Moving an HTML file from one computer to another would break all incoming links.

But, by the end of 1991, Berners-Lee's simple, unreliable (but open) protocol gained rapid bottom-up acceptance as a good enough way to link information stored on different computers, and by 1995 the World Wide Web lived up to its name by becoming a platform linking millions of documents throughout the world.

Intelligence, Dialog, Knowledge Product

As the World Wide Web was gathering steam, the only commercial products with substantial hypertext functionality were programming systems ranging from Apple Computer's HyperCard to Lotus Notes, or hypertext authoring systems intended to create and publish a potentially large but static hypertext corpus, such as Owl Ltd in the United Kingdom or DynaText in the United States.

Each of these products (as well as Engelbart's NLS/Augment system and research hypertext systems such as Intermedia) shared a major limitation: the only information that could be effectively linked and used was information that was authored within, or imported into, that system.

Lotus Notes was the only product that enabled content to be reconciled across multiple repositories, but it was a closed universe with proprietary and relatively expensive client and server software. While this could be justified for use within a single enterprise, it made cross-enterprise collaboration difficult, and open communication or commerce spanning enterprises and the general public impractical. Email was the only medium that could effectively transmit messages across the boundaries of the opaque business systems.

In 1992 Douglas Engelbart wrote *Towards a Strategic Role for Groupware*, which strongly argued for the creation of an Open Hypertext System (OHS) to support a process for which Engelbart created the acronym CODIAK (CONcurrent Development, Integration and Application of Knowledge), Engelbart (1992).

The CODIAK process is in essence one of continuous improvement applied at multiple levels. Engelbart refers to the business activity itself (e.g. Product R&D) as the "A" level activity (consisting of a human system and a co-dependent tool system).

Many organizations devote effort to finding ways to improve their ability to perform A level activities by studying, analyzing and implementing changes to the A level human and tool systems. Engelbart refers to the human system and co-dependent tool system dedicated to this *improvement* a "B" level activity. A B level activity for Product R&D might focus on identifying changes to A level procedures and tools in order to reduce product time to market.

Engelbart asked: *'Is there a set of basic capabilities whose improvement would significantly enhance both the higher-level operational A Capabilities and this self-improvement B Capability?'* (Engelbart 1992, web ref 5A1).

Engelbart's answer is 'Yes!' and he calls this a "C" level activity (again with its own human and tool system):

> Each organizational unit is continuously analyzing, digesting, integrating, collaborating, developing, applying, and re-using its knowledge, much of which is ingested from its external environment (which could be outside of, or within, the same organization.
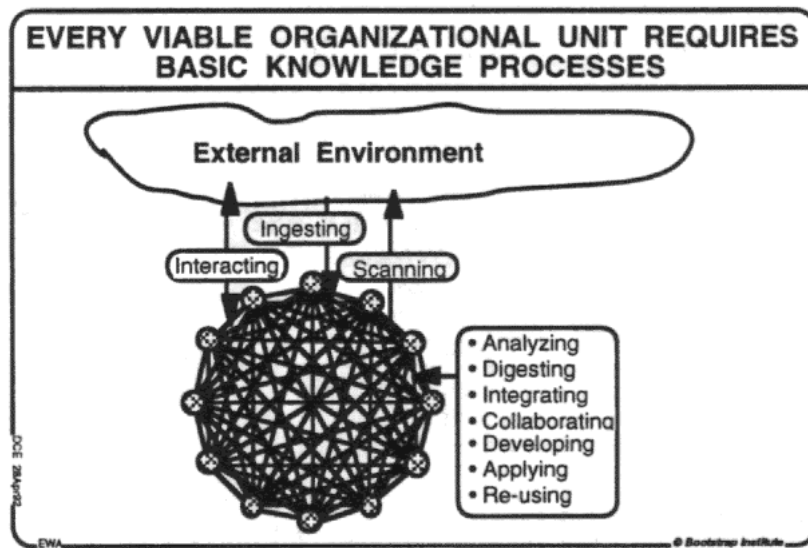
CODIAK: The COncurrent Development, Integration, & Application of Knowledge

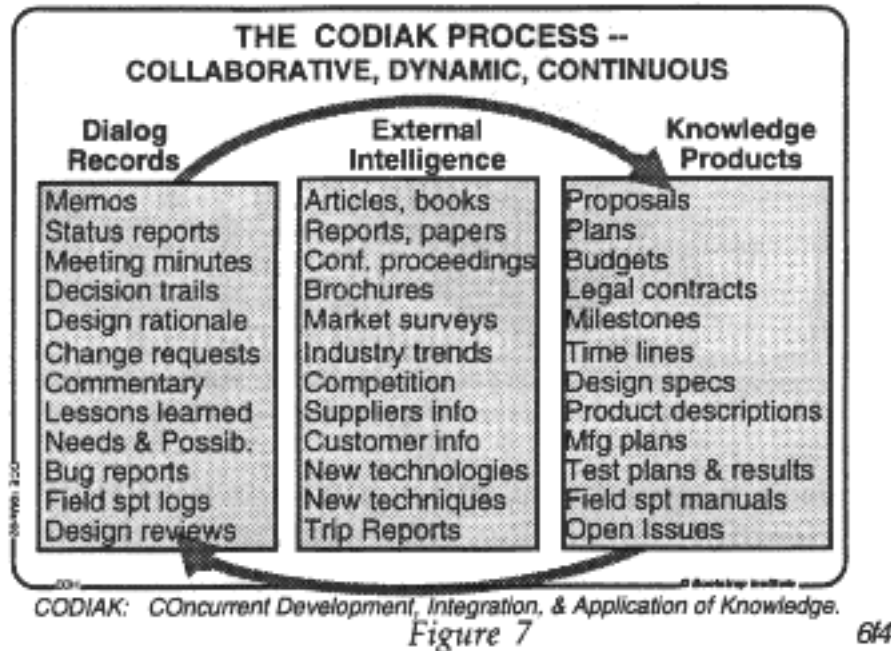Figure 6   6e1

[Figure 6 shows an organization unit in the form of a circle of constituent individuals and/or teams or departments, with lines interconnecting them all with each other representing continuous exchange and communication The organizational unit is interacting with its external environment, scanning for and ingesting intell, as well as continuously analyzing, digesting, integrating, collaborating, developing, applying, and re-using an evolving knowledge base. This is the CODIAK process.]

A result of this continuous knowledge process is a dynamically evolving knowledge base as shown in Figure-7 below, consisting of three primary knowledge domains: intelligence, dialog records, and knowledge products (in this example, the design and support documents for a complex product).

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THE CODIAK PROCESS --
COLLABORATIVE, DYNAMIC, CONTINUOUS

Dialog Records	External Intelligence	Knowledge Products
Memos	Articles, books	Proposals
Status reports	Reports, papers	Plans
Meeting minutes	Conf. proceedings	Budgets
Decision trails	Brochures	Legal contracts
Design rationale	Market surveys	Milestones
Change requests	Industry trends	Time lines
Commentary	Competition	Design specs
Lessons learned	Suppliers info	Product descriptions
Needs & Possib.	Customer info	Mfg plans
Bug reports	New technologies	Test plans & results
Field spt logs	New techniques	Field spt manuals
Design reviews	Trip Reports	Open Issues

CODIAK: COncurrent Development, Integration, & Application of Knowledge.

Figure 7   6f4

From Engelbart (1992, web ref 6E-6F)

Engelbart's proposed creation of an Open Hypertext System (OHS) to embody NLS / Augment concepts (including the time-ordered Journal) in a framework provided as: 'an "open system" of hyperdocuments and associated network and server architectures', Engelbart (1992, web ref 7C). He argues that OHS would become the core of a C level tool system that would enable organizations to continuously improve their A and B level activities.

> An investment that boosts the A Capability provides a one-shot boost. An investment that boosts the B Capability boosts the subsequent rate by which the A Capability increases. And an investment that boosts the C Capability boosts the rate at which the rate of improvement can increase. (To be slightly mathematical, investing in B and C boosts respectively the first and second derivative of the improvement curve - single and double compounding, if you wish.) Engelbart (1992, web ref 5C)

Weblog - the NLS Journal Revisited

The central thesis of this paper is that the weblog format provides a stable, open journal, which links and comments on the intelligence, dialog, and work product contained within the weblog, while connecting to all sources addressable on the public or a private Web.

Because the weblog is _itself part of the public (or private) Web_ it can preserve a stable, addressable set of references, which can be linked to by any other Web source, or analyzed by any application that has permission to address that weblog's content. This interoperability addresses Engelbart's primary concern about proprietary and opaque representations (the norm prior to the Web) creating silos of information that would make universal linking and interchange difficult or impossible.

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CC: Some rights reserved

The time ordered and uniquely identifiable articles (or posts) *within* the weblog correspond directly to individual documents with the NLS Journal. Like documents in the Journal, articles with the weblog should either be read-only, or include revision history.

Any link to content external to the weblog is subject to the same uncertainty as any other link in Berners-Lee's web – content can change or abruptly disappear at the whim of the publisher, by accident, or if the publisher goes out of business. This limitation does not generally apply to Web addressable resources that have lasting commercial value, or Web addressable resources created and maintained in stable repositories such as Enterprise Content Management or line of business systems managed by businesses for their public or private use.

It is also possible to deploy weblog products that can clip and retain an independent record of valuable but potentially transitory facts or documents (used subject to copyright law), or post a brief independent summary to a weblog.

The last point is worth analyzing. Any information posted to the public Web can be discovered and commented on by any person with an interest and a free weblog. The fact that a person or organization posted an item mentioning any phrase or URL in one of over 14 million weblogs monitored by Technorati.com (or one of their competitors) can be reported to anyone with a (free) Technorati.com account in near real time via an RSS subscription. See Sifry (2005).

Millions of human eyes and their agents constantly scan and evaluate items posted to the public Web using Web search, notification, and social tagging engines to focus on a particular topic. When a person finds a "momentarily important item" [Bush (1945, p. 1)] by directed search or serendipity, it is simple to post a note and link to that item on their weblog. If the item is of genuine interest, the weblog post will be discovered and discussed by others, a social process that amplifies a weak signal and can add collaborative information. And the weblog post can provide a permanent, persistent record of the discovery – if the weblog is hosted and managed by a reliable and responsible party.

A note and link from a weblog also adds a measure of statistical redundancy to the unreliable Web. Although the content of an arbitrary Web resource referenced by the weblog post could be changed or disappear at any time, if the original content is noticed, linked to and commented on by one or more persons, a secondary record of the original content may remain in a form that is difficult to suppress and easy to find.

Like Berners-Lee's original concept of the Web, use of weblogs and wikis as easily deployed and relatively stable authored indices to arbitrary Web content is a pragmatic compromise. The Web's naturally evolving infrastructure provides complementary Web search, RSS/ATOM syndication, notification and search, augmenting the loose but massively scaleable architecture of the Word Wide Web.

Dark Blogs - Weblogs in the Enterprise

Corporations, government agencies and other organizations deploy weblogs on the public Web to promote open communication and exchange of ideas or opinions with the general public.

Less visibly, enterprises deploy weblogs as platforms to support business uses such as competitive intelligence, research, product development, sales, professional services and other uses. These business use cases all involve groups of individuals working together over an extended period of time for a shared purpose that relies on external intelligence, internal dialog, and ready access to shared work product – the core element of Engelbart's CODIAK process outlined earlier in this paper. Because these deployments are generally not visible to the general public, some analysts refer to these deployments as 'dark blogs', Charman (2005).

Based upon personal experience, I believe that three practical requirements differentiate 'dark blog' use cases:

1) The weblogs must be able to *securely* address a *selected* audience rather than the public Web. The weblogs can be openly deployed behind a firewall, or opened to selected internal and external stakeholders, including selected customers, suppliers, and others using web authentication and encryption.

2) Weblogs with multiple authors (group weblogs) are used in addition to – or instead of – many personal weblogs. This makes it possible for individuals to shift among different weblogs for a different projects or purposes and address posts or comments to the attention of the appropriate group – although the extended audience of each weblog may be much larger, if not enterprise wide.

3) Personal identification, authentication and authorization functions of weblogs need to use enterprise IT directories and standards to enable large scale, secure deployment.

Meeting these three requirements makes it possible to independently deploy weblogs throughout an enterprise and provide internal and external stakeholders with permissioned access to any enterprise weblog based on a centrally maintained directory of identity and role.

Competitive Intelligence

Within the tasking, collection, analysis and reporting functions of the classic intelligence cycle, Fuld's 2004/2005 Intelligence Software Report contains a survey that finds: "Sharing information – more than collection – represents the intelligence technology consumer's greatest (34%) need." Fuld (2004, p. 7).

In the government sphere, the United States Commission on Weapons of Mass Destruction was even more emphatic, stating:

> Most customers of intelligence products cannot search electronic libraries of information or catalogues of existing products. They cannot query analysts in real time about needed information or upcoming products. They cannot link finished intelligence documents together electronically to create a reference trail. They cannot easily review research programs to provide suggestions or recommendations. They cannot explore thoughts and views with analysts in an informal online environment. They cannot read informal sages alerting them to new information which may include analysts' preliminary thoughts or judgments on an item. They cannot tailor information displays to their needs. They cannot reshape raw data into graphics and charts. They cannot access different intelligence media electronically. WMD Commission (2005, p. 434)

If weblogs are claimed to provide superior capabilities for collecting external intelligence, keeping a faithful record of internal dialog, and linking to analytic work product (per Engelbart's CODIAK model), then Competitive Intelligence application should provide an excellent test case.

The balance of this paper provides a brief report on weblog deployments for Competitive Intelligence as proposed by Frank (2003) and Johnson (2004).

Competitive Intelligence Case Study – European Pharmaceutical Group

Case Study 01 – A European Pharmaceutical Group is one of a series of Corante Research reports on the topic _Dark Blogs – The Use of Blogs in Business_. The study describes the deployment and use of a weblog product for Competitive Intelligence. The subject of the study - a 4,000 person European pharmaceutical group - wishes to remain anonymous. The report is available without fee online, see Charman, (2005).

The company's CIO, who is also responsible for the corporate CI function, initiated the CI Weblog project. The CIO said:

> "The blog format lends itself particularly well to the type of material that we're producing," said the CIO. "Competitive information is always very unstructured and comes in lots of different ways — through the internet, internal sources, and various other ways. Using blogs to organise the data is quite effective because it doesn't impose too rigid a structure where we need some inherent flexibility." – quoted in Charman (2005, p. 5)

The deployment was carefully planned to match the available staffing and respond to the CEO's mandate to make CI a more collaborative process, making people throughout the group more aware of significant events in a very competitive market, and opening up internal dialog on these events, as well as dialog on competitive analysis and strategy.

The CIO's team decided to start by deploying six CI weblogs, each authored by a team rather than a single individual. Each team weblog can be written, read or commented on by a particular audience within the Pharma group:

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Each blog draws from the same database with posts directed to different blogs through the use of labels, e.g. one post can be published in two different blogs simply by applying two labels to it. Thus if a user has permission to read multiple blogs, they do not have to visit each blog in turn, but instead see all relevant posts on one integrated home page…

Within that installation we have four blogs organised according to our therapeutic areas of interest such as oncology and endocrinology. These blogs are restricted to a named user population of approximately 150 people at the moment, comprising marketing, research and development, operations and senior management.

"In addition we have a blog for more general industry news, which is open to any intranet user. And then we have a private blog for the editorial committee, for the review and analysis of new content, which is limited to about 10 people."

The blogs are organized thus:

- General news — anyone within the company can read and comment, but only the CI editorial team can post new articles directly. Comments and email submissions are reviewed and moderated by the editorial team before they are published to the blog.

- Therapeutic blogs — access to these blogs is restricted to a named community of about 150 people, who can read and comment. Content and comments are again moderated by the editorial team.

- CI Editorial Board — visible only to the editorial team.

Charman (2005, p. 5)

This structure permits members of the CI editorial team to review reports of events to determine the accuracy and relevance of the report before making it visible to the general enterprise or to therapeutic teams who have the primary responsibility to formulate and manage the primary business areas.

Therapeutic team members can post questions or comments about events or analytic reports with the knowledge that primary stakeholders throughout the organization can see the discussion. Therapeutic team discussion can lead to General News publication of competitive strategy, or a specific call to action with the endorsement of management.

Initial CI moderation allows readers throughout the company to benefit from an assessment of the event and cross-links to relevant analysis, but broad participation is actively encouraged.

Because the weblogs maintain a stable archive of earlier analysis, events and discussion, it is simple to reference an earlier post to make a point or question an earlier decision. All parties can rely on the weblog as shared journal rather relying solely on a personal email archive or their memory to provide context.

The initial response to the CI weblogs (rolled out for general access February 2005, reported May 2005) has been good. People value the content that is being published, and are starting to use the comment feature in addition to reading the blogs as "web newspapers". The CIO said:

> "About a month ago, just after launch, I was presenting the system to our executive committee, some of whom had not yet seen the blog or received the email digest. I was two or three minutes into the demo when they started to focus on the content and talk about the business issues brought up by the material they were reading, which from my point of view was great. That's exactly what you want — forget about the application and focus on the content that it delivers." Quoted in Charman (2005, p. 15).

The top software feature in promoting user acceptance is the "daily digest". Each user can elect to receive an email message that is automatically generated once a day (or on a user specified schedule) containing the title and first paragraph of new posts or comments posted to any of the blogs they can read. Each title links back to the full weblog entry.

The single summary message provides an alerting function that replaces multiple email messages that otherwise might be broadcast to a company wide or large team email list. This consolidation enables a larger number of CI and discussion notes to be widely and frequently distributed to a larger audience, promoting better shared situational awareness and encouraging elective participation.

The weblog software used by the Pharma group supports RSS and ATOM newsfeed syndication, but a only a small number of persons within the organization are familiar with this newer medium for alerting and distribution of weblog content (summaries or full articles). Email distribution of a summary digest "forms a bridge between the old and new technologies" Charman (2005 p. 16)

Competitive Intelligence Weblog – United States Pharmaceutical Division

A US Pharmaceutical Division's Competitive Intelligence manager reported similar experience, Private Communication (2005). The US Pharmaceutical Division is comparable in size to the European Pharmaceutical Group of Charman (2005). Like the European group, the US Division was responding to a top down mandate to improve working communication among different research and business groups.

Prior to introduction of weblog technology, the CI team emailed monthly reports containing analysis and news summaries in the form of a Microsoft Word document of twenty pages or more. The CI Manager took personal responsibility for introducing the

weblog application to a small CI core team and larger number of "embedded CI representatives" in disparate groups over a two-week period.

The primary benefit for was the ability to easily create and share historical weblogs of information clipped and collected from internal business sources as well as licensed material for CI review, and to release analytic reports and news alerts on continuous basis (i.e. posting news or analytics to a distribution weblog several times per day). This replaced daily collection in disparate Excel spreadsheets and databases and a monthly coordination process.

The primary benefit to the recipients of the CI work product was timelier delivery of information in a form that was more likely to be read, commented on, and acted upon. Like the European Pharmaceutical group, the email digest was widely perceived as an important factor in stimulating participation, particularly by senior management who:

1) Liked to read a very brief summary on a daily basis, with the ability to click through for detail (versus reading a monthly report as a Microsoft Word document)

2) Were less likely to regularly visit the CI Weblog page on a regular basis to read news than members of the research and business groups who used the CI weblog to support their analysis.

Three months after initial rollout the Pharma Division CI group won a corporate best practice award for their CI weblog deployment.

Discussion and Conclusion

The theoretical benefits of weblog technology applied to collection, internal research and external dissemination functions of Competitive Intelligence are relatively clear. The early use case results are consistent with expectations.

By appealing both to the CI practitioners who are the primary creators of content, and to their customers, who value timely delivery in an more palatable form, this application of weblog technology avoids collaboration software traps identified by Jonathan Gruden in 'Groupware and Social Dynamics: Eight Challenges for Developers', Grudin (1994)

The virtuous pattern to look for is: less work for the primary content contributors combined with more frequent, timely and easily assimilated work product or awareness concerning the primary activity, directed to an extended audience of stakeholders, including management. A significant enterprise benefit is creation of a contemporaneous log of significant discoveries, events, decisions and results for "bottom up" knowledge management and process improvement.

For reports of weblog use in support of Program Management and other business use cases, see Brown (2005) and Wood (2005).

By creating easily authored content and commentary within the weblog and linking to any Web addressable content, weblogs create an open and scalable resource that can be used for notification and reference, as well as mined for historical insight across the largest enterprise.

> Near the end of his life, Bush thought of the Memex as more than an individual's machine. The 'ultimate [machine] is far more subtle than that' (Bush 1959, p. 182). Memex would be the centerpiece of a structure of inheritance and transmission, a structure that would accumulate with each successive generation. In *Science Passes*, Bush entitled one of the sections 'Immortality in a machine' (Bush 1965, p. 189): it contained a description of Memex, but this time there was an emphasis on its 'longevity' over the individual human mind (Bush 1965, p. 190). This is the crux of the matter; the trails in Memex would not grow old, they would be a gift from father to son, from one generation to the next. – Barnet (2004 p. 117)

References

Barnet, B (2004) 'Lost In The Archive: Vision, Artefact And Loss In The Evolution Of Hypertext', PhD Thesis, University of New South Wales PhD thesis [published at: http://www.library.unsw.edu.au/~thesis/adt-NUN/uploads/approved/adt-NUN20050725.150223/public/02whole.pdf].

Berners-Lee, T with Fischetti, M (1999) *Weaving the Web*, HarperCollins, New York.

Brown, D. and McVay, T (2005*)* 'Weblog Technology for Acquisition Program Management'. *Defense AT&L Magazine*, Mar/Apr pp. 26-29 [also published at: http://www.dau.mil/pubs/dam/03_04_2005/bro-ma05.pdf].

Bush, V. (1945) 'As We May Think', *Atlantic Monthly,* Vol 176, July [also published at: http://www.theatlantic.com/doc/194507/bush].

Bush, V. (1959), *Memex II*, unpublished manuscript held by the Vannevar Bush Papers, MIT Archives (MC78, Box 21), [Reprinted with permission in Nyce and Kahn (1991) pp. 165-184].

Bush, V. (1967) 'Science Pauses' in *Science is Not Enough*, Morrow, New York pp. 13-40 [Reprinted with permission in Nyce and Kahn (1991) pp. 185-196].

Charman, S. (2005) *Dark Blogs: The Use of Blogs in Business - Case Study 01 A European Pharmaceutical Group*, Corante Research, June 13. [published at: http://www.corante.com/strange/archives/2005/06/13/dark_blogs_case_study_01_a_european_pharmaceutical_group.php].

Engelbart, D. (1962) *AUGMENTING HUMAN INTELLECT: A Conceptual Framework*, SRI Report AFOSR-3233 [published at: http://www.bootstrap.org/augdocs/friedewald030402/augmentinghumanintellect/ahi62index.html].

Engelbart, D. (1968) *Doug Engelbart 1968 Fall Joint Computer Conferences (FJCC) Demo*. [Internet site containing annotated video of the event published at: http://sloan.stanford.edu/MouseSite/1968Demo.html].

Engelbart, D. (1975) 'The NLS Journal System', *COMPCON 75 DIGEST*, IEEE Computer Society, September, pp. 173-188 [also published at: http://www.bootstrap.org/augdocs/augment-33076.htm].

Engelbart, D (1992*)* 'Toward High-Performance Organizations: A Strategic Role for Bootstrap Institute'*, Proceedings of the GroupWare '92 Conference*, San Jose, CA, August 3-5, Morgan Kaufmann Publishers [also published at http://www.bootstrap.org/augdocs/augment-132811.htm].

Frank J. (2003) 'Organize, Analyze, Distribute: Enterprise Weblogs', *Competitive Intelligence*, SCIP. Vol 6, No 2 March-April, pp. 51-52.

Fuld & Company (2004) 'Intelligence Software Report 2004/2005', Dec. [Free abridged report published at: http://www.fuld.com/Products/ISR2004/HomePage.html].

Gillies, J. and Cailliau, R. (2000) *How the Web was Born,* Oxford University Press, Oxford UK.

Grudin, J. (1994) 'Groupware and Social Dynamics: Eight Challenges for Developers", *Communications of the ACM*, Vol 37 No 1, January, pp. 92-105.

Johnson, A. (2004) 'Competitive Intelligence Blogs in the Enterprise'. *Competitive Intelligence*, SCIP Vol 7 No 3. May-June, pp. 52-54.

LiveJournal (2005) 'LiveJournal Usage Statistics', www.LiveJournal.com August [published at: http://www.livejournal.com/stats.bml].

Nyce, J. and Kahn P. Editors (1991) *From Memex to Hypertext,* Academic Press, San Diego CA, USA.

Private communication (2005) United States Pharmaceutical Division, Competitive Intelligence Manager.

Rainie, L. (2005) 'The State of Blogging', Data Memo, *Pew Internet and American Life Project*, January. [published at: http://www.pewinternet.org/PPF/r/144/report_display.asp].

Safire, W. (2002) 'On Language: Blog', *New York Times Magazine,* July 28, p. 17.

Sifry, D (2005) 'State of the Blogosphere, August 2005, Part 1: Blog Growth', www.Technorati.com August, [published at: http://www.technorati.com/weblog/2005/08/34.html].

Simpson, R., Renear, A., Mylonas, E. and van Dam, A. (1996) '50 Years After "As We May Think": The Brown / MIT Symposium', *Interactions*, ACM Press, Vol 3, Issue 2, March, pp. 46-67.

WMD Commission - The Commission on the Intelligence Capabilities of the United States Regarding Weapons of Mass Destruction (2005), *Report to the President of the United States*, March, [web copy at: http://www.wmd.gov].

van Dam, A. (1988) 'Hypertext '87 Keynote Address', *Communications of the ACM*, Vol 31, No 7, July October [also published at: http://www.cs.brown.edu/memex/HT_87_Keynote_Address.html].

van Dam, A (1999) 'Education: the Unfinished Revolution' *ACM Computing Surveys*, Vol 31, No 4 December [Presented at Engelbart's Unfinished Revolution, a Symposium at Stanford University December 1968]. [also published at: http://www.cs.brown.edu/memex/ACM_HypertextTestbed/papers/63.html].

Wood, L. (2005) 'Blogs & Wikis: Technologies for Enterprise Applications?', Gilbane Consulting Report, March [published at: http://www.gilbane.com/gilbane_report.pl/104/Blogs__Wikis_Technologies_for_Enterprise_Applications.html].

Wikipedia (2005) 'Wiki' definition [from collaboratively published Internet site at: http://en.wikipedia.org/wiki/Wiki].

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