Microsoft Cloud 2.0

FAST Social Computing - Building your organizations
Expert Operating System

MicrosoftCloud2.com
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Microsoft Cloud 2.0 – Business Transformation

best practices

The principle objective of this document is to showcase the Microsoft FAST Search engine technology, and the critical role it plays in enabling new ‘Cloud 2.0’ transformational delivery scenarios for the use of social media and Cloud Computing technologies.

The Business Value of Enterprise Search

Microsoft – Knowledge worker software

This paper focuses on the Microsoft FAST Search engine technology, software that Microsoft obtained through their 2008 acquisition of Norwegian company FAST.

It has since been integrated into the Sharepoint suite, and thus becomes part of a portfolio of tools that Microsoft intends for ‘knowledge workers’, staff who regularly work with computers and complex information, from sales through legal teams, project managers and more.

The combination of tools encompasses the desktop set, like Word and Outlook, as well as now Cloud-based services too like Office 365.

These tools improve the day to day productivity of staff in various ways such as:

- **Work automation** – Automation of the essential but mundane and time consuming tasks such as organizing meetings, communicating with team members while travelling and so on.
• **Better project and issue management** – Improved sharing of project action items, status updates and other essential information flows.

• **Knowledge collaboration** - Staff can more easily and quickly contribute knowledgeable insights that help others achieve their work, who then do the same.

**Enterprise Search**

The role of Enterprise Search, using the FAST tool, can therefore be seen within this context. Finding the information they need when they need it is often an exercise in the proverbial ‘finding a needle in the haystack’.

It can also become a direct part of their core business model. For example consider a recruitment agency. Their entire business cycles around a 'Search and Match' process, where candidates are supplied to employers based on their fit for the job requirements.

Candidates provide their resumes and these are then input into various in-house business applications that consultants will search at a later date when seeking possible employees for client projects.

How effectively this search process matches one to the other can therefore be seen as strategically important, however many organizations don’t necessarily reflect this in the technical functionality.

Indeed the central point of this entire white paper is to highlight is that most approach Search as a simple, low priority function built directly into each application, like this candidate database.

This means that as the number of apps grows so staff end up having to use multiple search tools and each one isn’t that powerful or sophisticated.

In contrast an Enterprise Search platform like FAST is a single, unifying replacement for all of them, as it’s most powerful feature is the ability to search any and all of these legacy systems as well as web content.

This distinction and the full range of other capabilities the platform offers is why Microsoft paid $1.2billion to incorporate it into their Sharepoint suite.
Public web search

For simplicity sake we can talk about Search relevant to two main scenarios: Public web sites and private corporate intranets.

Contextual Social Commerce

The first and main point to make about Enterprise Search is just how much more powerful a range of features it offers in comparison to what most people think of when they focusing on Search, i.e. Google.

This is effectively conveyed through the case study for Samsung.com. Seeking a more modern Web 2.0 type experience for their users Samsung switched to Microsoft FAST from the competitor Autonomy Ultraseek.

Operating 60 regional sites with demanding local markets, they must cope with challenges like cell phones having different names in each one and a need to cater for local promotional campaigns to market these products. Also the most popular searches on the site were for software downloads and drivers for products, which if they couldn’t find through Samsung.com they would turn to Google or even call into their office.

Another similar e-commerce example is the MUJI case study, they selected the tool for its powerful e-commerce support, features like ‘ImPulse’, ‘Recommendations’, ‘Content Spotlighting’ and Merchandizing – These enable web site owners to program how Search responds to certain types of queries, better packaging and presenting information in a form that helps online retailers drive conversion rates by dynamically spotlighting relevant products to shoppers as they search and navigate Web and mobile storefronts.

Because it forms product relationships without reliance on catalog or SKU information, online retailers can automatically cross-sell and up-sell between categories to drive order values and market the full extent of their catalogs.

FAST Recommendations has helped generate revenue growth between 10-20% through increased conversions, average order size and customer lifetime value.
- **Related-item recommendations.** Present similar items to consumers based on the items they are exploring, enabling “sideways browsing” between items, categories, genres, and other item types.

- **Personalized recommendations.** Present one-to-one recommendations based on a unique profile of implicit and explicit customer events such as searches, item views and previews, downloads, purchases, and ratings.

- **Social recommendations.** Connect customers with similar interests, providing a way for site visitors and shoppers to explore the relevant content and products that others like them are viewing or purchasing.

The MUJI case study highlights that their customers may purchase items in a store but they use their e-commerce site as a research tool first, driving home this point about important the Search function is to the core objective of driving sales.

These capabilities are helping the retailers develop e-commerce promotions in a third of the time than before, and the benefits aren’t limited to e-commerce sites only.

As described in the case study for [National Australia Bank](https://www.nab.com.au), they’re using it to promote financial products and services, and in this scenario this can directly drive improvements such as customers viewing 30% fewer pages before making a purchase.

Prior to adopting the technology NAB were suffering from high abandonment rates and negative customer feedback about the site usability, so they had come to understand the real business value of Search.

They recognized that web site experiences were a ‘precious and fleeting opportunity to start a conversation with a new customer’, and that they needed to leverage these technologies to maximize how effectively they exploited these opportunities.

Search supported these goals by optimizing the Search process. NAB set a benchmark that if a customer entered a specific product name search, like ‘Retirement’ or ‘Term Deposit’, it should return the exact product page as the first and highlighted result.

NAB now continually analyzes search activity to repeatedly fine-tune matching this way.
Local Service Directory Portals
These same benefits can be applied to other business models too.

As described in the Matrix case study, Virgilio.it is an Italian portal competing with MSN and Yahoo, providing news, email, video and other content and apps to around 15 million users a month.

It also operates Virgilio Local, a network of 8,100 local community web sites, one for each town in Italy, with revenue-generating services such as a 1254 telephone directory service, an online directory and other similar products for small businesses wanting to be found by this volume of traffic.

Hence Search is of strategic importance, it’s become the primary method by which they match consumer demand to revenue-generating content, catering for users’ needs for editorial content and vertical services tailored for search, messaging, social networking, maps, classified advertising, travel and weather.

FAST enables a unified search search experience to support the 1254 service, and has made it easier for administrators in town sites to customize search results to meet their local requirements.

FAST is also integrated with Bing Maps, so these directory searches can also pinpoint visual geo-locations to aid the process.

Government Services Portal
These benefits of Search aren’t limited to only these commercial e-commerce type scenarios, instead it is simply a more powerful way to connect users with the information they seek.

This means it can be applied in any scenario where organizations are looking to significantly improve the customer service that they provide through the web.
In the case of Government this is increasingly important, as clearly articulated by the SOCITM ‘Better Served’ report, where they calculate the “Cost to Serve” formula for meeting citizens needs through different channels as being:

- Face to face: £7.40 ($12 USD)
- Telephone: £2.90 ($5)
- Web: 32p (50c)

Clearly there is a massive cost reduction when an agency moves from traditional customer service methods to online ones, with Search being a primary method of meeting the needs of these customer enquiries, especially from a cost avoidance perspective.

I.e. If a user can’t find what they’re looking for on a Government web site their next step will be to call or visit the agency. **This means a poor web site Search will directly escalate to these higher level costs.**

The Canadian Province of Ontario is an example of a FAST customer using it for these purposes. Delivered by Toronto consulting firm ACIS you can read here in [their case study](#) about how they are using the same technologies and techniques but to help citizens better find the services they are looking for.

For example searching for `Drivers Licence` will quickly link them to the relevant services such as applications and renewals.

Furthermore ACIS offers professional services to conduct ongoing analysis of how effectively the Search is working, how effectively it is meeting the needs of the citizens visiting the web site.

This can be tied to their quality control programs like Six Sigma, as described in [this announcement](#) from Marian MacDonald, Assistant deputy minister, Supply Chain Management Division, Ontario Shared Services. Originating from the manufacturing sector Six Sigma focuses on identifying and eliminating faults and inefficiencies in the production line process, and this can be generalized and applied anywhere including bureaucratic process.
In the Search scenario you can think of every ‘miss’ being a fault. I.e. When a citizen is trying to find some form of public service but the Search engine fails to present it appropriately, and they then call or visit the office, this is a quality fault that needs corrected.

The ongoing analysis reporting provides this assessment and feedback loop.

**Government EOS, as a Shared Service**

ACIS offer an additional software technology, the [FAST Cloud Server](#), which then enables a Cloud model for implementing the FAST software,

This enables a critically important architecture, a shared service approach enabling a common search index to be shared between multiple agencies. This can be thought of as their ‘Government EOS’.

This is important not just from a technology efficiency point of view but more importantly from an information architecture perspective. A shared index means that a search on one site will also show relevant results from other agencies.

Governments like Ontario have a policy of `No Wrong Door` meaning that customer service in one agency can’t claim “Not my job” and try and pass them on to someone else, the universal brush off that every person hates.

Search is one way of implementing this, because a shared index means that a search on any one site will show a universal set of results. Each agency can program it so that on their site their information gets preference obviously, but also there is this universality too.

**Cloud 2.0 – Crowdsourcing knowledge portals**

ACIS has further built on FAST to enable it to act as a ‘Crowdsourcing Portal’, through their [Search and Social Network module](#).

This refers to a process of Collective Intelligence, where one large group of people act in a wholly unified manner towards a greater goal, using self-organizing organizational models.

An example is Wikipedia where thousands of people have voluntarily edited the world’s largest knowledge base. Pioneers like Beth Noveck, previously Open Government leader
for the USA, applied this same science in key public sector process areas like patent applications, to address a number of core issues that impact performance by ‘harnessing the crowd’ versus traditional organizational approaches.

The SSN module enables FAST to offer a web site portal where users can then tag other web content so that they are playing a role in building the Search index. An example of this in action can be seen at MedTagger.com, where the core idea is demonstrated – Site users can submit entries that update the Search engine with their recommendations.

The model and value of this approach is known as ‘Peer to Peer’, meaning quite simply that it’s based on the idea that the person with the most sought after knowledge on a particular topic would be another medical patient with the same condition.

Someone recently diagnosed with diabetes for example, will often find the most useful person to liaise with is an existing patient with the same condition. This value is then reflected in the Search, making it much more responsive to patients’ needs.

This is an organizational model known as ‘Chaordic’ or in general layman terms ‘peer to peer’, best known through very large scale Internet sites like Napster or Ebay, where the main role of the organization and web site is to act as a minimal marketplace interface to enable communities of users to self-organize the content and services they want.

Not only does this improve the Search function but it also adds more community value, users who are submitting content will also feel they are helping too and there is a human connection factor too.

Web site owners can easily add this and integrate it into their existing web site with minimal HTML type changes required, meaning they can significantly upgrade their Search function, adding this community effect.
Utilizing these kinds of approaches can greatly improve the Search function of a web site – Imagine how accurate it would be if the site content is first being crawled by a powerful search engine like FAST and then further refined by the users of the site themselves.

A successful download to fix a computer problem would be consistently ranked and quickly rise to become the number one related Search result, further compounding the value of the Search system.

**PeopleHubs – Socializing enterprise applications**

In the same way intranets became internalized versions of the World Wide Web so social media can be used the same way, a term described as ‘Enterprise 2.0’ by Harvard professor Andrew McAfee.

This refers to the use of social software for knowledge management purposes and also ‘Crowdsourcing’ models for how organizational structures are also changing with this dynamic too, aka the ‘Wikipedia effect’.

Therefore exactly the same software can be used for exactly the same reasons, only applied to internal team working.

**Expert Operating System**

McKinsey once asked ‘[Do you know who your experts are?](https://www.doingbusiness.com/mcKinsey/DK)’ highlighting that many organizations don’t have systems for organizing and utilizing their intellectual knowledge, the catalogue of their ‘Human Capital’.

The primary value of Sharepoint is that they can be used as the tools to create and index this library, creating an ‘Expert Operating System’ (**EOS**) for how an organization works.

This is mainly because of the nature of this type of information. Human expertise about products, technologies and a myriad of other topics cannot easily be shoe-horned into the
traditional knowledge management systems, because they use ‘structured’ database type applications, like a stock control system.

In contrast human knowledge is ‘soft’ and complex, and is typically conveyed through documents, Powerpoint slide decks et al. Social media tools like blogs, wikis, online communities, Twitter et al, are ideal for sharing this type of information very quickly, and via tagging and other CMS tools can be used to build online libraries like product documentation or How To guides.

In their white paper People working together (13-page PDF) explains how Sharepoint is the ideal toolset for meeting the needs of this type of working. They explain how Sharepoint can be used to improve collaboration across organizational and geographical boundaries and how it better engages and attracts employees, amongst many other business value benefits.

At the core of these benefits is the fact that previously the most valuable information asset for an organization, the know-how expertise of a few key staff members, is poorly shared and distributed throughout the organization.

Social media addresses this through improved virtual sharing of this knowledge, it literally replicates the water cooler effect online.

For example in the Mississippi Dept of Transportation case study the primary issue was overly centralized information being held by a small group of subject matter experts, which they addressed through ‘democratizing’ this information via the FAST Search technology.

As a result Mississippi is making better use of taxpayers’ dollars and achieving better outcomes.

PeopleHubs – Platforms for Social Business

Other organizations are building on this platform and incorporating other key technologies to achieve ‘PeopleHubs’.

Best practices for this approach are nicely described in this MindTree case study, where it describes how they have built a unified corporate intranet portal that enables social media
to be utilized throughout their organizational activities, such as making leadership announcements.

It also addresses technical issues, most notably a lack of consistent user interface across their many internal applications, as well as a lack of single sign-on.

By also using FAST to integrate legacy systems like SAP into this portal they are socializing” this enterprise application.

Social media sites like Youtube, Twitter, Facebook and Linkedin have exploded over the last decade with hundreds of millions of users adopting these new forms of communications.

Using the same underlying technologies for commercial purposes has now become known as ‘Social Business’, and it encourages better staff collaboration through a variety of innovative user-centric tools.

This also blends these consumer and business worlds. For example the Outlook Social Connector integrates social media into your email, with connectors for popular portals like Linkedin. This provides users with a number of productivity-boosting working practices, like connecting with contacts directly from within emails, seeing their status update activity and so on.
FAST offers features that can further maximize this productivity. Users can create their own ‘Monitored Search’ feeds, basically an alerting service like Google Alerts, but where it can read across the enterprise IT landscape including from apps like CRM, SAP et al.

**Social Tagging**

As well as this monitoring the other critical dimension to Social Business is the ease by which users can categorize information, making it easier for their colleagues to find. In contrast to traditional IT knowledge management systems, publishing and sharing information via social media is ultra-quick and simple.

A key method of achieving this is called `Social Tagging` - Applying meta-data to documents and files within this context of social media collaboration.

The value for this is explained in the [General Mills case study](#), where they use FAST to support their product innovation process. Researchers are continually looking back over previous campaigns, requiring them to explore the EOS in terms of product names like Cheerios cereal.

Internally they have their own ‘business language’, for example they refer to the Cheerios product as YBC, and so the Search engine must be capable of indexing and using synonyms like this. By doing so it helps all levels of user master this complexity.

Furthermore the data they need might be contained in Powerpoint presentations or Excel spreadsheets, and so the ability for the Search engine to crawl and index all of this type of content is crucial for the enterprise scenario.

Not only can FAST do this but it can even search and index from content provided by dynamic Web services.
FAST can further accelerate this Social Business paradigm and the benefits it brings. One of the major obstacles to its success is that no matter how easy the tools become, it is still a big hurdle to have staff first contribute a bulk of information about themselves to make it actually useful.

`My Sites` is a Social Business feature of Sharepoint where users populate a Linkedin type directory but in the busy corporate world these can lie empty as employees never get around to finding the time to populate them.

FAST can be used to automagically do it for them. It can scan a user’s email inbox and draw from this all the knowledge and social relationship information needed to do it for them.

As described in the case study of the International Monetary Fund this ability to handle scale is critical. Their situation was one where their unstructured pool of content had grown to over 3 million documents stored in OpenText eDOCs, 500,000 stored across Sharepoint sites and over 27 million across network file shares.

With each application having its own Search function this had resulted in a knowledge management system that simply failed to return knowledge, and executives ended up simply asking their assistants to manually find and send them the files!

**Salesforce 2.0**

In the commercial world naturally growing sales is the primary goal, and so how these new technologies can be applied here is a very powerful ‘Salesforce 2.0’ scenario.

By doing so we can really demonstrate what the core transformations in working practices that it encourages and enables, and how this can be translated into bottom line business improvements.

Traditional sales force automation tools (Salesforce 1.0) were first designed to cater for the basics of contact management (e.g. ACT!), and then evolved to support pipeline management, where possible deals could be associated with these contacts. (e.g. Goldmine).
The critical point to highlight is that this is an approach that helps salespeople record the
details of their work, **it doesn`t help them better do that work.**

In contrast Salesforce 2.0 is about using these new knowledge collaboration tools for
exactly this reason. The bulk of work for salespeople centres around finding experts within
their organization, and working collaboratively with them to co-author sales proposals for
client opportunities.

Automating this knowledge work is therefore where the biggest productivity gains can be
made, in a form that directly translates into a higher volume of better quality sales
proposals.

The perfect example to illustrate this effect is Microsoft themselves, in their **Infopedia case
study.**

Like MindTree they had also experienced the proliferation of uncontrolled Sharepoint
sites, meaning that there was no uniformity in the user interface and also chaotic filing of
information resulting in documents being buried n levels deep.

This first InfoWeb network of sites provided users with access to sales collateral and other
resources intended to support their selling activities, so it was constricting the throughput
of their sales pipelines.

Microsoft have therefore also adopted the same PeopleHub approach as MindTree,
building a portal that standardizes user interface and single sign-on, and then utilizes FAST
to make all of the content searchable.

This eliminates the need for users to know what taxonomy trail to follow to find the
information they need, and also critically the need for them to index documents with these
categories – It simply wasn’t working.

In contrast users now submit all content via one standardized form, which as a wiki
technology can then be very easily and quickly edited too, and then FAST does the `heavy
lifting` of indexing all of this raw content with Microsoft’s version of their EOS.
They also use other FAST features like ‘federated Search’ to draw in content from their partners too, so these knowledge networks can truly provide all of the information salespeople need, right at their fingertips.

**Enterprise Cloud Search**

By taking this simpler but more powerful approach to building their portal one of the primary benefits Microsoft have reported is reducing their maintenance costs by 50%.

This type of benefit also goes hand in hand with the wave of Cloud adoption for these types of software systems. Rather than deploying them on-site and having development teams heavily customized them, businesses are increasingly realizing this ultimately destroys the value they’re intended to achieve, and so instead like Microsoft and MindTree are doing, they’re opting for these tools which can be employed off-the-shelf.

This standardization makes them ideal for Cloud delivery too, and this highlights the multi-dimensional manner in which Cloud configurations can be assembled. Often the assumption is always that an enterprise has to move their apps ‘into the Cloud’, but actually there are various permutations possible.

For example in [this MSDN article](#) it describes how you can upload your content to Azure and then index it with FAST software running on-premise. You can also do the opposite - you can keep your data on-premise and apply a hosted version of FAST to it.

These different approaches show how Cloud isn’t just one single approach but rather a mix and match of in-house with external services, as security, performance, business value and other factors dictate.

As documented in [this case study](#) the Tribune newspaper group in Chicago is another user of both FAST and the Azure Cloud. It explains how they use a combination that includes the Azure ‘blob storage’ to handle the massive capacity demands of so much editorial content including videos and images, and then feed the link for each item to FAST to index for Search purposes.
Shared Services Canada – Hybrid SaaS

The Cloud delivery review also brings the ACIS FAST Cloud Server back into focus – this enables a unique approach we characterize as ‘Hybrid SaaS’.

In short this means a shared service software architecture where multiple agencies can share one base of code and also share a knowledge index too. The value of this can be clearly quantified through initiatives like Shared Services Canada, where it’s recognized there is an increased need for this type of sharing between agencies.

Using the Cloud software type approach makes this very practically possible and also achieves better customer service models. Other agencies can repeat this best practice, enjoying improved search access on their site and associated cost reductions, through utilizing a shared SaaS rather than ‘buy and build’ themselves.

IM Best Practices – Migrating unstructured content to the Cloud

Many government agencies will find that these technologies are ideal for solving some key problems for them, and can also be applied in a number of ‘quick win’ areas.

For example as described in a number of the case studies FAST has been used very successfully to accelerate adoption of Sharepoint as a document collaboration tool. Many users will be in the same position where their own implementation is facing basic challenges like increasing user adoption and better indexing of site documents.

In this area ACIS also offers tools for accelerating the ‘on-boarding’ customer information into these popular tools, their Content Migration tools, and this can help implement IM record-keeping best practices too. They can:

- Scan these file folders, using a remote hosted service
- Automatically classify and categorize them in line with various business rules, including grouping documents by department,
- Extract metadata and keyword entities, and export the list for migration to Sharepoint (or other CMS)
- Detect and remove duplicate documents and near duplicates (for example the PDF version of a Word document)
Conclusion – ROI Model

Many organizations will have found that the realities of working life mean people opt for the quickest and easiest options for document collaboration and storage, resulting in shared network drives proliferated with Terabytes of files. This drives consumption of IT resource like storage and thus of course costs.

All these files are held because there is no record-keeping classification applied to them, so they are all ‘very important’. By leveraging tools like FAST these files can all be automatically audited and migrated to more relevant storage options and considerable costs averted simply through this alone.

With other benefits like community search engines there are clearly entire portfolios of cost-saving transformation possible through Cloud 2.0 advances.

Partner Program – Microsoft Cloud Business Solutions Group

Next step actions include contacting our Solutions Group team, both for end-users and industry partners.

The Microsoft Cloud BSG is an solutions partner group specializing in these Microsoft technologies via Cloud models, including ‘Cloud Records Management’ -

Cloud Records Management

President Obama has recently issued a Memorandum entitled “Managing Government Records” to begin an Executive Branch-wide effort to reform records management policies and practice, and defined that this is the backbone of Open Government.
The Canadian Government also announced similar plans, a strategy to launch a ‘GC Docs’ portal. Our upcoming webinar will include a demo of how Microsoft FAST can be used to build ‘GC Docs from the Cloud’ – Sign up @ GovCloud2.com.