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Transforming Product Development

WHITE PAPER

# Building Successful Consumer Internet Applications

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Those who do not study history are doomed to repeat it. History acts as a guide for our future. In spite of knowing history though, how often have we come across people repeating the same mistakes? This is especially true when it comes to developing software. Effectively, history repeats itself time and again, and avoiding it is ongoing research ...

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## Web 2.0 – Consumer Internet Applications

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Any organization is better off developing great software as opposed to mediocre software. Let us try and define what great software is. It is primarily software that fulfills customer expectations and is better than the competition. In other words, it is software that is cheap enough, fast enough, feature-rich enough, and available soon-enough – that is "Good enough".

Additionally, there has been a perceptible change sweeping the VC landscape for technology companies for sometime now. Earlier, software start-ups used to be in the incubation mode for months on end. Business plans and financial projections were made for 5 year periods. Initial seed funding was typically in the $5 mn range. But in today's fast-changing world, software companies certainly cannot be in stealth mode for long, especially the ones in the Consumer Internet space.

As hardware has become cheaper, web infrastructure and cloud computing rule the roost, software libraries are ubiquitous and new technology/languages have crashed development timeframes, start-ups now comfortably take their software to market with seed investments of $100 - $500K in just a period of 4-6 months. Also, with the advent of web 2.0 and social media, users have also become less technophobic and are willing to try software in beta mode much more and much earlier than ever before.

This effectively means that there is a lot of change that is happening in the software development field and with change comes challenge. The aim of this paper is to address how software can be consistently made better and faster, by leveraging technology innovations in combination with process innovation.

## Technology and Consumer Internet

Plethora of programming languages and infrastructure libraries combined with agile methods has allowed organizations to remove the shackles of old software development practices. Just a handful of software engineers can now build systems of great complexity, and software engineering is successfully evolving.

This is made possible with the advent of modern programming languages like Java, PHP, Python and Ruby; rich libraries and infrastructure services like those from Amazon. Digg, Del.icio.us, Youtube, MySpace and other poster children of the new web era got started in garages with a fairly small team and had a beta version of their software out in a matter of 6 months or even less.

Agile as a development methodology has gained a lot of traction and has helped software organizations really make things faster and better, supported by modern technology and infrastructure. However, Agile is not about using Scrum, Extreme Programming or RUP. It's about using the best agile practices to respond to today's frequently changing business needs. One basic tenet of Agile is simplicity; build the simplest possible system that satisfies today's requirements and when tomorrow comes, be ready to adapt.

One of the drivers for the changes taking place in software development is certainly the evolution of the consumer internet or the Web 2.0 world. The successes of the Web 2.0 products and services listed above have spurred hundreds of competitors who aim to be the next big Web 2.0 success story.



While the success of some of the Web 2.0 start-ups can be attributed to early-mover advantage in identifying and filling an under-served niche, there are some underlying similarities behind the successful companies.

With the limited resources available at their disposal, the key focus areas were: simplicity and usability – the intuitiveness – of the product, application or site, collaboration and deep involvement with the user community who were more than merely 'users' – they are also contributors, participants and co-creators – and constantly incorporating their feedback to make the user experience better, developing viral product features that are valuable to users like blogs and integration with Web 2.0 tools, and ultra fast development cycles.

## Consumer Internet and the Enterprise Space

As consumer internet products and services become ubiquitous and are adopted widely by a mainstream audience, the trickle effect of Web 2.0 into enterprises is becoming stronger by the day.

Many CIOs had earlier been skeptical about the ROI on using Web 2.0 tools across the enterprise. However, with grass-roots adoption by on-the-ground staff to improve productivity, collaboration and knowledge-sharing, and results that are building over time, CIOs are willing to invest more on web 2.0 technologies. A recent report by Forrester predicts that enterprise spending on social networking tools, mashups, and RSS is going to increase dramatically to $4.6 billion in 2013 from its current level of $1 billion.

Some of the largest Independent Software Vendors (ISVs) in the enterprise space have been integrating web 2.0 technologies into their products for some time now. Microsoft's SharePoint collaboration features, IBM's Lotus connections, mashup products and upcoming Quickr and SAP's Business Suite that includes social networking and widgets are some of the famous examples.

On the other hand, stand-alone web 2.0 software companies that caters to enterprise users like Communispace, Newsgator technologies, Six Apart and Jive Software have their own USPs and are holding their own in this emerging enterprise marketplace.

## What does Consumer Internet hold for the Enterprise market?

There is many a consumer internet innovation that will move into the enterprise. This really hinges on the successful adoption of consumer internet into the enterprise. For instance, Google and Facebook have dominated this space for the last couple of years. Some of the innovations that can move into the enterprise space are:

**RSS adoption** – RSS can move the enterprise towards client event notifications and is a good choice for supply chain management. RSS provides wide choices for the consumption of event notifications.

**Social Networking** – These are tools that would allow you to communicate and are a good choice for the sales and marketing organization. These can include bulleting boards, threaded discussions and the trusted emails.

**Semantic Enterprise** – Enterprise applications provide a heavy dose of semantic information, both for the applications, as well as the data that it generates as meta-data. Content management systems usually provide a lot of meta-data to describe the content. This meta-data gives it the starting point for Web 2.0 applications that implement semantic web concepts. Primarily, for the next level of innovation where you can look at the web as a platform, there has to be a level of content and services interoperability that doesn't really exist today.



**Meta-data everywhere** – Enterprise systems are heavily meta-data driven. Access to meta-data generators and meta-data specification itself (the fact that most are moving towards SOA frameworks) would provide as the starting point for Web 2.0 applications.

**Business Model** – Dynamic interfaces facilitating participation through such methods as user-created content, networking and collaboration. Applications used include podcasting, tagging, blogs, social networking, mashups, and wikis.

In the consumer internet space, convenience certainly beats quality and it becomes extremely important to make all your interactions lightweight and easy.

### How do we build software in the consumer internet space?

Organizations are transitioning their websites from isolated islands of information to interactive sources of content and functionality. Consumer Internet needs to allow for a web-computing platform serving Rich Internet Applications (RIA) that are as good as client-server applications. With the increased usage of Consumer Internet, it becomes imperative for product companies to incorporate Web 2.0 features in their products, else lose out to the competition. Let us now look at some of the tools and technologies relevant to developing consumer internet products or applications.

- Agile development methodology to reduce time-to-market and provide shorter release cycles
- Portability experts who can provide support across various browser platforms
- Wikis for self-publishing and editing of content by end users
- Simple Object Access Protocol (SOAP) based SOA for providing integrated content
- RSS and blogs for structured readability
- Ajax based APIs to provide interactive, professional looking GUIs with a dedicated team of usability experts
- RDF and semantic web tools and techniques to give more structure to available information
- Development frameworks like Ruby on Rails that can create Alpha and Beta releases in a matter of weeks

Most of the applications that are successful in the consumer internet space are typically light weight apps that are meant for fun. The technology and tools listed above would essentially allow you to get your software ready for customer feedback in a matter of weeks as opposed to typical months and years on-end development for traditional products.

### Consumer Internet – Success

Is there a way by which success of consumer internet software can be ensured? This really has been a popular research topic for the last decade or so for traditional software. The same is applicable to the consumer internet space as well. How do we at the end of it all define the success of any software?

It is finally the customers who define the success of the software, for their adoption means financial success for the organization. How do you make this happen? It is relatively a complex problem. Aspire Systems has a solution for this, which is based on the experience of having worked with Independent Software Vendors for over a decade helping them build products successfully. The culmination of this effort has resulted in Producteering.



**What is Producteering?**

Producteering is a set of principles and practices, driven by the right people and supported by the right platform. Producteering, when applied rigorously, enables products to be built better and faster. This is more so in the case of new software as opposed to existing software as it does not have any baggage or bad code to be taken care of. We have covered some of the tenets that are applicable for consumer internet software here.

**Principles**

Software that delivers real and unique benefits to users are the ones that succeed and garner a high market share. However, market orientation is critical to a product's success and this involves having a thorough understanding of end-users' needs and wants, the competitive situation and the nature of the market.
In spite of knowing this, most companies still delay asking users what they think of their products until the product is almost launched. This brings us to the principles of Producteering, which will enable organizations to bring their customers early into the feedback loop, and allow for development of products quickly with consistent and predictable quality

Aspire's Producteering Principles are:

- Deliver working software frequently
- Recognize the variables: Time, Budget and Scope
- Select processes specific to the stage of product
- Focus on both the engineering process as well as the project management process

**Practices**

The implementation of product engineering best practices is a continuous journey; seldom a destination. Various priorities of a software company like time-to-market, cost, quality, innovativeness and the flexibility to react to competition and markets, drive software strategy and best development practices adopted. While it may be tempting to adopt some best practices based on organizational priorities, there are a set of best practices that are common across all software development efforts.

As a result of our extensive experience building quality software products, Aspire promotes the best practices listed below. Using our in-house knowledge repositories and technical expertise, Aspire's product engineering Practices will help you build your products better and faster.

- Best Engineering Practices
- Architectural Standards
- Usability Engineering
- Performance Engineering
- Documentation Standards



## Conclusion

The most important step for a consumer internet start-up is to validate whether there really exists an opportunity for their product – are there users out there who want your software? Next, you would need to actually come up with your solution that is usable, useful and feasible. This means fleshing out your product idea and getting it validated by your customers and your engineering team.

Often, this phase isn't easy – and organizations tend to spend a fixed amount of time for this process of validating the opportunity or problem and finding the solution for it. Even start-ups sometimes fall into this trap and begin the development phase without completely validating the business idea of the software – and this many a times results in developing software that is unsuccessful in the market.

One way to reduce the chances of failure is to build prototypes that very closely resemble the envisioned software in terms of the workflow, user interaction, design and functionality. Before making significant investments in development, you will have a chance to discover the good things about your software, the stuff that can be improved and whether your users can actually use your software easily.

The other advantages of doing so-called 'high-fidelity' prototypes are that it forces you to think through your software to a great degree, encourages collaboration between the software management team, the user design team and the engineering team, gives you more accurate time and cost estimates and ultimately results in better products – that are clearly defined, validated by real users and have eliminated any potential show-stoppers early in the software lifecycle.

When it comes to consumer internet, be it ideation, concept development, prototyping, product development, customer feedback, and quality assurance, some of the tools and Producteering, explained in this paper will certainly ensure that the products built are of great quality and have a higher probability of succeeding in the market.

With the array of modern technologies, infrastructure libraries, agility and crack software engineering teams, the consumer internet space can only look forward to better days ahead. In addition, with the decreased resistance from CIOs of enterprises towards adopting consumer internet apps, it is only going to get better for organizations as well as end-users.



## ABOUT ASPIRE SYSTEMS

Aspire Systems is an Outsourced Product Development firm committed to helping our customers build software products better and faster. We work with some of the world's most innovative Independent Software Vendors and software-enabled businesses, ranging from start-ups to established industry leaders, transforming the way software is built.

Aspire provides complete product lifecycle services, ranging from new product development and product advancement to product migration, re-engineering, sustenance and support. Our product development teams are spread between our Global Innovation Center in Chennai, India and offices in the United States.

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