SURVIVING THE ECONOMIC RECESSION: HOW CAN IT HELP?

Model-Driven Environment Software Architecture

April 2009

Economic recession is making everybody ask a same question: "How to save a business?". As an IT company, Diginaut thinks it has some tips that could help. Here you will find two questions, five plans and few warnings that might help when deciding the IT issues.

Question #1: How Can Agility and Fast Response of Small Companies help to be Competitive in the Recession?

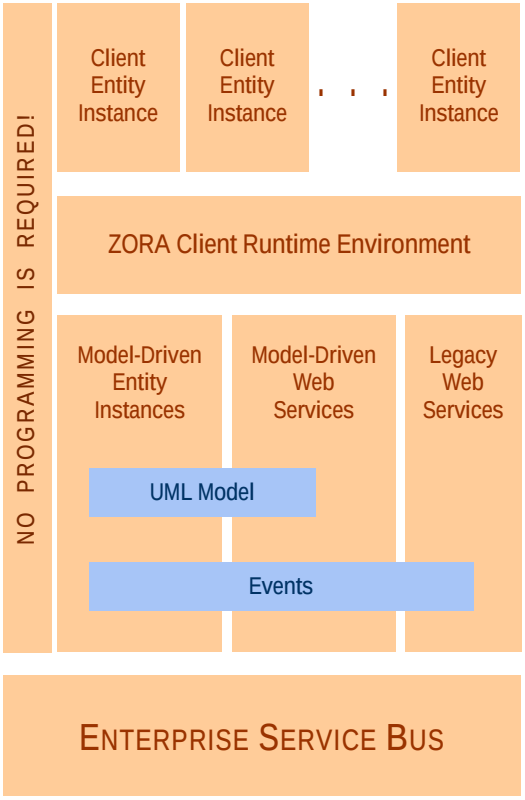
Is it possible to combine agility and responsiveness of small businesses and plain mass of large companies? Large companies may cut costs, reorganize and live through the recession somehow, but smaller enterprises might not have reserves nor can they cut costs much. They must relay on a new ideas and flexibility.

The economic recession is a tide that forces the changes. And it is not just software industry that needs changes.

But, the change itself is not such a bad thing.

An increasing number of Diginaut projects that involve building customization modules for large software vendor's solutions (ERP, CRM, FI) tells us that technology is saturated with large, oversecured investments without any fresh ideas.

Question #2: What Technologies We Are Talking About?



Intelligent and Adaptive Software

Intelligence can be an integrated part of how we manufacture and sell, how we transport, and how we connect to suppliers, partners, and customers.

And smarter business starts with smarter IT. Instead of employing army of programmers, Diginaut employs large number of intelligent software components. More precisely: cheap model-driven components.

Model-driven environments (MDE)[1] like ZORA are based on a business model usually specified in a standardized UML[2] model. Software components are built and adapted to the current user environment in a runtime. This way many tasks are done automatically: like fetching data, understanding the structure and rendering data to the users.

This technology collects all the knowledge about business process, then interprets it and prepares user interface. It is doing it every time user makes a request, opens a window or starts a process.

This adaptive approach is what distinguishes MDE software architecture.

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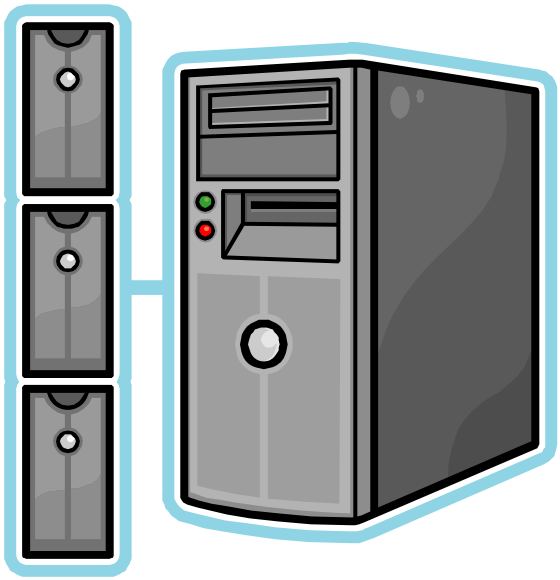
[1] Model-driven environment is a dynamic runtime environment that interprets business model and ensures application infrastructure follows instructions

[2] The Unified Modeling Language™ - UML - is the way the world models not only application structure, behavior, and architecture, but also business process and data structure. - http://www.uml.org/



Virtualization

Virtualization is a new savior! It helps to defend and harden our systems so we may sleep better.

Virtualization means that you may pack your operating system in a single file and run it on any hardware accessible. More than one copy of your server ensures its continuous operation.

Backups prepared for an immediate startup are an excellent insurance.

Virtualization is also useful as a staging environment for testing various business configurations.

Virtualization improves safety and availability, reduces energy footprint and it reduces costs significantly.

Cloud computing

Announced as a great solution for start-ups and wide spread companies it is also known as a solution for reducing enterprise IT operational costs.

In simple terms, cloud is an IT infrastructure outside the company, usually on Internet. It is maintained by an IT company who rents it to the clients for their business use.

But, giving a precious company's data to a company that you might never see is a hard choice. Especially while there are still debates on how to ensure high security standards in the cloud.

Keeping distance from extremes of a complete reliance on the cloud, or none at all, is a golden middle. Whether you start by slowly integrating your business with a cloud, or a vice versa, your business may benefit from the mix.

Open Source

While large software vendors struggle to attract clients with cloud computing and pay per use licensing, some customers successfully use open source solutions in every day business: from standard office applications to reporting and business intelligence.

What is changing in the favor of open source? XML documents for one, and transition to web services and SOA architecture for two. All this makes interoperability between software packages more transparent and easy to implement.

Businesses can choose optimal and least costly component for every process in the company, while ensuring that everything will work together just fine.

Plan A: Be Prepared For the Changes

Today's business climate demands fast responses and readiness for the changes. Only 61% of the world's CEOs feel confident in their company's ability to adapt. Improved service delivery, with less risk, at reduced costs is necessity.

With a dynamic infrastructure, IT can drive new levels of efficiency in business while laying the groundwork for future growth.

With MDE you can be prepared. Here are some tips:

- Use open and easily customizable new application environments that inherit and extend business information from the business model and from current business environment. Software is evolving and becoming more intelligent. Why not use it?
- Customize while working! There is, probably, no one who can predict exactly how recession will impact business processes. Changes might be needed on everyday basis.

  We have some experience in dynamic environments. In fact, they are our specialty.

  Whether it is SCADA system that controls energy distribution or production line, water processing, customer management system (CMS), industry process control or advertising departments - changes are everywhere.

  Changes are not something we should fear. With proper technology it could be used to your advantage.
- Special care in MDE development has been given to inheritance and possibility to extend business model without significant impact on the core business functions.

  Let's say that company introduces new product or production lines that need monitoring, new marketing strategies and tracking functions. With MDE it is rather simple and straightforward. No new application is needed!

Plan B: Keep it simple

By looking at portfolios of some large vendors' systems which are described in dozens of pages and hundreds of unknown acronyms, one may wonder how difficult is to develop, install and maintain those systems?

With hundreds of developers and millions in budgets it sure is achievable. But can it be more efficient and less expensive? Yes it can! And we are doing it everyday.

Cleverer and simpler solutions are usually better. It is just a question of inspiration, idea or science that finds a more intelligent ways to solve problems.

Diginaut is a lot smaller than most of the other software companies, but we successfully built and deployed complex solutions for utilities, media, tourism, and transportation.

We don't have large marketing budgets, but it we have results. We have software that interacts and grows with its users. Users don't need tons of documents just to use an application. Cars are complex, but everybody can drive them without manuals. It's the same with software.

Simpler architecture, more intelligent solution makes happier and more productive users.

Plan C: Cutting the Costs

Planning IT budgets is always ungrateful job. Besides deadlines, predicting costs of software development and maintenance is a huge task. Cutting costs on one side may raise them on the other.

For this plan, we'll be cautious and suggest only what we've already tested.

Cutting Costs during Development:

1) A proper model of your business is a most important investment. Be cautious and try to foresee business growth and changes. No need to go into details, just the top level model. If it is done properly, later it will be easier to inherit basic structure and add more details.
2) Use an agile approach. Meaning, more iterations, tight work with the users and frequent deployment of new modules.
3) Don't postpone security issues. Although it seems not important at the beginning, later it is much harder to implement.
4) Use application interfaces whenever you can. With interfaces you expose or share data and processes between other applications. By doing this you ensure that any mistakes or user needs might be addressed later without changes to the core system.

Cutting costs during Operations:

Most of the operational costs could've been cut if a prior planning and development was done right. But some new tricks can improve your business and cut costs without significant risks.

1) Use virtualization to tighten your systems and prepare backups
2) If you are using dynamic IT architecture, talk with users about changes that could help to be more efficient.

   Use your investment in a dynamic IT and change processes in order to be more competitive.
3) Make use of collaboration applications, instant messaging, social networks and similar sites to promote your services or products. Internet is constantly expanding, and services are often free. So why not use them.

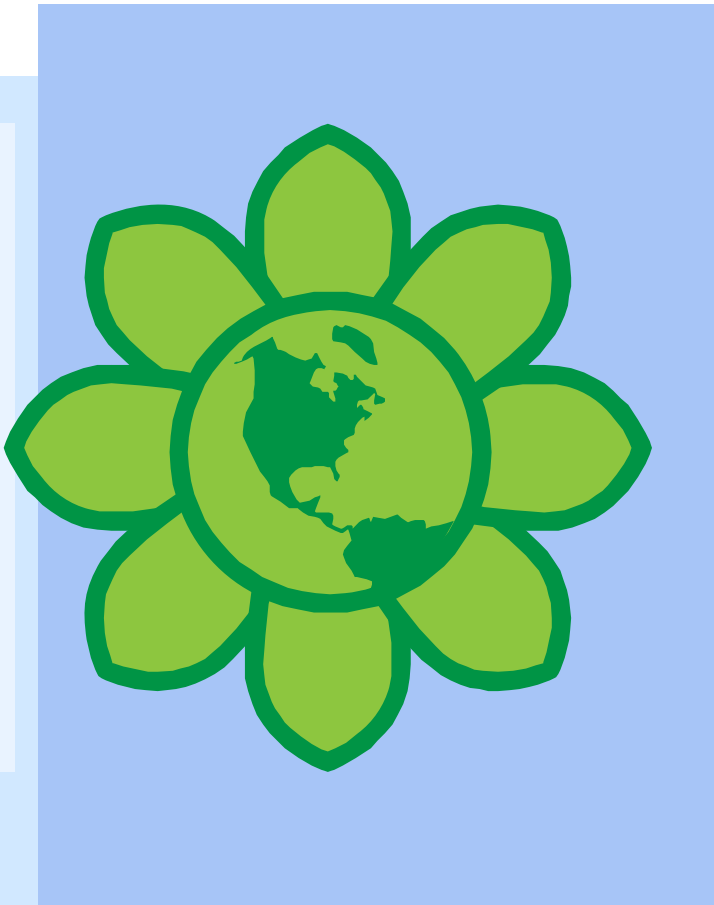
Plan D: Be more green and efficient

It's not just about showing that you care. Customers will appreciate and support your business also. And it might cut costs too.

70 percent of CIO's are reporting that power and cooling issues are now their single largest problem in the data center.

Here are some tips:

1) Plan for efficient cooling
2) Use virtualization. Your old and less utilized servers might be virtualized and ran with less hardware resources. With better cooling you can improve utilization of servers and run more services on the same hardware.
3) Tune for efficiency by monitoring and managing power consumption



Plan E: Use Everything You Can Grab On

There are already a ton of programs that search through your emails, documents and files. With advanced searches you may find anything you need. But when you have to analyze, count, measure and estimate, you need an organized structure.

If any of your answers to the following questions isn't affirmative, then this plan might help you:

- Do you have full control over your sales, invoices, proposals, contracts and other organized information data?
- Can you easily access information even if you are not certain where it is?
- Can you easily export data you are viewing to, lets say, spreadsheet for further analysis?
- Are you satisfied with the responses of IT crew on requests for changes of your business application?
- Is every user satisfied with the application he is using?
- If you are planning to radically change you business, are you concerned with the impact on the information system?

With MDE it is easy to browse up or down in the hierarchy of your business data model. Use your every day business application as a data mining tool!

Every ZORA application shows everything about an object by default. Customer form, for example, is filled with all documents, records and information that are linked to that customer. From that point you can browse inside business documents and from them into orders and product specifications.

With MDE you don't need programming, outsourcing, nor installing – it is all part of MDE intelligent component model.

Cost reduction with these tools is significant. Without expensive programming, business is more agile and more responsive to changes.

Conclusion

Changes are inevitable. Whether you decide to gradually change or make a complete overhauling of your business and IT, its impact will echo through years to come.

Our philosophy is derived from the nature, where surviving species are not the strongest, but those who adapt better. And every day we are reconsidering our strategy whether we can adapt using current technology. Fortunately for us, recession might be the end of dinosaur's era.

Smaller, more agile solutions have a chance to thrive and make a diverse ecosystem with every possible color, size or shape.

About Diginaut

Diginaut is a software development and consulting company.

Diginaut specialized in a model-driven development with its own model-driven runtime environment (MDE) named ZORA.

Diginaut's MDE was successfully tested in a various industries like energy distribution, utilities, advertising systems, newspaper management, airline reservation systems.

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