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Workshop on standards

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PAGE 7

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PAGE 8

Localisation Central

We introduce a new section by and for localisation experts

PAGES 9-24

In today's highly competitive marketplace, staying one step ahead of the competition is paramount to success. As such, it is imperative to constantly review your localisation process with a view to improvement, according to DAMIAN SCATTERGOOD.

The future of localisation

AS THE localisation industry evolves and matures, so too do its tools and processes. Through the years we have seen many changes in the tools we use. In the early 80s most localisation was performed at source level. Text was translated directly within source code, which was then compiled to deliver a language product.

Over the years the Binary Translation Method became the best practice for a number of companies. The concept of externalising all resources made the translators life a lot easier. In the search for better ways of shipping our products with greater speed, more cheaply and more easily than our competitors, we ask: where to next on the localisation frontier?

Today there is considerable competitive advantage to be gained by analysing your entire localisation process, your supply chain. To gain a winning edge, you need to evaluate every part of your process and how and where gains can be made.

Advantage can come from simply modifying parts of the current chain or by completely redesigning the supply chain. The key requirement is that you do it one step ahead of your competitors.

The localisation industry supply chain

Martin Christopher, one of the world's leading supply chain gurus, says: "Increasingly, supply chains, and not firms or their products, compete." (*Strategic Supply Chain Management*, John Gattorna, Gower 1998)

This is very true when you consider that quite a number of best practices are in use in localisation companies today in terms of engineering and translation. But how the best companies stay ahead is through excellent process and supply chain management.

If asked to draw a supply chain for the localisation industry most would produce a model very much like *figure 1* (above right).

However, this model is more complex than it first appears. There may be multiple localisation and translation teams. How the product is localised may also alter the model. Your product may be the ideal international English product with a single binary or a collection of files requiring more complex translation processes.

Those in the industry will certainly agree that exactly how you configure this network determines your ability to deliver, and hence how competitive you are. If incorrectly assembled, it can lead to large deltas, for example, between your product shipment and language shipments, and indeed it also determines the speed at which subsequent language delivery is made.

In analysing supply chains with respect to maximising efficiencies and gaining competitive edge, Christopher says that you should first examine your material decoupling points.

Material decoupling points are the stages in your supply chain where your generic product material is modified or customised to form

Figure 1. The standard localisation supply chain model

the next stage product. It is at these points that the most human effort is spent. This is where manual intervention is required to modify code for internationalisation, add translation or fix bugs.

Where these decoupling points occur in your supply chain has serious implications for the effectiveness of the entire process. There can be many decoupling points, but the two I view as having the key impact on the localisation process are as outlined in figure 2 (below).

The I18N decoupling point

This is the point where your base product separates into the multi-language streams. Ideally, you should have a software development system that produces a single binary, thus reducing the impact of managing multiple sources. This is also the key stage when the "product" is handed over to the localisation team. This is worth reviewing in light of the discussion about automated engineering later.

The L10N decoupling point

It is at this point that translation and software come together to form a consumer delivered product. I say "consumer delivered" because you need to view the process from the end customer's point of view. When do I get the translation? Consider, for example, the AltaVista Babelfish translation tool. This delivers translation on the fly as requested by the user. So the L10N decoupling point is right at the consumer's desk (*figure 2*).

Now that we have an understanding of supply chains and decoupling points — how does this affect the future of localisation?

When looking for competitive advantage and future strategies, we can now ask a number of questions about how we deliver products to our customers.

- Where does translation take place?
- Where are the breaks in decoupling?
- Where are we spending our most effort?
- Where are we prone to introducing errors?

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Figure 2. Decoupling points

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- Can we move them further downstream?
- If so can we automate more of our process upstream?

Future demands on the SCM

Your supply chain will also have many new demands on it in the future. How you plan for these demands is of key strategic importance to you organisation.

These include demands such as:

- faster time to market;
- simultaneous shipment;
- more languages;
- cheaper translation and localisation costs; and
- the absolute necessity for thinking globally while acting locally, in which the question of how to add more local content becomes crucial.

Applying these considerations in conjunction with your new supply chain questions can lead to some interesting possibilities.

Future localisation options

To be successful in the future you need to develop a strategic plan to optimise or even re-engineer your localisation supply chain to move ahead of your competition. I have put some thought into how you might begin that process by developing a number of possible future scenarios for you to consider.

Automated engineering

The top line view of automated engineering (*see panel right*) is that by bringing software development and localisation processes closer together, great leaps in productivity and quality can be achieved. By performing automated localisation engineering and testing during the build stage — before delivery to the localisation QA team — major cost and quality benefits are achieved. Creating a fully automated supply chain generates cost reductions and thus increases profits as a result.

Web time

Web time is more and more important today. The internet has the ability to deliver a number of possible benefits to the localisation process.

Online translation

Rather than sending Transkits to vendors, imagine a scenario where your translation tools worked across the web. It is entirely possible that tools could allow vendors to work directly on your product binary files on your server. So just what is the advantage?

Firstly, there's time: your translation files on your server are always current.

Secondly, you remove the problem of version control issues with multiple files being sent back and forth to vendors.

Automating your future

A vision

AUTOMATED engineering is a term I've coined from my experience in the localisation engineering business. Automated engineering is the concept of using automation, or software robots, to aid the engineering of localised products. It combines a number of tools into an automated process, thus performing several stages of localisation at once. Automated engineering will evolve, and is evolving, in the software development and localisation processes. As the localisation engineering process matures, both software development and localisation processes are coming closer together. Machine Translation was the first visionary step in this direction. While this has not been a success, the concept is still valid. Future development may improve the technology to make it really useful. Consider the Apple Newton. Those old enough to remember it will also remember its demise. It was the first PDA of sorts but failed because of its quirky writing system. Some 15 years later Palm got it right — and the rest is history. Does the same fate await MT?

Multilanguage simultaneous translation

True automated engineering could be achieved as follows: if we moved the I18N decoupling point back to the development team stage, the following scenario could evolve.

Imagine that the base product development team build process also included tools that:

1. mock translated the product (build multiple language versions for base team testing),
2. automatically leveraged translations from previous builds (multiple languages),
3. automatically built translation kits of new strings,
4. used an automated system to send those Transkits to vendors,
5. automated test procedures to perform first level international testing on the product,
6. and finally delivered the test results and beta language builds to the localisation project manager.

The project manager would then only have to manage acceptance of the new translations back from the vendor. The localisation team would need only to do final verification testing on the software build. Perhaps we could ship a product with only one or two builds using this process.

To some, this may seem a pipe dream, but much of the technology to develop such a system is available today. I know of one software house that is actively using such a system.

Tools such as Alchemy Catalyst can be script-automated to perform mock translation and leveraging. In my previous career as localisation technology manager, I had already developed a system to perform steps 1 to 3 and had developed a separate system to perform step 4.

Automation tools such as Win Runner and QA-Partner can aid the development of the pre-testing software. Most vendors have some form of in-house testing tool that they use to verify translations. The development of this system would mean that once the development team started the product build, the system would deliver at the other end — English build, translation kits, all language builds. The entire process could easily be tied together to form an automated supply chain. Imagine the cost benefits from having a single source development system managing the entire localisation process.

Automatic bug fixing

I also envision the stage of automatic bug fixing. The scenario is simple. Imagine we are localising a product into French. We find a bug and our software engineer fixes it. It could be a clipped string or a translation issue. Now consider the implication across other languages we are working on. What is the likelihood that the error is also to be found in another language — 10%, 20% 50%?

My experience is that clipped strings, for example, occur approximately 40-50% of the time in other languages. So from a cost point of view, you pay two to three engineers to fix the same bug. It is possible through simple software to record the error, how it was generated and how it was fixed. Now all you need do is develop a new tool that reads those software instructions and repeats the fix across all languages, thus eliminating the bug.

Automated bug knowledge management

How often have you developed an inline or next version of a product only to find a bug returning? "Didn't we fix that last time?" With a tool like the one I describe here you could easily fix that bug automatically. The database you build becomes an automated engineering knowledge management system for that product. It becomes a QA tool, automatically checking all the previous bugs it knows can happen. My research shows that such a system would be relatively cheap.

Finally, quality can be controlled. In this way a system can be developed to protect your code and files from corruption. You always know the code on your server is the most up-to-date, intact code — and so is the translation.

Another benefit is that the vendors would always be using the correct tools (that is, yours) for the job, and they would have the latest version. So the chances of stray file corruption would be minimal.

Finally, your translation memory would be stored at your local site, which would minimise the overhead costs of keeping it up to date with input from various sources.

Online testing

If you take this concept further, it is feasible to have your product tested online. Imagine a sand-boxed environment online that allows QA testers to log in to your website and take the product through its paces. This may sound impossible, but this technology exists today with products such as pcAnywhere. This process obviously requires a lot more thought, since allowing many engineers to test at the same time will cause bandwidth and security problems.

The concept, however, is still valid. Imagine the benefits of having an open day? You could release an open beta to the internet world and have your product tested live. How many bugs could be found by thousands of online testers?

Contractors: virtual / remote teams

Logistically, the concepts above could lead to the creation of virtual or remote teams. Such teams could be created and disbanded as required for each project. It would not matter where in the world any team member was working. A new outsourcing model could evolve.

Real-time translation

The internet also challenges us in terms of real-time translation. Many people use products like that of SYSTRAN to deliver web page translations on the fly, but this system works on a machine translation basis. An alternate system could store your product's dialogues and text on its site and have it ready to be downloaded on the fly. So you would only need to ship an English product.

If users want French translations, they simply select French from a menu. The software could then look up the translation on your web server and have that text delivered live.

Why do this, you might ask? Firstly, it means you can deliver your product more quickly to all markets.

Your customers would know they wouldn't have to wait for the language translation to be produced. They could buy the English product as soon as it was ready and the translations would appear later. So the customer would be up and running as quickly as possible.

Secondly, this method would also allow you to judge the demand for your product. Let's say you have considered translating a product

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6th Annual LRC Localisation Best Thesis Award

sponsored by Symantec Ireland Ltd

The Localisation Research Centre (LRC) at the University of Limerick announces the sixth annual award for the best thesis on a localisation-related topic, again generously sponsored by Symantec Ireland Ltd. Students who have completed a thesis on a relevant theme within the past two years are invited to submit their work to the LRC for consideration. Theses may be submitted prior to their degree award and will be judged by a panel of academic and industry experts.

James Grealis, Director of EMEA Localisation with Symantec Ireland, said: "Symantec is proud to announce its sponsorship of the LRC Best Thesis Award for the sixth year running. The award offers a grand prize of €1,200 plus two products from the Symantec retail product line. As a world leader in corporate security products and services, Research and Development is core to our business. Innovation is a key value in our world today. Symantec is proud to be the supporter of the LRC Award."

Reinhard Schäler, director of the LRC at the University of Limerick said: "By organising this award for the sixth time running, the LRC aims to encourage researchers to address the issues faced by the localisation industry. Ireland is a world leader in software localisation. There are approximately 12,000 people employed by the localisation industry. Localisation is a business worth more than five billion pounds a year. To develop this key industry, especially in the context of the emerging eContent industry, Ireland must move up the value chain and develop its research and development potential."

SCOPE

The scope of the thesis need not be confined to a technical area, and applications are also invited from students who are carrying out research into commercial and management aspects of the localisation industry.

Possible areas of research might include:

- **Global web design and content management**
- **Machine Translation and Computer-aided translation**
- **Terminology databases**
- **Software quality assurance and localisation**
- **Software engineering for the international market**
- **Internationalisation**
- **Project management and localisation**

PRIZE

The winner will receive €1,200 and will be able to choose any two products from Symantec's retail range of software. In addition, the winner will be invited to present the thesis at the LRC Localisation Conference in November 2002.

SUBMISSION

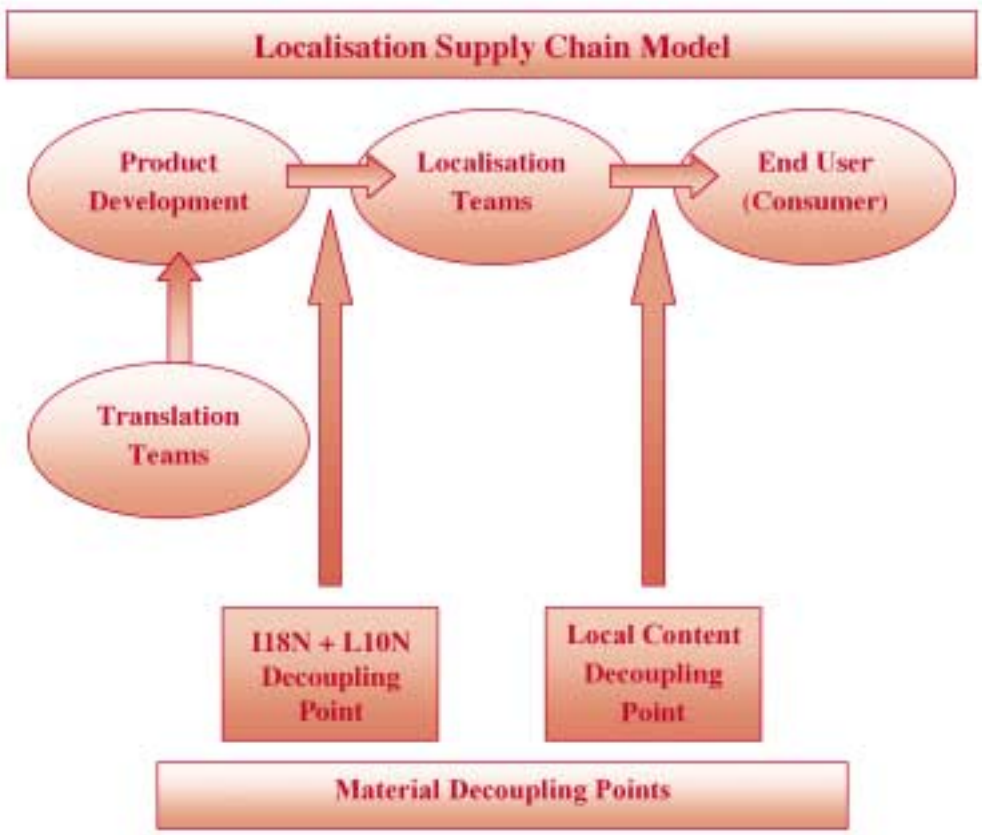
Should you wish to enter your thesis, please forward a copy (hard copy and electronic copy) together with your full contact details, a short CV (max. one page) and relevant information on the thesis to:

Localisation Research Centre (LRC)
BEST THESIS AWARD 2002
Department of Computer Science and Information Systems (CSIS)
University of Limerick, Limerick, Ireland
(Tel. +353-61-202881, email LRC@ul.ie)

By submitting their work, authors acknowledge the right of the LRC to publish their work if it wins the LRC Best Thesis Award or receives a special mention.

Closing date for submission is 31 August 2002

Figure 3. A possible future model for localisation



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into Hebrew but don't know the market size.

With this system you could see how many people request the language translations. You would automatically know the language demand.

If the language is not financially feasible, you would simply inform the potential user that the language wasn't available instead of making commitments that you might not be able to meet. The key factor to success is knowing the market demand before translation begins.

Multilingual operating systems

Multilingual OSes are the future. Mac OS X now has the leading edge in this area, shipping in some 10 languages, which are built into the core operating system. The user simply changes the language settings, and the entire user interface changes instantly to the target language. Software should do the same thing. There are possibilities for software to take advantage this OS concept.

We could obtain our language strings from the OS or shared language files (perhaps via online downloads). We might then only need to ship an international English product!

One product, many languages

The multilingual OS and the concepts mentioned earlier will lead to companies probably only shipping a single CD box for all languages. Thus a huge saving can be achieved in manufacturers cost of goods (COGS). You will find more companies delivering all language manuals on CD rather than printed form. Printed manuals will only be available on request for an additional premium cost. The concept of online translation will turn manuals into e-manuals.

Vendor model

The translation vendor model will also change in the future. As the industry evolves and translation vendors' translation memory databases grow, it is feasible that vendors could simply become data warehouses.

With automated engineering principles coming into play, the need for full service translation and localisation vendors may diminish. The cost savings and profits will come from effective data warehousing. These massive databases of translations will become automated factories — delivering translations to the many automated supply chains for the localisation companies upstream.

Thus, a new service model and cost structure will come into effect. I firmly believe there is a great market opportunity in this area. Data warehouse services could also be used to deliver on-the-fly translations via the web to such data centres.

Localisation service providers

It is feasible today, using the various steps I have outlined, to develop a replacement for the traditional application service provider. It would be a localisation 4PL — a company that completely handled the implementation of an automated localisation supply chain to a product company.

It would also serve as a translation data warehouse or data centre. Just as the application service provider (ASP) data centre model exists today, the LSP could be its next extension.

Localisation focus in development teams

With the advent of automated engineering, you will see a focus on localisation developing within the development teams themselves. More resources will be put in place on the development side, reducing the localisation department's efforts in those areas. This does not spell doom for localisation but rather will expand their skill sets as the demand for more "local" content evolves.

Localisation as we know it today will become "locale engineering". In effect, the I18N and L10N decoupling points will move upstream closer to the development teams. A new decoupling point will introduce itself, the "local content decoupling point" as in *Figure 3*(top of previous page). ■

Conclusion: Localisation future in a nutshell?

The future holds many challenges. Taking advantage of scale through data warehousing will bring great cost savings and benefits. Automated engineering will change the face of localisation, altering our current jobs, but delivering new ones. The concept of supply chain management will be a key factor to our success. How we manage our overall localisation process will be paramount to obtaining and keeping a competitive advantage in the marketplace.

Local content focus: think global – act local

Some examples of local content focus can be seen in Symantec's ACT and a number of Internet content filtering software products. ACT shipped with a template called Local Internet Links. This gave the user access to local restaurant information, local maps and local business contacts such as the chamber of commerce. These "local" databases were developed by the localisation and sales teams. It was a connection exercise to local content. The development and maintenance of these databases is a competitive advantage when it comes to selling into local markets.

Content filtering

Content filtering is now a big issue. With pornographic, racist and otherwise unsuitable content appearing everyday, it is a huge task to monitor such content in every language. Most content filtering companies now have teams monitoring local language content and sites for monitoring unsuitable material. These local language databases are then compiled into a single security system for shipment with the base product. This is a classic example of acting locally but thinking globally. There will be more demand on localisation teams to investigate local content alongside development teams (business development of local content).

This form of local content could also be licensed from a localisation service provider (LSP) as I have envisaged them.

Strategic partnerships

Combining all of the new ideas will bring closer links between developers, localisation teams and translation vendors. The concepts of automated engineering, data warehousing, and virtual teams will allow companies to build their own dedicated localisation supply chain. Decoupling points, as we know them today, will move.

Many new strategic partnerships will be formed to take advantage of these systems. What the future holds for the localisation industry is far from certain, the only thing that we know for sure is that change is inevitable, fun and exciting.

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