



## Celona 101

Data, data everywhere, but no chance to stop and think

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## Houston, we have a problem.

This was meant to be the information age: a wondrous time when all the data we might need was ever-present at our fingertips, allowing us to work, play, and manage our lives with effortless efficiency; life was meant to be faster, brighter, better.

Uh, huh. If only it were so...

Any consumer caught in the labyrinths of call centres, help desks, and customer service offices knows this is not so. On the other side of the fence, anyone who has tried to introduce a new customer management system, update shopfloor logistics, or request a change to the information provided in a management report can only, at best, laugh bitterly.

We are being crushed under the weight of data that we have to deal with; furthermore, to mix metaphors, we are being strangled by the complex web of systems that were set up to manage that data. Historically, IT budgets have to set aside fifty to seventy percent for maintenance, aka “keeping the lights on” – leaving less than might be desired for innovation and improvement.

([http://blogs.forrester.com/robert\\_whiteley/10-07-19-it's\\_time\\_io\\_return\\_growth\\_agenda](http://blogs.forrester.com/robert_whiteley/10-07-19-it's_time_io_return_growth_agenda))

Reflecting on this problem immediately provokes two questions: the academically-minded ask, “why did this happen?” the more pragmatic, “how can we put things right?”.

To look at the “why” first — because it informs the “how” — and it becomes clear that there are four major factors: big data, system multiplicity, disconnection, and regulation.

## Big Data

From personal photos on Flickr and Facebook, to commercial and government tax records, from university research projects to corporate engineering systems, both the number of items of data and the size of those data items is growing at a pace that is hard to imagine. As a discussion paper from Google noted: “In 2003, five exabytes of information existed. Now we generate that every two days.” (<http://www.thinkwithgoogle.co.uk/quarterly/innovation/note.html>)

Storage of this data is a problem, but, in fact, not that big a problem. A much larger challenge lies in finding, assembling, and managing those pieces of data to turn it into useful information. Fail to meet that challenge and profitability will suffer while opportunities for understanding and innovation will wither away. Of course, the processes of finding, assembling, and managing data require systems, — and that brings us onto...

## System Multiplicity

Ask someone how many IT systems are used in their business and they will initially guess at two or three, half a dozen at most. A few minutes analysis will usually bring the number to twenty or more. Diving still deeper can reveal a hundred or more. You may think your organisation runs on SAP — but it is almost certain that some hidden but vital part of your laboratory testing relies on a battered linux box running mysql and vim, while your marketing guru's latest blue skies thinking is sequestered away on a Mac Air / cloud set up that neither IT nor accounts nor security know about.

This multiplicity of systems would not in itself be overly problematic if it were not for...

## Disconnection

If the systems are not integrated in the right way, change becomes difficult and maintaining high quality information impossible. Without change, there cannot be improvement; as information quality degrades, the organisation actually gets worse at what it does.

Many employees cope valiantly with endemic disconnection. Financial traders routinely scan seven screens on their desks as they track money movements across different systems. Call centre staff have to chat in a brisk and friendly way to their customers while logging in and out of four, five, or even more different systems trying to ascertain whether Ms J Customer D.Phil on the accounts setup is the

same person as Dr Jane Customer as recorded by sales.

It is as crazy as if an air traffic controller had to watch a different screen for each airline, but is all too often accepted as normal, even inevitable.

## Regulation

All organisations have to meet government and other compliance requirements. This presents challenges on two levels: firstly, keeping track of data in a worsening system; secondly, maintaining an audit trail when you try to improve that system.

# How can we put things right?

## Part one: some heroic failures.

For several decades, some of IT's sharpest minds have been trying to improve this situation, creating new data management systems and with them a forest of technical jargon to describe their thinking. From a business perspective, historic approaches to introducing organisational change fell into three main categories.

### Shutdown

This did work in previous centuries: close the factory for a fortnight. Set up the new processes and system; test them. Start afresh when you are ready. However, you may not want to tell today's customer that she cannot use her phone or internet connection for a week or so.

### Staged handover

Create your new system, run it in parallel with the old one and switch over when you think everything is OK. By this time, of course, the copy of the data is out of date and you spend the next few months trying to update and correct your information manually.

### Slash and burn

Throw away the old system and start again. An untenable option even for consumers nowadays – we all have just too much data stored in address books, documents, spreadsheets and file systems to contemplate re-entering it all.

But these three classic approaches are based on the business environment we inhabited in the 1980's where major change happened relatively rarely. The pace of business has

radically accelerated since then, and our systems for controlling information now need to evolve to handle continuous rather than discontinuous change.

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## A new specification

The limitations of the last generation of change options do suggest what the specification should be for a modern, practical information system.

The basic requirements, hygiene factors if you will, are the four As:

- Always on
- Adaptable
- Able to maintain and improve data quality
- Auditable.

Beyond that, it should be able to provide the real benefits that the enterprise is looking for:

- Insight — taking trusted data and creating from it valuable business information.
- Agility — allowing the organisation to make use of its insight speedily and effectively
- Improvement — especially to profitability and to customer experience
- Innovation — going beyond incremental improvements to radical changes, creating new business opportunities.

## How can we put things right?

### Part two: using a model-driven architecture to create a modern information control system.

Celona Evolve is a modern software platform that achieves all of above requirements. Naturally, the way it does so is highly complex at an implementation level, but remarkably simple in concept. It is built on the classic computer science principles of abstraction (hiding complexity so that people can focus on the important issues of the moment) and modularisation (creating self-contained packages of work that are automatically able to talk to each other).

The process begins by mapping out the organisation's current systems and data. This is largely automated, but interpreted and managed by real people. Think of it as a high-speed MRI scan of an organisation. Except that this scan can be updated at any time as things change or new information comes to light. And it can become a controller, manipulating the system that it has just scanned.

This is followed by modelling the business processes so that IT systems and data collections are represented in a graphical way that makes sense to the business. The modelling of business entities allows people to talk, for example, about "customers", "sales", and "deliveries" rather than technical jargon.

By putting map and model together, Celona Evolve creates a software environment that links business processes and systems, where business experts and IT staff can build a common understanding of how information flows between functions and how they can implement business rules. They can also

model and test the impact of making changes to these flows and rules, only implementing

those changes when they are happy that they'll work.

Remember the old mantra, "garbage in, garbage out"? Systems are only as good as the data they are given; Celona Evolve's ability to control the flow of information helps ensure the right data is delivered at the right time, thereby making the systems much more effective.

Traditionally, of course, changing the way information flows between systems did not change the underlying systems themselves. Today, however, there is metadata – data about the content, structure, and content of other data – that can be used to influence the way a system works. Here, again, Celona Evolve can control the data and metadata in order to get the best out of the system.

Celona Evolve thus combines and controls a number of different techniques for systems and data integration into a single software tool, making that integration dramatically faster and cheaper.

The model-driven changes instigated from the Celona Evolve dashboard can be used to affect flows and business rules between any part of any number of old and new systems, keeping everything in sync. As changes are made, data is monitored and cleaned, and all changes are recorded in an auditable history.

# Real-world implementation

A decade ago, the idea of an information control system using a model-driven architecture was just that: an idea. Over recent years, however, Celona have taken the initial concept and proved it in many real-world implementations.

## ABN Amro

When customer data had to be transferred from Fortis Bank to the Dutch bank, ABN Amro, in challenging timescales governed by mandatory EU requirements, Celona were able to prove 100% data integrity in a pilot scheme, and then transfer 2.5 million customers within the required timeframe.

## Telstra

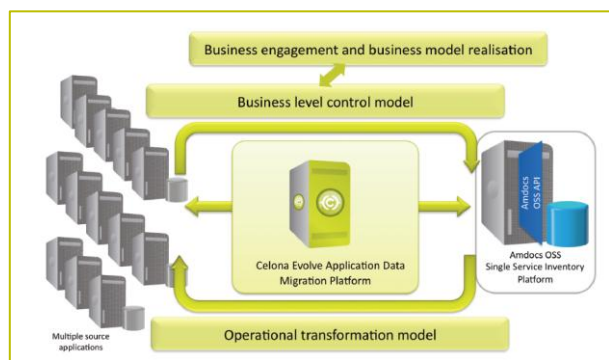
Telstra, Australia's leading telecoms and information services company, wanted to update its systems in order to reduce operating costs and improve customer experience. After 18 months work by 150 people, there was still no progress of any value. Celona's team of four people took one month to prove that the work was possible — and then implemented a full solution in 14 months, involving the consolidation of 13 different systems.

## KPN

KPN, the leading telecoms company in the Netherlands, wanted to improve its service to business customers by updating its systems, but did not want to incur massive migration costs where they were not necessary, and could not risk interruption to their systems. Celona solved the challenge by allowing the introduction of new systems where there was benefit while maintaining the legacy systems until they could be naturally retired.

## BT

BT wanted to offer its top 450 enterprise customers a bundle of legacy voice and modern data services. The existing enterprise billing system was unable to handle this combination, but there was a new BT billing system that could — if only BT's enterprise customers were on that system. Celona enabled an accurate and seamless transfer of all of the enterprise customer data from the existing system to the new billing system.



## Conclusion

It can be argued that, Houston, we no longer have a problem. We no longer have to be crushed by data, or strangled by systems. We can have insight and agility, improvement and innovation. We can turn data into information. A modern information control system is a liberating force, one that can transmute data into information we can trust and use, and from which we can extract genuine benefits.