

Business process reviews

Mincom undertook reviews of each step in steel supply from the usual request for quote (RFQ) onwards and found an inordinate amount of data exchanges between fabricators and their suppliers (distributors, detailers and roll formers) whether ordering or designing solutions. There is very little data exchange or communication between organisations other than via the fabricator. Fabricators are normally the only ones that interact directly with a client, although it is becoming more common for detailers to deal directly with an end user for some larger projects.

Detailers will typically only provide electronic data if the fabricator requests it as it is more costly to produce the 3D Models and CNC data than the drawings alone. The majority of processors and roll formers have invested in equipment that can take CNC data but normally need to create the data manually from detailed drawings provided by the fabricator.

A high number of variations and post production changes are caused by inaccurate interpretations of the detailed drawings.

Where to from here...

The ASI workshops generated some clear direction for the technology integration drive encapsulated in a number of recommendations:

- ◆ Establish a working party to quantify cost savings from better data integration and showcase these, whilst identifying ways to overcome non-technical issues.
- ◆ Develop a simple cost/benefit calculator to help steel organisations predict cost savings from data integration.
- ◆ Work with software vendors, TAFE's, detailers and fabricators to establish appropriate training courses and certification.
- ◆ Communicate the capabilities of proven software applications, equipment and detailers throughout the steel industry.

- ◆ Facilitate regular discussion forums with defined agendas and outcomes that include all steel industry sub-groups.
- ◆ Establish a panel of certified vendors prepared to support the adoption of 3D modeling applications by offering customised applications that target the design and fabrication segment of the steel industry.
- ◆ Expand the focus of the Steel Online web facility to include CNC data integration.

One bright light is that only a small number of different applications are in use across Australia, which should simplify any collaboration effort. The majority of detailers use *AutoCAD*®, *ProSteel*, *Xsteel*®, *StruCAD* or *PROCAD*.

How the ASI fits in...

The ASI will continue to advocate the benefits of data integration to lift appreciation of the technology through hosting of steel industry forums with those from designers to fabricators.

For instance, the ASI is looking at developing a central website register of the detailers and their capabilities to show that they have the capability to provide 3D models, CNC data or other electronic information to smooth steel production.

The ASI will also host more regular seminars and demonstrations of new CNC/3D software in conjunction with reputable software vendors across Australia to raise awareness and understanding. Like the workshops, the updates would be peppered with successful case studies that link the technology with real life application to reinforce the theory.

The ASI is working with relevant industry bodies to develop a national qualification for detailing that tunes everyone in for singing from the same songbook.

There is also a major role for the ASI to play in helping set a coherent framework for attaining technological parity in the industry through new national software standards and benchmarks for steel in line with overseas.



AUSTRALIAN STEEL INSTITUTE

Further information:

Telephone 02 9931 6666 or email enquiries@steel.org.au

All together now!

Technology sharing to keep Aussie steel in sync

The Australian Steel Institute (ASI) is in the midst of a program aimed at streamlining the steel value chain by promoting parity across the technological divide - in effect getting the industry to 'sing in tune'.

AUSTRALIAN STEEL INSTITUTE



Whilst steelmaking in Australia is solely the business of two major entities (BlueScope Steel and OneSteel), the majority of the country's steel industry mostly comprises a plethora of SMEs operating across the vast geographical spread of the nation.

This has led to a less than optimal approach to processing and utilising steel, a trend exacerbated by the proliferation of new design software applicable to steelwork. The dispersed adoption of this technology has created superfluous bottlenecks to the process of technology transfer.

There are clear gains to be made from opening better ways for steel companies to share information on any one project via data integration. Overseas industry that reviewed processes and adopted better data integration are now reaping the rewards of their investments. Low-cost Asian countries have invested recently in hi-tech equipment and large scale facilities. This may pose a significant threat to the Australian steel industry.

Why share technology?

- ◆ Simplifies supply for builders
- ◆ Eases errors from manually interpreting data
- ◆ Saves time, saves costs by streamlining data flow
- ◆ Promotes healthy collaboration across the steel industry
- ◆ Creates a 'one-shop-stop' way to compete with overseas
- ◆ Better technological capacity to meet international requirements
- ◆ Eases impact of design changes right down the steel value chain

DID YOU KNOW... overseas steel industries that embrace data integration capture more market than elsewhere AND software vendors that partnered with equipment makers are now among the steel industry's top players in major overseas markets.

EG... "The steel industry's market share of building construction in the UK has risen significantly since the early 1980s and is now the highest in the world. At that time steel's market share of framed single story buildings was 65% and is now over 95% and of multi-storey buildings was 30% and is now over 70%. As the industry matured during the 1980s and early 1990s the push for improved efficiencies came from within the larger fabricators. The software vendors targeted new releases that addressed specific functionality adding value to the CNC automation process, with two vendors, Tekla and AceCAD evolving to become a duopoly in the UK steel industry, for 3D applications."

What is data integration?

Data integration refers to the automated generation of data from a source system (or application) and subsequent automated input of this data into a target system or application.

The types of data that can be integrated is not limited to particular business functions, applications or needs, but like all systems, data flow across a network is only as good as the weakest link and can be technically constrained by the capabilities of the systems involved.

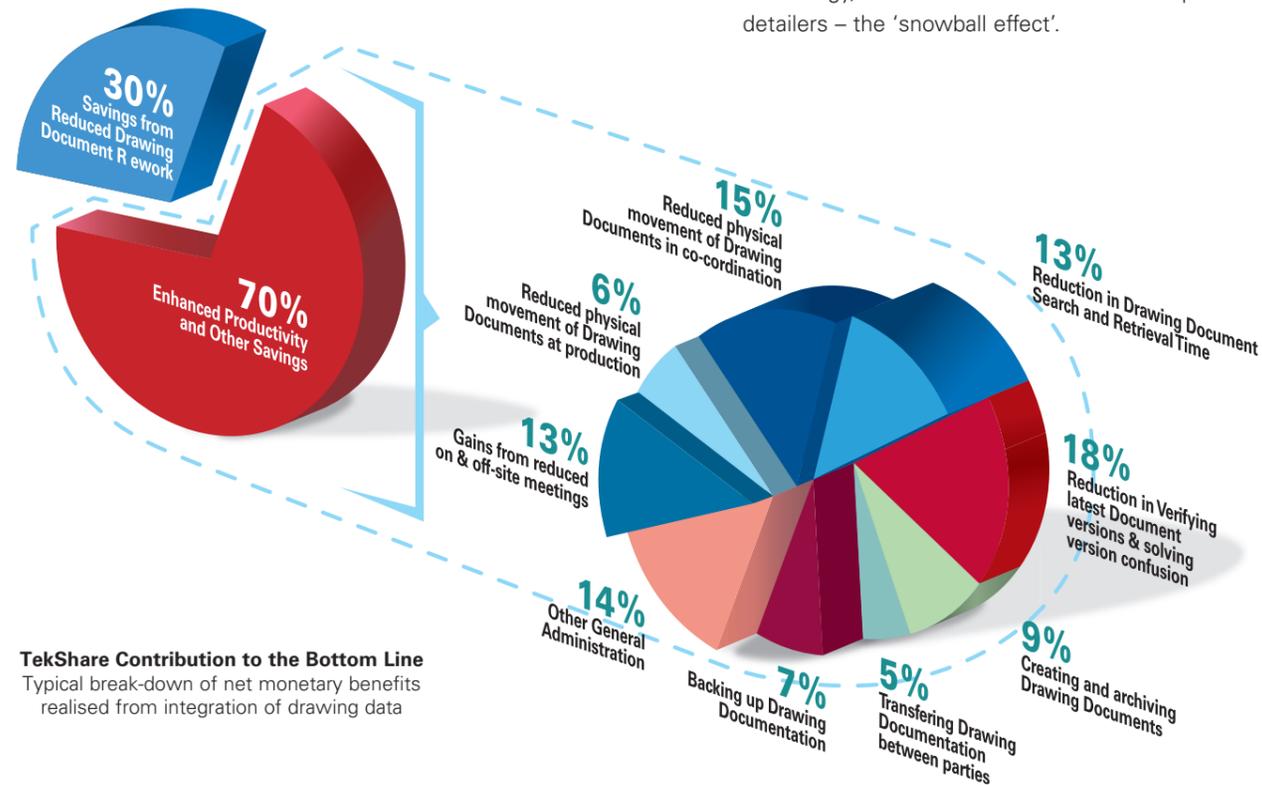
Each IT system is required to have a business to business (B2B) integration capability which can handle security, data transformation, trading partner management, error and exception handling, document routing, business process and connection management, document logging and tracking.

Data and connection standards help to alleviate the differences by normalising data but as business systems vary, there are usually changes required in either format or content to achieve fully automated integration.

Software vendors who provide applications that import and export data are critical to determining industry wide standards and facilitating their adoption.

But different equipment will have different data formats which may not be supported by the software packages and so enhancements, add-ons and other work-arounds are required to get the data in the required format.

Data integration proposes to make better use of the specifications captured within the drawings by using it to drive the equipment producing the steel.



Clear call from industry...

The ASI commissioned a project in 2006 to investigate the potential for data integration to assist the Australian steel industry in becoming more efficient and cost competitive.

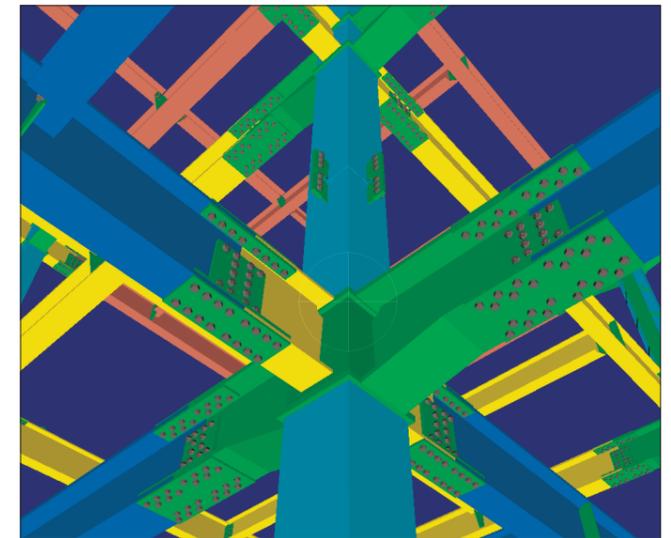
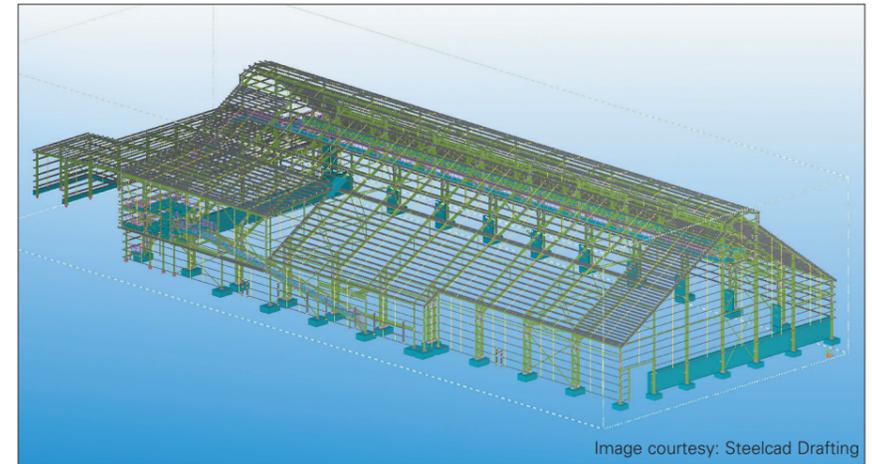
A series of workshops were initially conducted in Queensland with each of the different steel industry sub-groups. This provided valuable findings, prompting the ASI to engage Mincom* to conduct similar workshops in each state. Mincom also researched the practices in use overseas in the United Kingdom, USA and New Zealand.

The ASI and Mincom spoke with players from across the Australian steel supply chain (fabricators, detailers, merchants and distributors, processors and roll-formers) about the current capabilities for producing and using computer numerical control (CNC) data, the significance of systems parity, business process improvements from data integration and challenges to its widespread adoption.

For many, the workshops were the first opportunity they had to discuss business processes with their steel industry partners.

The workshops found...

- ◆ The Australian steel industry is fragmented and largely unaware how industry alliances can share costs and benefits.
- ◆ As more steel fabricators and processors invest in CNC technology, this will become a minimum requirement from detailers – the 'snowball effect'.



- ◆ While demand for CNC data has grown steadily since early 2006, it hasn't triggered widespread adoption.
- ◆ Training and skills retention is a key issue that needs to be tackled. The consultation also raised a number of pertinent commercial issues...
- ◆ Who is responsible for errors and rework if the data model is incorrect?
- ◆ How are cost savings shared by processors along the steel value chain?
- ◆ Do end customers place a higher value on data modeling that incurs extra detailing costs?
- ◆ Fabricators can play a pivotal role in promoting and accepting data integration.
- ◆ Software vendors also have a key role to play in the adoption and establishment of industry applications that support the use of CNC data as they have overseas.

* Mincom has been a member of the Australian Steel Institute (ASI) since 2004 and has supported a number of ASI initiatives such as the Queensland Technology Integration Forum.