



A white paper by Alistair McLeod  
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# SUSTAINABILITY IN THE CONSTRUCTION INDUSTRY

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## Introduction

Sustainability and risk management are major issues for construction and engineering organisations as the industry continues to shift culturally and move towards greater operationally excellent<sup>1</sup> business models. Recent economic conditions have compounded the pressure and, coupled with the consolidation of sub contractors and regulatory pressure from government, this has inevitably led to stiffer competition. Within this new sphere many organisations are struggling to manage costs and differentiate themselves from the competition.

## The Challenges

The primary driver for change is embodied in the concept of the triple bottom line<sup>2</sup>, where organisations need to consider corporate social responsibility and environmental accountability within the framework of economic sustainability. In recent months the economic pressures on the industry have increased with house builders in particular feeling the pinch. It is during these periods that inefficiencies in business processes and practises are cruelly exposed. The last decade has been a boom time for the industry and as a result there is still a culture where change is not readily accepted; “We have always done it this way and it seems to work fine”. This has resulted in a distorted view of the benefits that areas such as IT can bring. The industry still views IT as a second class discipline with little relevance to strategy or operations. This has to change, and those who put technology high on the agenda will benefit in the long term and during the immediate difficult times ahead.

The biggest challenge is convincing business leaders that they need to invest in technology in order to help drive down costs or improve quality. This is often a difficult notion to embrace, particularly in leaner times, and ironically it is usually the IT budget that gets cuts first. This is the wrong thing to do – technology needs to be recognised as a business tool rather than a technology enigma, and construction organisations need to start using it more creatively and pro-actively.

## Placing technology high on the agenda

There are two major hurdles to overcome; the first is to ensure technology is seen as a strategic tool rather than a commodity. This means it needs a serious agenda at board level with proper representation and a sensible budget. The second challenge is to ensure the IT budget is spent wisely. All IT projects must be strategically justified with a well defined business case and return on investment. IT Projects need to be aligned directly with the business strategy, and often the pre-cursor to a technology implementation is a business improvement initiative. Project teams for example often operate in isolation of each other and the processes, practices and gateway criteria has evolved or is driven by the experiences of individuals in the team. The first stage is to standardise the practices of these teams into a framework for delivery, then look at the suitable technology that can be used to help improve the efficiency, visibility and control.

## Improving Efficiency and Reducing Risks

When it comes to technology, many organisations focus on the obvious first such as financial systems, e-procurement, e-tendering and ad-hoc project management technologies like Primavera and MS Project. There is no doubt these technologies can help, but often they are implemented in isolation which leads to further costs and inefficiencies, for example multiple licences, hardware costs and double entry of information. This is also a problem when it comes to risk management, as the need to have visibility of information and a mechanism for measuring progress is critical. The lack of integration of critical information results in the manual production of reports and management information. There are some great Business Process Management (BPM) technologies available that can help integrate the systems you have already, and coupled with a Service Oriented Architecture<sup>3</sup>, you can capture information easily and measure and report progress in a timely fashion. This approach can also provide a very flexible IT architecture that can grow and adapt with the business, without impacting on the underlying information.

## Uniting the Supply Chain

One of the biggest problems I encounter, particularly for the SME sector, is the ability to provide IT infrastructure throughout the supply chain. Once the project begins on site it is often difficult and costly to get fast and reliable Wide Area Networks (WAN) in place, particularly for short duration projects, leading to a break down in the use of technology and consequently the adoption of manual procedures. This then leads to inefficient processes with additional time and cost implications.

Each site location is different, and there is not a one glove fits all solution, but there is a toolkit of technologies that can be adopted creatively to help alleviate some of the problems. For example the most common problem is achieving a fast and reliable connection. A lot of organisations are using 3G technology but the bandwidth is small and unreliable. This is where WAN optimisation technologies such as Riverbed<sup>4</sup> can be deployed. These technologies can help consolidate the IT Infrastructure and improve application performance over small bandwidths. This is particularly useful for collaboration and communication technologies such as SharePoint, where large quantities of documents need to be shared between head office and the remote site. The devices are easy to install and you can achieve significant performance improvements when running the devices cold.

Even when there is no connection available due to the remote location of the site, document sharing and synchronisation tools such as Microsoft Groove<sup>5</sup>, can be adopted to at least allow mobile workers to share documents with remote team members and synchronise changes from centralised network folders or SharePoint document libraries when they have a reliable connection.

Accessing technology for remote based workforces is critical if the efficiency benefits are to be realised throughout the supply chain, and understanding the options available and applying them appropriately can undoubtedly bring significant improvements.

## Differentiating from the competition

Finally, Information Technology can also be used as a differentiator to demonstrate to your clients that you have the controls in place to manage costs and quality. Providing integration with your client's systems, having accurate and timely information and effective project management will set you aside from the competition. Some construction organisations are now offering IT led services with contracts by utilising document management systems and project portals to enable greater collaboration with clients and suppliers. This not only helps reduce document redundancy and version control issues, but can also provide greater visibility of progress for the client. The businesses benefits can also help reduce internal correspondence administration and improve project assurance by enabling faster access to the right information.

## Conclusion

There is no doubt the construction industry has embraced technology, but it has often been piecemeal or used to address specific problems. It is time to start utilising technology to achieve business goals and drive client satisfaction. In a tighter, more competitive market place, the industry needs to be savvier with the way it executes projects, and throwing money or manpower at the problem is no longer a viable solution. Organisations that see technology as a way of increasing performance will, in the long term, be better equipped to deal with the difficult times ahead.

1 *"Discipline of the Market Makers"* by Michael Treacy and Fred Wiersema

2 *"The Triple Bottom Line"* by Andrew Savitz

3 *"Service Oriented Architecture"* a white paper by Alistair McLeod. Can be accessed on [www.waterstons.com](http://www.waterstons.com)

4 [www.riverbed.com/docs/CaseStudy-Riverbed-LaganConstruction.pdf](http://www.riverbed.com/docs/CaseStudy-Riverbed-LaganConstruction.pdf)

5 <http://office.microsoft.com/en-us/groove/HA101650231033.aspx>