

Messages and actions from Accelerating Change – for specialist engineering contractors

Sebastian Macmillan, Eclipse Research Consultants, final version, 1 July 2004

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Accelerating Change – what does it mean for you?

Setting an agenda for change

When the Strategic Forum was established in 2001 to bring together a number of rethinking construction initiatives, it set out in *Accelerating Change* a new vision for the production of the built environment:

Our vision is for the UK construction industry to realise maximum value for all clients, end users and stakeholders and exceed their expectations through the consistent delivery of world class products and services. In order to achieve this the UK construction industry must:

- add value for its customers, whether occasional or experienced, large or small;
- exploit the economic and social value of good design to improve both the functionality and enjoyment for its end users of the environments it creates (for example, hospitals where patients recover more quickly, schools and work places which are more productive and more enjoyable to work in, and housing which raises the spirits and enhances the sense of self worth).

Accelerating Change endorsed the earlier report of the Construction Task Force *Rethinking Construction*, including its series of recommendations captured in the widely-publicised 5-4-7 diagram (figure 1). The diagram summarises the radical changes in the processes through which the industry delivers its projects that were called for in *Rethinking Construction*. The report drew inspiration from developments in other sectors, particularly the automotive industry, where innovation had driven up quality and reduced production costs. It also drew on international comparisons. It identified that the industry as a whole was underachieving, that it invests too little in capital, research & development, and training, and that it was leaving too many of its clients dissatisfied with its overall performance. *Rethinking Construction* recommended the creation of an integrated project process for the industry linking greater use of standard components and pre-assembly with improved project management and closer long-term relationships within the supply side. The five drivers for change included better leadership, greater focus on customers’ needs and the delivery of quality by all members of the team, together with committed leadership and greater respect for all those responsible for creating value in the construction process. Finally, target setting and regular measurement were identified as means to drive up standards of performance, efficiency, and safety.

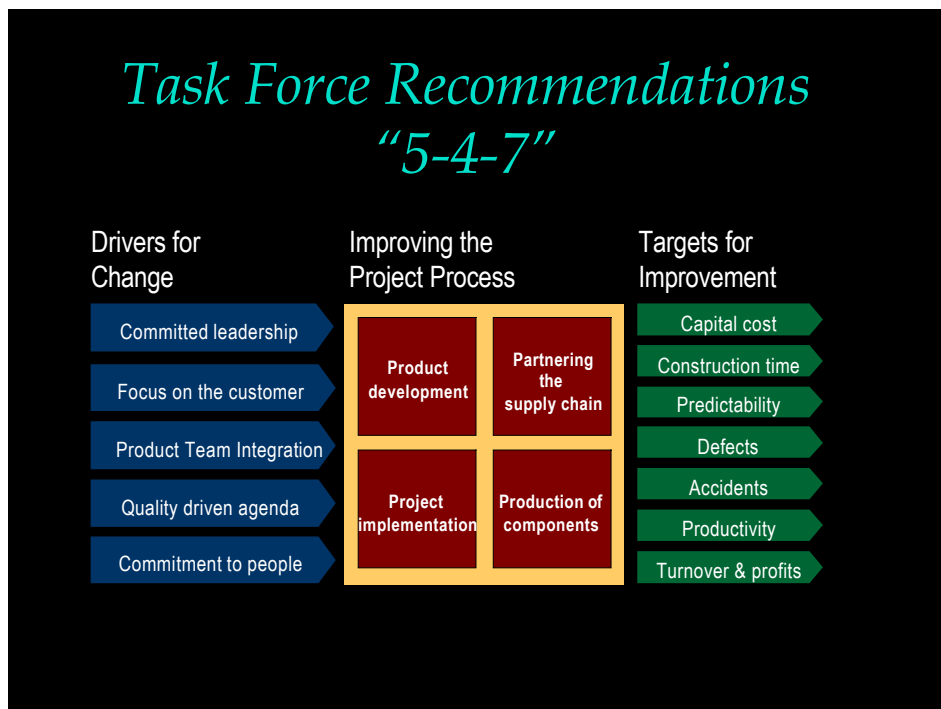


Figure 1 The 5-4-7 diagram from Rethinking Construction

Accelerating Change calls for radical improvements in the construction industry and proposes a series of headline targets to help the industry improve its performance. It calls on all those who work within the industry to provide a better service and better delivered projects.

Benefiting from the new ways of working: improving training, competence and reputation

Construction is changing. By initiating a wide variety of improvement initiatives that affect everyone in the industry, it is becoming increasingly professional, adopting new ways of working and improving its image. Specialist engineering contractors, just as much as other players, need to participate in the change process. Through your working practices and the adoption of the new ways of working, you can help the industry move towards a culture of continuous improvement based on regular performance measurement. You can contribute by working with a regular group of contractors and sub-contractors, made up of those who honour recognized working rule agreements, who have excellent health and safety records, and who train their workforce.

The Strategic Forum's third, fourth and fifth headline targets relate to training and competence:

- *By 2006, 300,000 qualified people recruited and retained in the industry.*
- *By 2007, a 50% increase in applications to built environment higher and further education courses.*
- *By 2010, a fully trained, qualified and competent workforce on all projects.*

In terms of training, SummitSkills has set strategic priorities to ensure that the right competencies, standards and qualifications are in place. SummitSkills is the Sector Skills Council for the building services engineering sector representing the electrotechnical, heating, ventilating, air conditioning, refrigeration and plumbing industries. The professions and trades covered in the sector are key to all other sectors in the UK and the individuals in these industries work for employers who demand a highly trained and skilled workforce.

SummitSkills supports entrepreneurs in setting up new businesses and developing their management and workplace skills, as well as helping to develop their workforce to suit the environment in which they are working. Key skills will be identified and courses and programmes of learning developed so that the sector remains a vibrant place in which to work and set up business.

Being aware of the client's needs throughout the process

For a successful outcome, it is vital that all those involved in the process have a clear understanding of the customer's needs and what they expect from the finished building. *Accelerating Change* makes a strong case for the early involvement of contractors as part of the group of regular collaborators who will be responsible for delivering the project. The whole team needs to be clear about the client's requirements; without clarity at the outset there are likely to be changes throughout the delivery process resulting in waste, duplication, poor design and dissatisfaction for everyone involved. As a minimum, the project should meet the needs and requirements of the customer.

Being aware of the implications of the Clients' Charter

Contractors should be aware of the principles of the Clients' Charter. It was developed by a group of leading clients of the industry, and sets out a series of general principles whose adoption can assist both clients and the supply side to work effectively together.

At its simplest, the Charter calls for clients to:

- Be clear about what they want from a project,
- Understand the connection between cost and quality,
- Recognise and define risk
- Commit to eliminating waste

- Promote co-operation and non-adversarial attitudes
- Select contractors on the basis of competence and measured performance, and who will ensure that sub-contractors and suppliers are treated fairly.

In return, clients may expect contractors to:

- Inform them of the options for meeting the client's own needs
- Keep them informed of project progress, including delays and cost over-runs
- Build on time and to a quality that meets the client's needs
- Help to find solutions to problems that are fair to all parties
- Accept responsibility for training operatives
- Solve materials supply problems

The Strategic Forum's second Headline Target is for 20% of construction projects by value to be by clients who work in accordance with the principles of the Clients' Charter by the end of 2004, rising to 50% by 2007.

Details of the Clients' Charter may be obtained from Achilles Information Ltd, telephone 01235 820813, website: www.clientsuccess.org.

Delivering consistent quality and value in the finished product

The objectives of Rethinking Construction are to achieve radical improvements in the design quality, sustainability and customer satisfaction of UK construction. Excellence in product design can help to enhance the built environment and improve our quality of life. Clients want construction projects that provide good value and performance in the short, medium and long term, that offer good functionality and flexibility, and that are delivered within budget, on time and defect free. This does not necessarily equate to the cheapest tender.

In order to bring clarity and focus to the goal of better designed buildings, the Design Quality Indicator is a recently introduced web-based assessment tool that has been developed by the Construction Industry Council and others, and endorsed by the Strategic Forum. It is intended to be used by all stakeholders in a project to help them negotiate and clarify design priorities at key stages in the process. Contractors should use and promote it as part of their commitment to quality.

'The DQI is a welcome innovation as it takes the guess work out of the whole design process. It focuses the team on the needs of the end user, involves all the stakeholders throughout the process and helps develop a more sustainable building. The overall result is an improved product and importantly we can learn from the process because the DQI allows us to measure how the improvements are made.' Peter Rogers, Chairman, Strategic Forum for Construction

The Strategic Forum's sixth Headline Target is for Design Quality Indicators to be used by:

- ***500 projects by the end of 2004***
- ***60% of all publicly funded/PFI projects (having a value in excess of £1m) by the end of 2007***
- ***20% of all projects (having a value in excess of £1m) by the end of 2007.***

Details of the Design Quality Indicator tool can be found at www.dqi.org.uk.

Participating fully in a stable group of contractors and sub-contractors

A key recommendation of *Accelerating Change* is that all those involved in construction unite together as a stable group of contractors and sub-contractors, in which all participants focus on common objectives and working practices to produce a building that delivers good value and meets the client's vision.

Accelerating Change recommends long term relationships based on clear measurement of performance, and continuous improvements in quality and efficiency. *Partnering* is the process of working together as a team to improve performance through agreeing mutual objectives, devising a way to resolve any disputes, collaborating to achieve continuous improvement, and sharing risks and rewards equitably. *Strategic partnering* involves the integrated supply team and the client organisation working together on a series of construction projects in which knowledge and expertise can be transferred from one project to the next. *Project partnering* on one-off projects can still offer many of the benefits. Small firms often have long standing relationships with contractors, sub-contractors and professionals such as architects. These relationships are *partnering* relationships.

Accelerating Change emphasizes that stable groups of contractors and sub-contractors benefit greatly where there is mutual trust and openness, and recommends they should devise means for managing risks and sharing rewards in ways which are equitable to all parties. It calls for payment practices to be reformed to facilitate and enhance collaborative working. Lengthy payment periods and delays in payments severely damage construction businesses, especially small and medium sized firms. In a relationship of collective responsibility, responsible behaviour and mutual interest, payment delays and retentions should be unnecessary.

- ***The Strategic Forum's first headline target is that by 2004, 20% of projects are undertaken by integrated teams, increasing to 50% by 2007.***

The Strategic Forum's Integration Toolkit contains workbooks for both Integrated Project Teams and Integrated Supply Chains, each containing practical step by step advice to help achieve integration and develop collaborative working relationship between contractors and sub-contractors. It is available from www.strategicforum.org.uk/sfctoolkit2/home/home.html. Constructing Excellence has published a guide to Effective Teamwork which is available at www.constructingexcellence.org.uk/resourcecentre/themes/themedetails.jsp?id=4007&track=Teamworking.

Participating early in the process and involving all key suppliers

Accelerating Change calls for competitive tendering to be replaced by long term relationships and established supply chains based on clear measurement of performance and continuous improvement. Collaborating with other group members will provide you with opportunities to drive out waste at all stages of the project, to raise productivity and to reduce project times, to reduce costs by 'getting it right first time', and to 'design out' health and safety risks at source.

As well as participating fully in a group, as a specialist engineering contractor you should also help the team to harness the potential and expertise of your suppliers. Stable groups are more likely to engage with contractors who are prepared to participate early on and who have known suppliers to support them, since the expertise of those suppliers will be drawn upon in offering solutions. Group made up of established suppliers who stay together from one project to the next take experience and a culture of continuous improvement with them and offer a number of demonstrable business, efficiency and safety benefits.

The principles of supply chain management are explained in the *Prime Contracting Handbook of Supply Chain Management* parts of which are available on the web at www.mod.uk/linked_files/sc-handbook.pdf. The full book is published by CIRIA under the title *Building Down Barriers: The Handbook of Supply Chain Management*.

Identifying and using standard solutions

Accelerating Change recognises that product manufacturers, suppliers and specialists have the research and development expertise to develop innovative solutions that:

- involve less site processing

- reduce health and safety risks, and
- improve quality and reliability.

If these benefits are to be gained by the industry, contractors must ensure that key manufacturers are part of the integrated team and take every opportunity to involve other product manufacturers and suppliers. Their input to product design can offer the potential for considerable savings through identification of standard products and detailed design solutions that are practical to implement and reliable in operation. Manufacturers can advise teams about the availability of new products and innovative solutions, and promote the advantages of increased standardisation, pre-assembly and pre-fabrication to clients and designers. Substantial opportunities exist to reduce waste, add value and enhance the finished product.

However, the drive towards standard solutions must not be at the cost of the flexibility and customisation that specialist engineering contractors are often best placed to provide to clients.

Exploiting information technology by getting wired up

Many specialist engineering contractors recognise that IT can deliver significant benefits and are already using information technology successfully in-house. However, the move towards e-business requires the industry to transform its traditional methods of working and its business relationships.

At its simplest, electronic communication can enhance speed and accuracy of communication. More comprehensively, changing your business to exploit the power of computers effectively can dramatically cut costs. Ideally, you and others members of the group will devise an IT strategy which will best enable you to work electronically within the team, while also collaborating electronically with your supply chain. The level at which you will align your systems with the team will depend on the nature of the project, the capabilities of the parties, and an assessment of the scale of the resulting benefits. Potential benefits of applying IT effectively include:

- improved communication including speed of information delivery and reductions in errors and omissions
- improved business relationships from less repetitive processing of information
- raised efficiencies and skills development from knowledge management
- improved visualisation of alternative options and sequencing of trades
- economy and speed of construction
- reductions in the costs of transactions between the parties.

The extent to which you should align your systems to those of other members of the team will depend on the nature of the project, the capabilities of the parties, and an assessment of the scale of the resulting benefits. Ideally, an IT strategy for a project will be negotiated by the team at the beginning of each project to establish agreed protocols for sharing information electronically. Wide-ranging advice on IT for contractors and sub-contractors is available from the IT Construction Best Practice programme website: www.itcbp.org.uk.

Providing products and processes that meet sustainability criteria

According to *Accelerating Change*, sustainable construction requires a step change in the culture of the industry, characterised by clients procuring - and integrated teams delivering - sustainable construction projects, products and services. Increasingly, building owners will be judged by their customers and other stakeholders on their ethical stance in relation to environmental performance and sustainability. Buildings that are more pleasant to be in and use, cheaper to run and maintain, and have better environmental performance will improve the image and reputation of the industry. Contractors must therefore help clients to appreciate, and to meet, their environmental and social responsibilities. Jointly with others in the contractors group, they must take responsibility for the environmental sustainability of the complete structure. Clients must also accept their responsibility not to accept the lowest tender but to consider the long-term costs and benefits of all projects.

The ability of a group to pre-plan a project through from start to finish is a prerequisite to designing in sustainability. Sustainable processes and products should not be added on to the end; they are achievable only if introduced at the start. Projects must be pre-planned for ease of construction, make maximum use of standard components and processes, conserve scarce resources, and protect wildlife habitat and bio-diversity. The completed building should meet best practice levels of energy and water consumption targets, helping to reduce pollution and tackling climate change. These actions will ensure each project enhances the built environment in a sustainable way and improves the quality of life. Pre-planning, designing and specifying projects around the goals of sustainable construction will help to ensure they achieve the triple bottom line of sustainable development by maximising economic and social value and minimising environmental impacts.

The Constructing Excellence website contains a wide variety of material about sustainable construction, including an introductory fact sheet for contractors at:
www.constructingexcellence.org.uk/pdf/sus_constructors.pdf

Co-ordinating design, manufacture, construction and delivery

A contractor's ability to deliver an effective service to the client is greatly enhanced if it co-ordinates operations that encompass design, manufacture and delivery as well as construction.

In contractor-led procurement routes, contractors should ensure that designers are able to get close to clients so as to interpret the brief. Contractors should also encourage designers to involve specialist sub-contractors and key manufacturers as soon as possible. Once the project is designed the advantages that can be offered by these specialists are missed.

Supply management is the process by which the flow of goods and materials from supplier to the point of use is optimised. Logistics is the process used to manage the flow of goods and materials, equipment, services and people through the supply chain. As a contractor, at each stage you should collaborate with the other members of the group and their supply chains to analyse every aspect of the supply chain process – acquisition, delivery and transport, storage, and the flow of materials and components to their point of use. Careful planning of these activities by the integrated team will help to minimise waste, reduce the likelihood of products and components being lost in transit or damaged on site, and prevent defective work. In turn this will contribute to productivity improvements, reduced project times and increased predictability.

Providing training, facilities and conditions that demonstrate 'Respect for People'

All too often the construction industry is perceived as offering a low-skilled, unsafe working environment and in consequence has failed to attract and retain the best people. Holiday and pension arrangements are relatively unattractive, and there is a culture of long hours. This is not healthy for the industry's employees and is costly for employers and their clients. Rethinking Construction also identified the need to improve management and supervisory skills in the drive for performance improvement. The Strategic Forum is determined to turn construction into a professional industry - improving its image and how the workforce views itself, and reversing a long-term decline in the industry's ability to recruit and retain a quality workforce. The Strategic Forum urges employers in the industry to honour recognized working rule agreements and to offer pay and working conditions which make construction an attractive industry in which to work and will attract new entrants. Shrinking and ultimately eliminating the informal economy will help to ensure that construction is an industry that competes fairly, provides security of employment, and invests in its people.

Employers must also train their workforce and have excellent health and safety records if the industry is to achieve the strategic vision of excellent performance. An "all qualified workforce" goes far beyond simple health and safety knowledge. Construction needs to build a professional industry, improving its image and helping to change the way the workforce views itself. The expansion of, and affiliation to, the CSCS card scheme, or equivalent schemes, is an important element of this process.

The Considerate Constructors Scheme already helps contractors to maintain tidy, safe sites, which cause minimum disruption to the local community. Contractors should adopt these schemes and work towards a culture of continuous improvement based on regular performance measurement.

Rethinking Construction identified 'respect for people' as one of its five drivers for change. A follow up report *Respect for People – a framework for action* puts forward a strong business case for action, and recommends that specialist contractors of all kinds and sizes should commit to achieving the standard of Investors in People. Respect for People Toolkits focus on equality and diversity in the workplace, quality of working environment, career development, lifelong learning and worker satisfaction. Your support for these initiatives will help construction become an industry whose workforce is appropriately skilled and qualified, benefits from a systematic programme of continuing personal and professional development, and is properly valued in the workplace.

A suite of Toolkits and Performance Indicators to support improvement in companies and projects is available via the Resource Centre of the Constructing Excellence website - www.constructingexcellence.org.uk/resourcecentre.

Implementing a comprehensive health and safety plan

Accelerating Change reminds contractors and all those associated with construction that the high levels of accidents and fatalities identified with the industry is no longer acceptable. It calls for projects to be pre-planned and well-designed with inherently safe processes to ensure they are good, safe and predictable.

In order to minimise health and safety risks, at each stage the group of contractors and sub-contractors should be able to certify that they have - together - considered these risks in order to ensure that the facilities currently developed will be safe to build and safe to maintain and operate. Delivering excellence in health and safety performance will enhance the corporate reputations of all involved in the project. Contractors should make health and safety a key priority during the construction phase. They should implement and work in accordance with a health and safety plan to ensure the facilities will be safe to build and safe to maintain and operate.

Further actions that can contribute to reducing risk in this area include:

- Using the CSCS scheme to ensure that those people who work at height are competent to do so, i.e. develop a specific test to evaluate their preparedness
- Maximising the opportunities to develop solutions that involve less site work
- Developing transportation and materials distribution methods that reduce risk to personnel on site.

Learning from successful projects

The construction industry rarely spends enough time learning from its achievements. Yet post project reviews are a valuable learning opportunity for individual participants and for their organisations. Ideally, you, the other members of the integrated team, and the members of your supply chains, should carry out systematic reviews of the teams' effectiveness, to learn from feedback and improve performance on subsequent projects, as part of a culture of continuous improvement. Examining what happened and why it happened will help your organisation to be better informed about the strengths and weaknesses of the approaches taken, the procedures followed, and the project outcomes.