Share value

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We should be conscious of the challenges that sharing construction data entails although, as Malcolm Horner details, there are a number of potential solutions

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The Economist Intelligence Unit has called data the ?4th factor of production?, as essential as the 3 factors of land, labour and capital. Generally, those possessing data are privileged and powerful, but have an ethical obligation to use it responsibly and consider the public good. Whether this happens is open to debate, however, because commercial and competitive forces often override other considerations.

The situation in construction is, in theory, no different, except that as professionals we are bound by a code of ethics and an obligation to serve our clients faithfully. There is anecdotal evidence, at least in the UK, that construction cost data is not collected as frequently, as rigorously or in the same detail as it once was. There are many potential reasons for this, such as:

- changes in procurement practice causing, for example, reduced use of standard methods of measurement;
- increased subcontracting so any data collected may be owned by members of the supply chain far removed from the client or tier-1 contractor;
- the difficulties and costs of collecting data in sufficient granularity;
- the absence of a widely accepted standard cost breakdown structure to ensure consistency of presentation and true comparisons;
- a failure to realise the benefits of analysing the right type of data in the right way.

Yet building information modelling, artificial intelligence, IT and data analytics may also make cost data more readily accessible and useable. It is therefore inevitable that data will play an increasingly large part in professional roles. However, this raises many questions, both ethical and practical, including the following.

- What are the benefits of data sharing?
- How can we ensure that data is collected rigorously and used in a responsible way?
- Will professional responsibilities to the client outweigh the commercial benefits of keeping data private?
- What role should professional institutions play?
- How can technology facilitate data collection and analysis?
- Who will pay for data collection and analysis, and who will own this data and the information it yields?

These questions, among many others, prompted the creation of the RICS insight paper Sharing construction cost data ? benefits, challenges and opportunities . This publication summarises the findings of 3 round-table discussions involving clients, consultants and contractors, and aims to promote the collection, analysis and sharing of data.

Issues and benefits

As whole-life performance becomes a more important consideration, the situation is exacerbated by increased difficulties in collecting data consistently and robustly, especially as there are likely to be several changes in the ownership of an asset. This means that no single party is responsible for collecting data throughout its lifecycle and so data may not get collected; or, if it is, it is not collected in a consistent way.

Since there is no widely accepted framework for collecting useful and consistent cost data, either for buildings or infrastructure, the launch of the International Construction Measurement Standards (ICMS) is a step in the right direction. Nevertheless, the value of the standards depends on the willingness of those who own the data to present it in the specified form and then to share it.

The benefits of sharing useful, robust and consistent data are widely recognised, both to provide benchmarks and improve the quality of estimating and cost prediction. Data sharing would be helpful to governments and other organisations that need to demonstrate value for money. It would allow the efficiencies of different organisations to be compared, and inefficiencies to be identified and targeted. Through international comparison, data sharing would also provide the opportunity to determine how things are done differently elsewhere, and allow clients and consultants, particularly smaller ones, to better determine what a project should cost, what it will cost and what it did cost.

Challenges and solutions

Table 1 presents the key challenges and suggests how they may be overcome. While clients are in general willing to share data, there is no consistent framework for them do so. Contractors, however, are much more precious about what they perceive to be a valuable commodity that offers competitive edge.

Table 1: Key data-sharing challenges and possible responses

Challenges	Responses
Some clients, particularly those in the private sector, forbid their staff to share their data.	Provide a trusted central repository to ensure the data is robust and comprehensive, and the context in which it was collected is precisely articulated.
Contractors and their supply chains want to know ?What?s in it for me?? and ?How can the whole supply chain be given incentives to collect and share cost data??	Persuade government of the benefits of data sharing. It should demand data from its supply chain, encouraging other clients to do the same. Clients should describe the data they require in the contract, and demand that contractors and their supply chains deliver the specified data.
We need to define what is meant by cost. Cost to whom? The client, tier-1 contractor or subcontractor?	RICS should take the lead in carefully defining costs and then incorporating the definition into ICMS.
Data has little value unless the context in which it was collected is also available e.g. differences in logistics.	ICMS already require compilers to specify the attributes and values of a project that might significantly affect cost. These should be continuously inspected to ensure that the context of the project is fully recorded.
Compilers, contributors and users of a shared database may not be sufficiently trained in the production	RICS should develop a global professional statement and related training courses. The lessons

and analysis of robust data.	learned from Highways England?s model of early contractor engagement and cost reporting should be widely disseminated.
Where will the data reside, who will control its quality and who will have access to it?	BCIS should develop a platform in which the data could be deposited and then be responsible for its cleansing and analysis. It will need a commercial model that ensures the sustainability of the repository without jeopardising the willingness of data owners to share their data.
Mining historical data is extremely resource-intensive and expensive.	HM Treasury should be approached to fund the conversion of selected historical data into the ICMS format. It may be sensible to focus on the future rather than attempting to analyse the past. Increased standardisation associated with off-site manufacture should make it easier to collect data. There are benefits in ensuring that contract sum analyses and target costs are structured in a consistent way.
The uptake of digital solutions in construction, particularly among estimators, is poor compared with other industries such as manufacturing.	It might be possible to develop training programmes around an electronic version of ICMS. This issue will decrease in importance as the next generation of quantity surveyors and estimators enters the industry.
The quality and level of detail of data available changes as a project matures. Data must be compared at the same point in the funnel of uncertainty.	ICMS should require the specification of the project stage at which the costs were prepared and the quality of the data used in their preparation.

Further debate

Key questions to stimulate debate on sharing cost data include the following.

1. The benefits of sharing data seem to be well recognised by clients, consultants and, to a lesser extent, contractors. This willingness appears to be proportional to the perceived benefits. Does this represent a true reflection of the appetite for data sharing?
2. How can clients and their supply chains be encouraged to collect data that is comprehensive and robust, and for which the context is properly described?
3. Should RICS be pressing for clients that are the ultimate beneficiaries of data sharing, especially government, to write into their specifications the nature of the data they require and the way it is to be collected and reported?
4. Should these clients be required to pay the cost of data collection and analysis?
5. Should RICS take the lead in setting up, managing, quality-assuring and analysing a data repository?
6. Are ICMS the appropriate vehicle through which to standardise the process of cost data collection and analysis?
7. Should there be research into areas such as the business models used in other industries, for instance oil and gas, and the way they collect data? Should research also analyse the challenges in understanding the ways data is used, and how it might be futureproofed?

Conclusion

The value of sharing data is widely recognised, especially among clients and consultants. If the industry is convinced that the benefits of data sharing outweigh the not insignificant challenges that it also presents, then clients must take the lead in bringing about the necessary change.

Malcolm Horner is Emeritus Professor of Engineering Management at the University of Dundee and the lead author of the Sharing construction cost data ? benefits, challenges and opportunities insight paper

Further information

- Related competencies include Building information modelling (BIM) management , Commercial management (of construction) , Data management , Design economics and cost planning
- This feature is taken from the RICS Construction journal (September/October 2018)
- Related categories: Construction information ; Cost analysis and benchmarking ; Cost reporting