Discussion: Developing a business process model for bridge management

J. Harvey and P. Owens

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The excellent paper by Harvey and Owens provides bridge managers with a good appreciation of process issues that need to be considered and implemented in day-to-day practice. With respect to bridge management systems (BMSs), many bridge owners may be in a similar position to that of Waterways Ireland in 2006, i.e. implementing a BMS for the first time or renewing/upgrading an existing BMS. I believe many bridge managers would find it useful to understand, in some more detail, how Waterways Ireland arrived at the decision to develop a bespoke BMS and then developed it to cater for the requirements of asset management.

1. SELECTING A BRIDGE MANAGEMENT SYSTEM

When the authors refer to a 'tailor-made solution' (or bespoke system), is this a system that has been built by a supplier from 'scratch' or has it been configured using an existing shell/framework provided by a supplier? If it is the latter, was the amount of configuration restricted by the supplier?

The general trend in the UK in recent years has been to adopt commercially available BMSs, although some organisations have selected to develop bespoke systems. Both approaches have their benefits and drawbacks, but key drivers for selecting a commercial system over a bespoke system have typically included the following.

- (a) *Cost.* While initial development, configuration and implementation costs can be comparable, typically the cost of ongoing technical support (including technology patches/upgrades and ensuring a system complies with the latest IT requirements) proves to be significantly higher for bespoke systems. In their analysis of the whole-life costs of ownership, what did Waterways Ireland find? For example, are the long-term costs of the bespoke system offset by having an in-house IT team (who may also support other systems)?
- (b) *Other systems.* Typically, bridge owners in the UK need to interface their BMS with other commercial software packages used by the organisation (e.g. highway management systems, financial management systems, work ordering systems, etc.). This often means a commercial BMS that can readily interface with other commercial systems is more viable. With regard to

the other systems used by Waterways Ireland (that the BMS may need to interface with), are these bespoke or commercial systems? I believe this may be what the authors are alluding to in stating 'It allows flexibility to design the BMS around the existing Waterways Ireland infrastructure and internal procedures, thus minimising disruption to the organisation'.

2. ASSET MANAGEMENT

In adopting a BMS, a key consideration for many organisations is how it aligns with the tactical and strategic requirements of asset management, for example, long-term financial planning, whole-life cost/value analysis, monitoring and reporting asset health key performance indicators (KPIs) (as well as business KPIs). A number of organisations that have developed bespoke systems (primarily driven from an operational perspective of inspections and assessments) have later found that the information is not necessarily collated in a manner/format that is best suited for tactical and strategic asset management activities. Could the authors elaborate on the measures taken to ensure their BMS aligns with any current or potential future tactical and strategic asset management requirements?

AUTHORS' RESPONSE

The Waterways Ireland (WI) BMS currently under development has been created from 'scratch' using the operational requirements set by WI and the business process models for bridge management and Inspection.

WI spent a considerable time investigating the standard off-the-shelf packages that were available in the bridge management arena, and found that no system provided a perfect fit to our operational requirements and business process models. The BMS tender was advertised in the European Journal and was open to suppliers of 'off-the-shelf' and bespoke systems. The procurement process shortlisted two BMS suppliers whose proposed solution was bespoke development of a BMS. The long-term operational costs have been offset by having an in-house IT team and choosing the latest cutting-edge IT development platform, ensuring very few IT upgrades will be needed during the life-cycle of the BMS.

As the WI BMS is still in development, system interfaces have been scheduled for Q1 2009. The operational requirement within

the BMS is to link to our geographical information system (GIS) to provide integrated mapping and asset information within both systems. There are no plans to interface the WI BMS to our off-the-shelf financial systems. The operational requirement has stated that all information should be exportable in a number of different formats.

The WI BMS is only a subset of our asset management strategy. Asset management within WI has been aligned to our newly procured GIS. The BMS will be used from an operational perspective for inventory, inspections and assessments. The BMS will interface with the GIS within WI, which will meet our organisational asset management goals and objectives.