

Building Control Management System (BCMS)

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Organisation: Department of Housing, Planning, Community and Local Government (DHPCLG)

Country: Ireland

Level of government: Local government

Sector: Economic affairs, Housing and community amenities

Type: Communication, Data, Digital, Financial Resources, Human Resources, Organisational Design, Partnerships, Public Service

Launched in: 2014

Link to the innovation's website

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Description

The National Building Control Management System (BCMS) is a collaborative Shared Services project developed between the Department of Housing, Planning, Community and Local Government (DHPCLG), the Local Government Management Agency (LGMA), industry and the 31 Local Authority stakeholders, to enable the electronic administration of Building Control matters.

The aim of the BCMS project was to improve the efficiency & effectiveness of Building Control management, oversight and enforcement processes in Ireland, through promoting a culture of compliance, and facilitating electronic inspection activity.

Prior to 2014, 34 Building Control Authorities (BCAs) used 34 different paper based building Notice and Certification processes with no real-time oversight, and multiple counter-based transactions, which was both resource and time consuming.

Now, 31 BCAs (in line with the reductions to the number of local authorities under the Local Government Reform Act, 2014) are connected to a central electronic online system, the BCMS; a bespoke "Open Integrated System" of People, Processes and Systems with real-time transparent oversight and a streamlined user interface.

This has improved ease of doing business for the 50,000 users of the system i.e. owners, designers, builders and assigned certifiers. Users register on the system, complete the relevant statutory forms, upload the relevant supporting documentation and pay the required fee online. This registration process will progress to the validation process by the relevant BCA. All validation takes place within a 7-day time period. The BCMS enables the online publication of the National Statutory Building Control Register.

The BCMS was facilitated as part of Ireland's national recovery "Programme for Government" through the roll out of the "Building Control (Amendment) Regulations, S.I. No. 9 of 2014"; commitments set out in "Construction 2020"; "Action Plan for Jobs".

Why the innovation was developed

- The Building Control Regulatory Compliance and Inspection regime endured much criticism in the context of its role during Ireland's economic difficulties post 2008 leaving:• A legacy of defective buildings, loss of property taxes etc. • Scarce resources in Local Authorities using 34 independent systems. • Lack of consumer confidence. • Lack of streamlined procedures for doing business. • A deficit of knowledge/ training/ experience of the fundamental and statutory requirements of, and responsibilities imposed by the Building Control Regulations and Building Regulations.
 - The administration of building control was paper based, managed separately by 34 local authorities which involved multiple over the counter transactions consuming resources and time.
 - The "Public Service Reform Plan" (November 2011) identified the implementation of shared services as a major element in the "Government's Reform Programme". The concept of shared services is to consolidate transactional activities, ideally using optimised and automated processes that add value, thereby allowing concentration on core/strategic activities.
 - In order to prevent recurrence of building legacy failures, DHPCLG introduced new regulatory requirements that empowered responsibility and professionalism by requiring statutory certification of completed buildings by the builder and a competent professional. The certification process is based on the lodgement of design, inspection and compliance documentation during construction.
 - The BCMS database is searchable and real-time construction activity may be readily applied to a GIS Mapping module e.g. to have national oversight of building commencements and completions. This searchable database also enables oversight of who the builders, designers, assigned certifiers and owners are, what buildings they are working on and where these buildings are located.
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Objectives

Develop staff capacity, Enhance public trust, Enhance transparency, Improve access, Improve effectiveness, Improve efficiency, Improve service quality, Improve user satisfaction, Support economic growth

- DHPCLG's goal was to drive, facilitate and communicate change to create a Culture of Compliance with Building Regulations amongst building industry stakeholders (Owners, Builders, Designers, and Regulators); through implementing stronger building standards, a mandatory inspection regime and standardised approaches for compliance inspections by BCAs.
 - The business strategy provides for people, processes and technology in two modules; 1. BCMS electronic IT enabler; for administration (statutory Building Control Notices, Certification, Applications and Public Online open-data Building Register); 2. Centre of Excellence; for regulatory oversight (Compliance Support, Risk-assessment, Inspections and Enforcement) placing customer service/protection at the core, and improve the ease of doing business.
 - The specific goals of a standardised, fully electronic Building Control Management System (BCMS) operating as a shared service i.e. an "Open Integrated System" (People, Processes and Systems) are to;• Detect/prevent proliferation of building defects and rogue builders/designers across County boundaries. • Develop a consistent approach to customer relationships. • Provide oversight and communication protocols to notify users of potential hazards/defects in buildings to prevent proliferation. • Reduce of multiple inspections of premises by different sections of the Council. • Develop a consistent risk-based approach to enforcement including; Random oversight to ensure effectiveness and oversight; Development of standard inspection and reporting systems; Statutory Public Online Building Register
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Main beneficiaries

Academia, Businesses, Civil Society, General population, Government bodies, Government staff

- Registered users, the DHPCLG, the 31 BCAs and the General Public.
- This direct communication platform to upwards 50,000 registered users which include property owners, builders, developers, architects, engineers, surveyors and technologists, facilitates alerts relating to building matters/construction product to be targeted to those likely to be affected e.g. notification of defective construction products in the market place.
- The DHPCLG has real-time national oversight, extracting Performance indicators directly instead of 31 BCAs individually collating this information.
- The 31 BCAs have significantly reduced processing time and the number of over the counter transactions and have increased time for inspection activity. The BCMS database provides for a risk-based inspection process with Building Control Officers having instant access to design documents, which inform risk-based inspections. This ensures effective use of limited resources.
- The general public can view all activity on the online Statutory Building register.
- The information collected informs planning and development and economic indicators for industry etc.

Results

Efficiency

- All validations are made within a 7-Day period.
 - The BCMS has enabled Building Control Officers to have instant access to design documents which inform risk-based inspections. This ensures effective use of limited resources.
 - Key Performance Indicators are extracted directly by the DHPCLG and the CEOs of 31 Local Authorities-whereas this took approx., 1.5 Days when it was done manually by the 31 Local Authorities.
 - Storage hosting in the cloud-eliminates the previous paper storage costs.
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Effectiveness

- Real-time submissions and validations process.
 - Increased building inspection activity due to less administrative burden.
 - 99.84 % of submissions are now online because of ease of access making counter transactions virtually redundant.
 - The development of a Framework for Roles and Duties of Building Control Officers designed into the system-instant has promoted quality in public service delivery by providing guidance on a consistent approach to building control officers with respect to undertaking their duties.
 - Access to 101 Frequently Asked Questions for users.
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Service quality

Accessibility:

- By providing a centralised online system, the BCMS has improved for ease of doing business for the 50,000 users of the system i.e. owners, designers, builders and assigned certifiers.
- The BCMS is used 24/7.

Responsiveness:

- 7-day validation process.
- Users can have many projects in the system at various stages of submission.
- A CRM contact management system is in place for query responses. The dashboards can be arranged by the users to suit their needs and there is also a KPI reporting system which can be personalised.

Reliability:

- Significant reduction in number of CRM Queries since the launch of the initiative.

Other:

- Recent survey of users external and internal reports satisfaction with the service and a request to extend it to other services such as online planning etc.
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User satisfaction

- The BCMS has an excess of 50,000 users, 450,000+ compliance documents relating to buildings have been uploaded to date, Online uptake: 2014: 88.4%, 2015: 99.0%, 2016: 99.84%

Development

Design

The concept of this shared service was generated by the Inspectorate Division of Fingal County Council as a streamlining initiative. The Inspectorate Division's function is oversight and enforcement of compliance with Built Environment Legislation.

A process mapping exercise undertaken by the division staff revealed inefficiencies in data management, recovery, duplication and significant time-lags in data-sets.

Staff which should be deployed to onsite inspections were spending much time on paperwork, i.e. inefficient use of scarce resources.

From a public user perspective, manual counter transactions and processing was also inefficient and not conducive to good business practices.

A survey of the other 33 BCAs revealed similar problems.

A Shared Services Integrated Inspectorate project was initiated to provide for the development of a model template for built environment inspections with a strong basis in electronic data management. This would enable BCAs to set up and populate the system allowing application of a random and risk-based management regime of administration and compliance, within the range of Building Legislation.

A Business Plan was prepared and presented to the DHPCLG and the LGMA for collaboration, approval and partnership in the progression of the project.

This robust Business Plan was accepted. Design time: 3 month(s)

Testing

- Continuous communication with user groups through media, professional journals, meetings, seminars, workshops, demonstrations contributed to group/crowd-design (excess of 12,000 people across the Sector participated) Simplicity, ease of use and accessibility were key requirements identified from this consultative work.
- User group testing of the designs and IT deployment throughout the project was a critical success factor for this project.
- Aligning user experience to everyday applications i.e. buying online, application processes, searches etc.
- The "Open Source" solution facilitates agile management and incremental building of the project without license limitations etc.
- The innovative approach to the system design proposed a separated front-end (Drupal) which collects the information and a back-end (CRM) which processes the Building Control information.
- The front-end site hosted by the LGMA is located within the www.localgov.ie website as a national Local Authority service. This system design approach provides the capacity for further forms-based submissions/applications services to be developed and added to the platform in the future.
- The central hosting of the system on the LGMA shared services infrastructure provides the project team with the ability to build and implement system elements quickly.
- The system also has the advantage of the backup and disaster recovery services provided by the LGMA.

Testing time: 2 month(s)

Implementation

Tools used:

- Oversight is provided by a Project Board of Industry Stakeholders who report to the CCMA (The 31 Local Authorities Chief Executive Officers Association), LGMA and PSROG (Public Service Reform Oversight Group).
- A Steering Group reports to the Board and oversees User Working Groups who develop the processes and design i.e. group-design
- The project is managed by a project team under the direction of the project manager.
- Communication is via meetings, Skype, Hangouts, messaging, telephone and email; Meetings of the project team are scheduled for twice a week.
- Agile and PRIME are the main project management tools.
- VISIO process mapping tool.
- The project was initiated in Project-Vision where master processes and Business Plan are managed and updated.
- Data-directories and codes are managed through a GitHub
- The project is designed, built, tested and deployed incrementally, with four open source developers in four countries; open-source Trello dashboards and the Basecamp project management tool are used to manage the tasks for individual modules. These allow the project team's continuous oversight and intervention.
- Individual components are developed in modules using open source CRM (back-end system) and DRUPAL (front-end system), which can be built independently of each other, facilitating a more flexible, less-complex, scalable and easily searchable system.

Resources used:

- A costing model with an annual Fixed charge of €4000 and an Activity charge of €15 per notice submitted (approximately 8000 annually) was agreed with the 31 Local Authorities -€244,000 per annum.
- The DHPCLG grant aided €150,000 to initiate the development.
- 3 staff: a Project Manager, IT and Compliance Support are seconded to complete the project from the Local Authority Sector (approx. €260,000 includes full cost).
- The cost model is to provide for a self-financing Centre of Excellence for strategic oversight of building in Ireland.
- Commencement Notices and Completion Certificates are now fully enabled with approximately 19,000 Commencement notices and 450,000 accompanying documentation uploaded to the system.
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- The project will be fully self-financing when all 30,000 building control statutory forms are enabled online i.e. Fire Safety Certificates, the Disability Access Certificates and the Relaxation and Dispensation applications. These are now in development with a delivery date of May 2017.
- The projected income when fully complete will be approximately €570,000 which will support the staff, hosting, maintenance, operations, and future development costs in a Centre of Excellence, which will be hosted in a Lead Local Authority.
- This cost will be approximately 2-3% of projected Building Control income for the 31 Local Authorities.

Implementation time: 2 year(s) 6 month(s)

Diffusion

- The piloting of BCMS as a centralised IT enabler to improve Building Control Administration has been a proven success.
 - Real-time Data Analytics to inform decisions
 - Project Assessment to inform risk
 - Increased use of IT systems to assist Building Control staff
 - Improved consistency nationally
 - Seamless production of KPI's
 - A Building Control System for the 21st Century
 - The partnership approach adopted for this project has facilitated both the DHPCLG and LGMA officials to identify areas where the BCMS may be extended:
 - This has led to the roll-out of similar systems to facilitate Planning administration, which have already commenced (DHPCLG & LGMA).
 - To assist in the implementation of the Government's Action Plan for Housing and Homelessness, e.g., optimising use of the BCMS has been identified as a key component to communicating Ireland's economic recovery in relation to new build residential housing.
 - The BCMS also gathers non statutory information enabling real-time construction activity statistics to be generated in combination with GSI mapping and to inform policy making.
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Challenges and solutions

- DHPCLG provided initial funding for the system. The biggest logistical challenge was to ensure that a working system was in place in a 4-month timeframe to coincide with the introduction of new Building Control Regulations (01 March 2014).
 - Using open source technology made the system very flexible for modules to be developed in parallel, to add modules and integrate with other web-based systems e.g. HAG, Planning.
 - SugarCRM puts the individual at the centre of the solution and Drupal- a Content Management Framework (CMF) enables the build of a Contact Management System (CMS) tailored specifically Building Control needs.
 - Working with 31 different BCAs, building professionals, developers and owners to achieve common purpose required continuous communication and collaboration.
 - Working with 4 developers in 4 different European countries on a live system and deploying updates with minimal interruption requires very tight project management controls-iterative design and incremental building.
 - Having training available in the form of training manuals, updated FAQs, a help desk and in-house training for each deployment was a challenge.
 - Ensuring that all developers, including LGMA networks are synchronised in their development processes for deployments.
 - Ensuring a tight but flexible specification bases on functionality required.
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Partnerships

Local Government Management Agency; BCMS Project Board

Other Public Sector, Private sector

The delivery of the BCMS resulted from the successful collaboration and partnership between the lead Local Authority, Fingal County Council and the Open Source Team in the LGMA.

An important factor in the project success was the participation of County and City Council Chief Executives and the DHPCLG on the project board and also representatives of the industry partners such as the Construction Industry Federation, Engineers Ireland, Royal Institute of Architects and the Society of Chartered Surveys of Ireland, who have representation on the Project Board. We also saw all users as stakeholders who told us, via consultation, what they needed from the new system.

On March 1st 2014 a simple online system was launched that allowed submission of an online form and upload documents, with no intelligence built into the form. This was scaled up and functionality continues to be added over time.

Lessons Learned

Lessons Learned

- By adopting collaborative engagement with industry and public service bodies, efficiencies can be made. In tandem these exchanges facilitated implementation and online take-up.
 - Working with various stakeholders, such as the customers who have to make submissions or the public sector legislators to achieve common ground i.e. a culture of compliance for health and safety in or about buildings to ensure consumer satisfaction, is important. This extends both design and ownership of the system to all.
 - Virtual teamwork with the developers using open source project management tools and task dashboards - constant communication between them all is essential.
 - Process design and cutting out waste (especially over-processing), was an important aspect of the project.
 - Don't over promise and keep within the project scope. Keep it simple. Manage by exception is important in IT projects. Preparing FAQs and mock-ups of what the system will do proved beneficial.
 - Have UAT-user acceptance testing readily available for a small core user group and test to break
 - Back-ups and Disaster Recovery are important.
 - Keeping in mind the expectation by users that all systems must now be 24/7
 - Flexible and adaptive teams are important. - This worked very well for the BCMS team and a lot of effort was put into teamwork.
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Conditions for success

- Key to success of the project was engagement and collaboration, with both internal and external Stakeholders who included Building Control Authorities (BCAs-officers and Administrators), Chief Fire Officers Association (CFOA), Professions Engineers Ireland (EI), Royal Institute of Architects of Ireland (RIAI), Society of Chartered Surveyors of Ireland (SCSI), Irish Building Control Institute (IBCI), Construction Industry Association (CIF), County and City managers Association (CCMA), Housing Agency.
 - Extensive research and planning - A comprehensive survey of existing arrangements and systems in each Building Control Authority was carried out.
 - Consultation and communication with stakeholders - workshops were facilitated for all stakeholders; presentations were made at numerous conferences/ seminars/ training sessions. A series of frequently asked questions was collated and published by the team.
 - Collaborative approach to system design - As the BCMS evolved, system users input was actively sought i.e. the system evolved through collaborative learning and facilitating "crowd design" input or harnessing the "wisdom of the crowd".
 - Making effective use of project management processes helped to ensure the synchronisation of development and deployment stages of the project.
 - Employing open source technologies allowed for the development of a highly flexible and adaptable system.
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Other information

The system will be specifically designed to cater for the new Building Control regulations, but is sufficiently responsive and flexible to allow for ease of amendment to cater for possible future changes in regulation or business process.

It is a unified approach to Building Control driven by the DHPCLG, LAs and industry to improve the quality of buildings nationwide.

It provides transparency through web-based register and data analytics. The project team were very aware of providing a system which responded to customer needs; the key to the success in the adoption of the system by the industry was the collaborative approach to the system design.

The project oversight embraces all the stakeholders, regulators, government, construction industry, owners and professions i.e. users. Shared resources, standardised processes and professional networks form important aspects of the project-in excess of 10,000 queries have been clarified by the team through seminars/training/conferences reached approximately 12,000 people.