Research Roadmap Summary

Clients and Users in Construction

International Council for Research and Innovation in Building and Construction
CLIENTS AND USERS IN CONSTRUCTION RESEARCH ROADMAP

SUMMARY

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EXECUTIVE SUMMARY

This research roadmap is intended to establish the key issues in the field of clients and users in construction in order to provide the international focus of activity and lead the research agendas for agencies around the world. It addresses six themes: 1) Conceptual framework, 2) State of the art, 3) Future scenario, 4) Development strategy, 5) R&D Contribution, and 6) R&D Agenda.

The conceptual framework develops four domains which give meaning to the internal operation of the client: 1) Business and Society where the client’s purpose is determined, 2) Business and Users where the organisation of the achievement is enacted, 3) Buildings and Society where the client’s building aspirations are regulated, and 4) the Construction Industry, which fulfils the building aspirations of the client.

The state-of-the-art gives a brief overview of national client associations, international networks and national reform programs as well as various CIB permanent working commissions and temporary task groups. Current activities can be placed in three main R&D areas: agency dealing with roles and responsibilities, governance dealing with processes and mechanisms, and innovation dealing with change and continuity.

The roadmap presents a future scenario where clients and users are working together across sectors, building types and countries on a shared agenda to improve their environments, buildings in use and delivery of buildings. In this they are an active part of R&D activities to deliver buildings that enhance core businesses/services and the environment and as such are part of developing a greater social appreciation of environments, buildings and building delivery (including employment and product innovation).

In order to achieve this, a development strategy is presented which works in the broadest arena of building client and user types with a focus on themes of importance to practice. The development vehicles include close research practice collaboration working through case studies. The work is differentiated by its international comparative work on the heterogeneous activities of clients but also on a willingness to think outside the box. The activities seek funding through international agencies such as the UN and the EU alongside support from national programmes and individual client activities. The activities will be staged firstly from initiating CIB working commission conferences, then through local projects working together and reporting to a wider forum. Additional opportunities will be
sought through educational programmes that improve the understanding of the importance of clients in business, society, the environment and in construction.

The divergence among clients and users as well as the variety of building types set in different national institutional and construction contexts requires managing many divergent and heterogeneous projects rather than one overarching programme of research and development. This will include:

1. Moving focus from supply and even demand to identifying client needs.
2. Putting in context and Integrating studies around the subject.
3. Theorising clients as own problematic area.
5. Identifying the connection between clients and users.
6. Determining how clients can intervene in wider construction and social systems during building

These actions commenced with the CUBES workshop (Clients and Users in Built Environment Spaces) held in Copenhagen in 2011. The CUBES workshop and the subsequent consultations crystallised a number of questions and issues within three main research areas of agency, governance and innovation, which may be addressed in future R&D activities.

The roadmap provides a toolkit for international coordinated engagement that is conceptually sound as well as practically relevant and useful. This will enable the development of a new way of working with clients’ agendas in order to assist them in managing their change process. The divergence and disagreement in this is acknowledged but for the first time there is a forum where this can be aired, debated and learned from to provide a concerted programme for change and improvement.

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**Full Research Roadmap Report Prepared By**

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CONCEPTUAL FRAMEWORK

Research into construction clients is in its infancy. Construction clients are multifarious and internally complex. Thus it is extremely difficult to present an overarching model of their world. This difficulty prevents research into improving the response of the industry to clients and into helping clients be more successful clients. As Boyd and Chinyio (2006) state: ‘building is not about building but about organisational development’ for the client. The concept of a construction client is not well defined as it is only given meaning by the client’s actions associated with initiating building or operating a physical facility. Clients do not immediately describe themselves with this term as it is the business or service that they are providing that gives them identity and consumes their attention. They use a facility as a means for conducting the business or service; thus, the facility is a tool or a technology for meeting a purpose and this gives buildings or facilities a secondary interest to the client. As the facility is secondary to clients’ purposes, what success means, as regards a facility, is bound up with the clients’ success as a business or service.

The roadmap establishes the conceptual framework using a composite of this surrounding work. It may be that future work will establish a more specific model. The framework is shown in Figure 1. Apart from the internal operation of the client, this framework identifies four key defining domains: 1) Business and Society where the client’s purpose is given meaning, 2) Business and Users where the organisation of the achievement is enacted, 3) Buildings and Society where the client’s building aspirations are regulated, and 4) the Construction Industry, which fulfils the building aspirations of the client.

Figure 1: A framework for research into clients and users. Source: Authors

Clients exist as a business within the wider environment of businesses and society. Clients can be distinguished by the nature of their business and the constitution of their organisation principally whether they are public (McKevitt and Lawton 1994) or private enterprises (Wilson 1948). In different places in the world, different businesses are undertaken under different constitutions
depending on the governance arrangement of the country and the prevailing political disposition (Bell and Hindmoor 2009). All clients have to experience a desire to building, which they see as developing their organisation for or within this environment of business and society. This development might be simply to increase capacity of production or service, it might be to undertake a new activity or it might be to improve an already performing activity. In all cases it is this sense of achievement within the environment of business and society, which drives them as a business and ultimately what drives them to building. This environment also defines the way economics of the client activity is calculated and also the economics of building (Warren 1993) making this an important discourse. This is sometimes confused as building itself adds assets to a client (Isaac 1996) inducing the client to view this as a driver to build and this may interfere with the functional reason for building. Thus, building is not just a cost but possibly an economic multiplier though it is a less fluid asset than money or stocks.

Set in this framework, the key conceptual areas include business management, public sector management (McKevitt and Lawton 1994), facilities management (Alexander 1996), real estate asset management (Isaac 1996; Peterson 2002), development planning and governance (Cullingworth and Nadin 2006; Bell and Hindmoor 2009), building procurement (Rowlinson and McDermott eds. 1999) and building supply chain management (London 2008). In order to describe the state-of-the-art in this composite universe of individual disciplines requires three cross cutting themes of agency, governance and innovation: 1) roles and responsibilities, 2) processes and mechanisms, and 3) change and continuity. Roles and responsibilities define the identity and the influences of the parties in and surrounding the client. Processes and mechanisms define how interactions take place between the parties and how these come together to create and manage buildings. Change and continuity defines the dynamic conditions of the client and the surrounding organisations set within the context, which might be local or global.
STATE OF THE ART

Client associations and networks for practitioners
A range of countries have established designated national associations or networks committed to address client and user issues in a general sense. This is not to say that other more locally based network does not exist e.g. in the German “Länder”, with a more narrow scope on e.g. social housing, or with a focus on property management and development. Most of the designated client organisations are located in the well-developed countries and more specifically in the Northern part of Europe.

Public policies and reform programs
A range of public policies and reform programs with an emphasis on clients – and less pronounced users – have been initiated on national and international scale. The main focus of most of these policies and programs is to stimulate innovation in construction, in particular within the areas of sustainability, performance improvement and building information modelling.

The role of procurement has also played a significant role within the United Nations system. Several handbooks on procurement have been produced and in particular the United Nations Office for Project Services (UNOPS) and the United Nations Environment Programme (UNEP) has issued various guidelines towards improved procurement, in particular sustainable procurement.

Main themes for research and development

Three main themes have been identified for research and development on agency, governance and innovation, which need to be addressed: 1) roles and responsibilities, 2) processes and mechanisms, and 3) change and continuity.

Agency: Roles and responsibilities
The major problem with regards to roles and responsibilities involves the belief whether clients can act independently to achieve their aim or whether they are always required to act in the way their environment expects them to act. The significance of this for practice is about how clients operate
and how they are able to change. In academic terms this is related to the classical debate on the relationship between agency and structure (Giddens 1984).

Put differently, do sociotechnical structures determine the behaviour of actors or are structures the result of human agency? Over time a range of different positions have evolved in sociology, philosophy etc. One main position is the structuralist position in which the agency of actors can largely be explained by reference to the socio-technical structures, which more or less determines what actors can do. In the opposite end of the scale, another position underlines the capacity of individual actors to determine the outcome of their actions. In between these two positions, a number of alternatives like constructivism (Berger & Luckmann 1966) try to find a more balanced position between the two.

**Governance: Processes and mechanisms**

The major problem with regard to processes and mechanism is how client organisations operate internally and collaborate with the external environment of suppliers, policy makers etc. Clients themselves are organisations but so are the bodies and agencies that surround them and who they supply. In academic terms, these issues of organisation, management, decision-making etc. is often referred to as governance.

Thus, the second research and development theme to be addressed is governance meaning the act of governing, which includes the rules, processes and mechanisms, and behaviour that affect the way powers are exercised. Governance is a multi-faceted concept, which typically takes place at different levels: project governance, corporate governance and regulatory governance, in particular for public clients and for urban developments. Good governance is often associated with openness, accountability, participation etc.

In construction, focus may be on the client's ability to handle the relationship with all stakeholders of the building, be they the owner, the customer, society or the building industry (IVA, 1997). As the interface between users and suppliers, the clients have a central role in developing the construction sector in to a demand-driven sector and providing a better user/client satisfaction.
Innovation: Change versus continuity

The third research theme for practice concerns how it is possible for organisations to change. In particular, how is it possible for clients to innovate themselves as well as to assist the construction industry. Innovation is generally considered to be the key driver of improved wealth and welfare. Again this involves not just clients themselves but the system of organisations surrounding clients. In academic terms this can be seen as socio-technical transition or the implementation of innovation. Thus, the third research and development theme to be addressed is innovation, or more generally speaking change versus continuity.

Several definitions of innovation, technological change, technical development etc. can be found in the literature. One of the more authorised definitions is provided by OECD in its Oslo Manual (OECD & Eurostat 2005). Compared to the two previous editions, the Oslo Manual now acknowledges four types of innovations: product, process, marketing and organisational innovations (OECD & Eurostat 2005). The third edition of the Oslo Manual on collecting and interpreting innovation data defines innovation as (OECD & Eurostat 2005: 46):

‘An innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations.’ (emphasis in original)

As Dodgson et al. (2002: 54-55) points out, analysts have dealt with four types of questions related to the nature of innovation activities, sources of innovation, innovation process and innovation systems. Within the demand-pull model, von Hippel (1986) has been highly influential in showing the importance of users in the development of new technologies. Von Hippel (1986: 791) has in particular introduced the concept of lead users:

“Lead users are users whose present strong needs will become general in a marketplace months or years in the future. Since lead users are familiar with conditions which lie in the future for most others, they can serve as a need-forecasting laboratory for marketing research. Moreover, since lead users often attempt to fill the need they experience, they can provide new product concept and design data as well.”
FUTURE SCENARIO

Buildings are long term assets and develop with the needs of economics and society. The future will see dramatic growth in the building stock of developing countries but with a steady growth in developed countries focussed on housing and regeneration. In this future scenario, clients and users will strive towards three main goals:

– Clients and users will work together across sectors, building types and countries on their shared agenda to improve their environments, buildings in use and delivery of buildings.
– Clients and users will be a part of R&D activities that sees buildings and the delivery of buildings as enhancing core businesses/services and the environment.
– Clients and users will be a part of developing a greater social appreciation of environments, buildings and building delivery (including employment and product innovation).

This means adopting and adapting to changes and challenges related to the four areas identified in the conceptual framework.

Business and society
The first area is Business and Society where the purpose of buildings is set economically, technologically and socially. One of the challenges that continue to exist is the design of buildings to facilitate their better use which supports the core business taking place in the building. The challenges from the financial crisis will continue with further pressure from globalisation of business, education, travel and leisure activities.
Buildings and society
The second area is Buildings and Society where the regulation of spatial activities is conducted and sets the agenda around such areas as conservation, sustainability, infrastructure and regeneration. In the mature developed economies, focus will move more and more to the regeneration of the existing building stock. Here the importance of sustainability (in particular energy savings/CO₂ reductions) and climate adaptation will increase as part of conversion or refurbishment of these buildings.

Business and users
The third area is Business and Users with its focus on the way buildings are used and experienced. Here there are developing challenges of usability and adaptability due to shifting demand. In addition there will be a growing importance of indoor environmental quality as associated with the wellbeing of building users. The emergence of generation Y (“why”) will increase the need to create stimulating learning environments and radically change the perception of work from being a space for activity rather than a place to go. This will increase the focus on mobile solutions rather than stationary facilities.

Construction industry
The fourth area is the Construction Industry, which forms part of the supply side. Major changes will occur in production systems and materials driven by enhanced design tools allowing new shapes and forms. Buildings will be funded using new financial instruments based on the leasing of assets which will require integrated procurement systems and collaborative practices. These will increasingly draw in clients and users into the innovation and process development in both the construction and materials supply industries.
DEVELOPMENT STRATEGY

The development strategy is based on the framework for strategic design by Hambrick & Fredrickson (2005) that requires answers to five questions (for an overview, see below):

- **Arenas**: Where will we be active?
- **Vehicles**: How will we get there?
- **Differentiators**: How will we win in the marketplace?
- **Staging**: What will be our speed and sequence of moves?
- **Economic logic**: How will we obtain our returns?

**Overview of R&D strategy. Source: Authors.**
CONTRIBUTIONS FROM RESEARCH

The contributions from Research and Development on clients and users rest on three core supporting arrangements:

– First, bring together the experience and expertise of researchers and practitioners, from within the CIB and other relevant associations, organisations and networks, in a purposeful, structured and productive engagement with each other.

– Second, develop, share and disseminate appropriate information, theories and practical processes with regard to successful client management in their interaction with the business/service world, with regulation, with building use and with building supply.

– Third, encourage and support new practical and research activities on clients, users, regulators and suppliers.

Users and clients play an important role in shaping: directly through interaction with the industry and indirectly through preferences, choices, behaviour etc. Thus, getting a better grasp of the aspirations, needs and behaviour of users and clients will offer an important new road for the industry to deliver value for money. Given the political attention towards clients and users, the time seems ripe to bring CIB into the forefront of this emerging field of research, development and training.
The study of clients is under-researched and is confused by the variety of positions surrounding the notion of clients. Clients are not unitary; they are amalgams of stakeholders. They are surrounded by different forces driving them to build. Every client, never mind client types, is different because of the different context of their business. Some high level contributions from R&D include:

1. Moving focus from supply and even demand to identifying client needs.
2. Putting in context and Integrating studies around the subject.
3. Theorising clients as own problematic area.
5. Identifying the connection between clients and users.
6. Determining how clients can intervene in wider construction and social systems during building.

On the other hand, clients have been asked to lead the industry in changing its approach and culture. Thus, clients are recommended to adopt innovative solutions and assist the industry in developing new methods whether through industrial manufacture or cooperative procurement. The client is presented with a dilemma whether to simply address its own short term concerns thus losing credibility or to accept its role to intervene in the wider construction and social system thus potentially becoming non-economic or nonviable.
RESEARCH & DEVELOPMENT AGENDA

Agency: Roles and responsibilities
This research theme raises a number of challenges with regard to clients and users in construction. To mention a few:

– Map the content and scale of clients’ and users’ value chains in various national and institutional contexts.
– Analyse how sociotechnical structures shape the roles and responsibilities of clients and users in construction.
– Develop a coherent model of what constitutes a client and a user under different structural conditions.

Governance: Processes and mechanisms
The governance research theme raises a number of Challenges:

– Analyse clients’ and users’ strategies, competencies and practices for procurement, management and use of built facilities in a life-cycle perspective.
– Assess different methods for involvement of users and stakeholders in decision-making processes on construction and operation.
– Understand the mechanisms behind successful/failed projects and why some tools etc. may be more appropriate than others.

Innovation: Change and continuity
The Innovation research theme raises a number of questions:

– How can clients and users act as change agents of the construction industry?
– How do clients use buildings as instruments of change within client organisations?
– How will new technologies like BIM impact on clients and users?
– How can clients and users support the move towards a sustainable future?