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Intelligent Buildings & the Bid Specification Process Landmark Research Study

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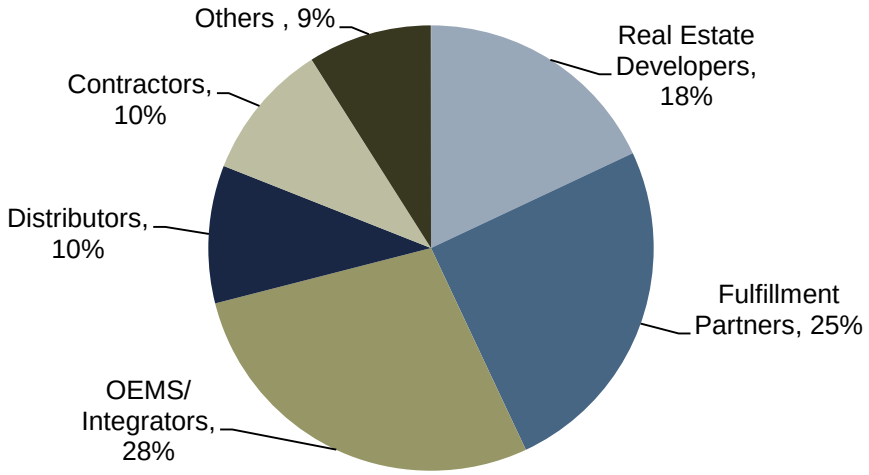
Key Research Objectives

- Evaluate the main aspects of the bid specification process
- Understand how decisions are made in the process and the role of key influencers in such decisions
- Determine the optimal way of working with various stakeholders involved in the process
- Create the right customer and partner awareness approaches to achieve better technology adoption
- Understand common goals and objectives that can be established for various participants to work cohesively for success
- Understand the changing dynamics of the industry and the impact on intelligent building solutions and services
- Create the right business approach to respond to changing demand
- Define opportunities and prospects for market participants

Methodology

The approach and methodology combined primary and secondary research. The primary research sample categorization included the following:



Fulfillment Partners include Consulting Spec Engineers/Design Build Firms/Architects/ESCOs
Others include CIOs, Associations, etc.

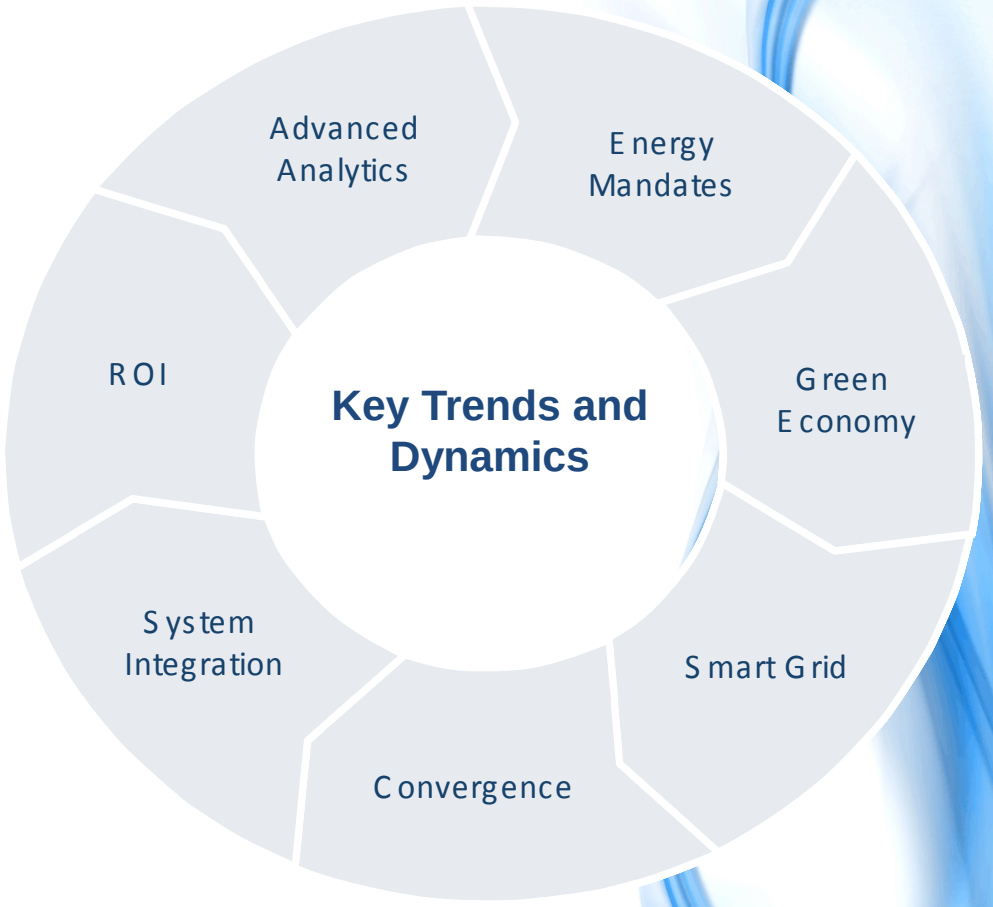
Total sample size: N=60

Industry Transition

- A gradual state of transition from conventional to intelligent buildings
- Consensus on fundamental principles:
  - Definition of intelligence
  - A buildings' intrinsic relationships with energy
  - Critical importance of energy efficiency, operational cost savings, and return on investment (ROI)
  - Policy impetus and energy mandates

New Challenges

- Incorporating non-conventional project partners
- Price Pressures
- Notion of single supplier
- Differentiating buyer from installer
- Technology silos



Bid Specification Methods

Design-bid-build
- Starts with the owner contracting the design process to a fulfillment partner
- No overlap of tasks
- Contracts with separate parties for design and construction

Design-build and Performance Contracts
- Single party for both the design and construction
- Overlap of tasks reduces delivery time
- Better adherence to specs

Construction Management (CM)*
- CM firm acts as overall advisor
- CM contracts third parties
- Guaranteed maximum price

- The end-user community considers these methods to be part of a well accepted structure.
- Methods allow them to maximize the value on what they spend.
- Methods also ensure that the involvement of right partners in execution and implementation is done in a justifiable manner.

**Also referred to as Project Management (PM)*

Challenges with Present Bid Specification Methods

Design-bid-build

- Takes longer to deliver, and increases the likelihood of change orders and delay claims
- Building owner/operator's limited visibility to actual construction/installation costs
- Accountability issues, owing to no single point of responsibility for project delivery

Design-build and Performance Contracts

- Leads to conflict of interest, with DB/CE and contractor being on the same team
- Although owner/operator is guaranteed construction/installation cost, these are non-competitive
- Involvement of owner/operator is only at the early stages of the process, with no impartial agent to represent owners' interests

Construction Management

- Leads to added costs to owner for hiring the CM/PM, paper work, and administrative time
- May lead to cheaper products and services to offset risks and additional costs
- Can cause conflict of interest, with one entity assuming multiple roles

Bid Specification Process Optimization

The following aspects need to be incorporated in the present bid and spec methods:

- **Opting for Objective Points Criteria - An objective evaluation criterion is required to ensure that product and technology selection is based on some quantification of actual benefits to the project/building.**
- **Role of Quality Surveyor/Advisor - Given the disconnect among various delivery partners in the bid spec processes, there is a critical need for autonomous supervision to ensure that processes are followed transparently and the correct choices are made in selection of products, technology and services.**
- **Create Scope for New Vendors - Creating scope for the inclusion of these smaller players is necessary, as it allows the building owner to take advantage of new innovative technology – at pricing that may not be available from larger vendors.**
- **Avoid Cost Thresholds - Removing this component could potentially help optimize the process and allow for the inclusion of more vendors and suppliers into the selection process.**
- **Mandate a Feedback Loop - Including this as a prescriptive requirement into the contractual process can offer valuable insights into technology performance, cost-benefit evaluation and establish their importance in intelligent building projects.**
- **Integrated Value Chain and Delivery Approaches - This will prompt suppliers and service providers to collaborate and offer the most optimal solution, while capitalizing on collective bargaining capabilities to influence selection.**

Project Case Studies

Project/Arranger	Details
Chandler Regional Medical Center, Chandler, Arizona, United States *Arranged by Dignity Health Org. and Siemens Industry, Inc.*	• Healthcare facility, Arizona • Demand flow optimization process • Pre-construction services for integrated design delivery
Bell Trinity Tower, Toronto, Ontario, Canada *Arranged by Northam Realty Advisors*	• Bell Trinity Tower, Toronto • Commercial multi-tenant facility • Design build bid spec process • Chilled water plant replacement
Ardo Food Storage and Distribution, Kent, United Kingdom *Arranged by Digital Lumens, Titchfield Group, and Ardo*	• Food cold storage warehouse and distribution facility - renovation and retrofit project, U.K. • Lighting systems replacements with LED systems • Design build bid and spec approach
Kwantlen University, Cloverdale, British Columbia, Canada *Arranged by Kwantlen Group, Delta Controls and ESC Automation*	• Institutional facility – combination of new and renovation projects • Integrated design delivery approach via adherence to performance specs

Conclusions

- **The distinctively disjointed and transactional model leads to low technology adoption**
- **Collaboration is required between fulfillment partners, vendors and suppliers**

Technology Adoption

- Integrated and open solutions
- Scalable solutions
- Facilitate bundled options for competitive advantages
- Demonstrate energy use reductions and other environmental metrics

Positioning

- Networked delivery model
- Value-chain alignment
- Marketing messages
- Turnkey provider
- Integrated design approach

End User Issues

- Needs assessments
- Open and scalable solutions
- Longer engagement cycles
- Consultative approaches
- Demonstrate results/create awareness

Strategic Partnerships

- Open innovations
- Collaborative design approaches
- Collaborative technology developement
- Value-chain partnerships
- Alliances with ecosystems partners