



Key Problems:
Unpredictable Projects.
Unprofitable Firms

Causes
Enormous amounts of Information, but NO DATA

Solutions
Building Information Models & Focus on DATA

Design

Conventional Tools & Techniques

Design
Drawings
Impressions
Physical Models

Design Data
Cryptic
Un-computable

Designer uncertainty - slow design process
Client uncertainty
Changes: many + late

Inefficient design production
Errors, re-work.
Resource wastage
Inefficient operations

Unprofitable design firms
Unprofitable contractors

BIM & Data Based Methods

Design
Explicit, non-cryptic outputs
Computer-generated, therefore fully computable

Rapid resolution of concept design.
Early client understanding

Complete, coordinated multi-disciplinary design - early.

Highly efficient
Maximum high-end value added

Highly profitable design firms

Procurement

Conventional Tools & Techniques

Scope definition
BoQ, Cost Plan
Activity Schedules

Procurement Data
Unsystematic
Unverifiable

Lowest Price NOT Selected
Best Performer NOT Selected

Excessive basic cost
Hunt for claims
Conflict and mistrust
No effective barriers to entry
Profitability eroded

Inefficient operations
Unfit survive.
Market undermined

Unprofitable contractors
Unprofitable contractors

BIM & Data Based Methods

Procurement
Automatic, component level schedules.
Work scope completely transparent and verifiable
Highly effective procurement process.

Lowest cost and best performer selected every time.

Fewer claims; greater incentive to co-operate
Only the best survive. Market dominated by best performers. Profitability secured.

Skills, knowledge and data barriers to entry

Highly profitable contractors

Construction

Conventional Tools & Techniques

Control Tools
Cost Control
Change Control
Planning

Management Data
Subjective
Ambiguous

Incorrect Cost & Schedule Targets
Inaccurate Progress Assessment

Unpredictable Outcomes

Low Contractor Margins
Dissatisfied, reluctant clients
Suppressed demand

Unprofitable contractors

BIM & Data Based Methods

Construction
Scopes derived directly from design systems
Production rates from historic performance data
Unified cost, planning and change control

Systematically accurate targets and progress assessment

Accurately predictable outcomes

Higher margins. Satisfied clients, increased demand

Highly profitable contractors

The EPOS Analogy.

- >Retail Data: vast quantities of precisely specified small, simple data entities.
- >Unique Product Code (UPC) provides key data management framework.
- >Many different ways of collecting and analysing data.
- >Data substitutes completely for subjective judgement.
- >Previously powerless retailers – creators of EPOS - now dominate sector supply chains.

Construction Industry Analysis
Key Problems - Possible Solutions

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