

# INTEGRATED BUILDING PRACTICE & TECHNOLOGY

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Do we need change in the  
construction industry?



# A Very Brief History of Design & Construction

Collaboration & Complexity

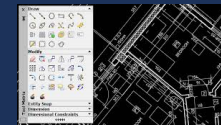
Improved data & process

Better documentation



BIM

Document it!



CADD

Public design process



Construction Documents

Listen to the affluent!



Architect

Listen to the king!



Master Builder

Talk to few!



King's Builder

Just do it!



Early Shelter Builder



Cave Dweller

Time

- *Economist* article from 2000 identifies 30% **waste in the US construction industry**;
- a NIST study from 2004 targets **lack of** AEC software **interoperability** as costing the industry \$15.8B annually;
- US Bureau of Labor Statistics study shows construction alone, out of all non-farm industries, as **decreasing in productivity** since 1964, while all other non-farm industries have increased productivity by over 200% during the same period.



- The United Kingdom's Office of Government Commerce (UKOGC) estimates that savings of up to 30% in the cost of construction can be achieved where integrated teams promote continuous improvement.
- UKOGC further estimates that single projects employing integrated supply teams can achieve savings of 2-10% in the cost of construction.

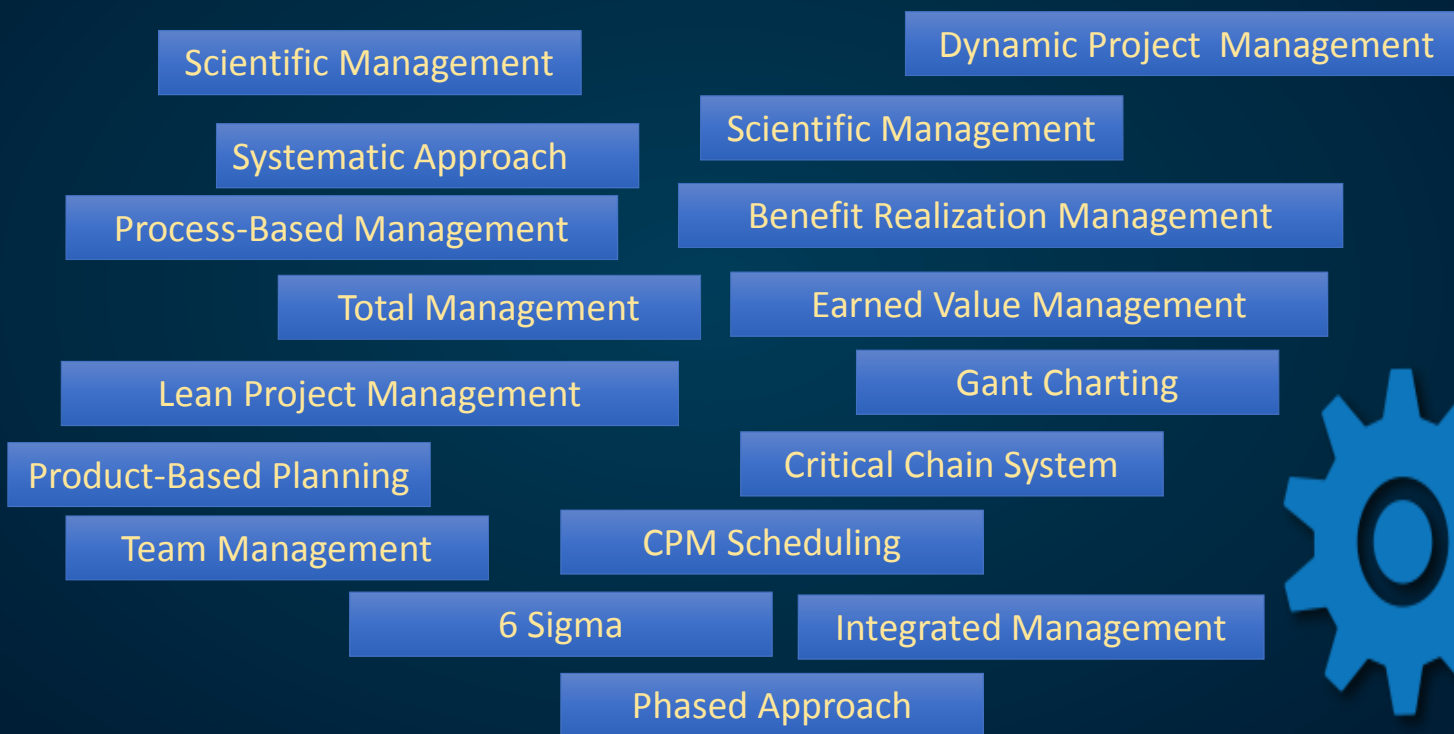
(Office of Government Commerce, Achieving Excellence in Construction Procurement Guide, Vol. 5, at p. 6 (2007) [www.ogc.gov.uk](http://www.ogc.gov.uk))



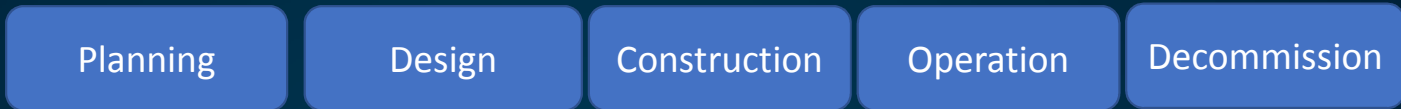
# Factors impacting building design and construction success:



# In Search of Best Management System



# Traditional Vs. Integrated Approach



Traditional Process	Integrated Process
Compartmented approach	System approach
Value of upfront cost	Value of life-cycle costs
Plan as you go	Comprehensive process plan
Fewer people make decision	Collaboration between all stakeholders
Build now, maintain later	Build with building life cycle in mind
Frequent expensive modification	More coordinated error free process





- What are the components of the best process to achieve our project goals?
- What is the best practice for collaboration between stakeholders?
- What technologies are there to support the best practice?

