Part B:
Potential Benefits
from
Integrated Approach

U.S. Department of Transportation Federal Highway Administration

Benefits:

In general, the benefits of an integrated system come from accomplishing tasks better, faster and more economically.

Description	Better	Faster	Econo-mical
Avoid error-prone manual data re-entry	X	X	
Avoid errors due to inconsistent information	X		X
Leverage design data into construction and beyond	X	X	X
Can avoid physical pre-assembly		X	X
Accelerated construction via prefabrication	X	X	X

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Types of Benefits: Classification

- Tangible Benefits
- Non-Tangible Benefits
- Quasi-Tangible Benefits

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Types of Benefits:
Tangible Benefits

- eBidding
- eDocument transfer: Computer aided fabrication
- eRFI's : Less RFIs and 50-60% reduction in turnaround time
- On-line collaboration and project management
- Faster project delivery: 15 – 25% saving in time, estimated
- Cost savings: 5 – 15% savings in total costs, estimated

Types of Benefits:
Non-Tangible Benefits

- Process and workflow re-engineering: Facilitates use of automation
- Supply-chain integration: Faster information flow and materials procurement
- Risk management and claims mitigation: Improved data quality and storage

Types of Benefits:
Quasi-Tangible Benefits

- Improved data quality and availability,
- Reduced rework
- Complete audit trail
- Reduced data entry and improved information management
- Improved timely design and construction decision making
- Improved quality of construction

Benefits:
Example - eRFI's

- Requests and responses stored at a central location, in a structured, searchable format.
- Web-based and available to project participants - no faxing, no illegible hand writing, no spreadsheets and binders for RFI's.
- Timely responses – unified tracking and no misrouting

Benefits:
Example – Steel fabrication

- Current practice using 2D paper drawings. CAM programmers:
  1. Read the drawing.
  2. Interpret the drawing, and then,
  3. Program the machine to cut and drill as reflected in the drawing.
- Integrated 3D modeling approach:
  1. Reading and interpreting is eliminated.
  2. Model is imported into the programming software.
- Programmer's work is greatly reduced and accuracy is improved.