The Future is Now: Digital Supply Chains Drive Profitability, Efficiency and Visibility
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Graybar Electric

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To earn these hours you must:
– Have your badge scanned in and out at the door
– Attend 90% of this presentation
– Fill out the online evaluation for this session: www.necanet.org/NNSurvey2017
Disruption

**Primary Forces:**
- Technology
- Demographics
- Globalization

**Megatrends:**
- Industries being redefined
- Customers have more power
- “Smart” transformation
- Nature of work is changing
- Increased focus on behavior
- Shift toward urbanization
- Emphasis on sustainability

Source: EY “The Upside of Disruption: Megatrends Shaping 2016 and Beyond”

**Industry Disruption**
- Skilled labor shortages
- New construction technologies
- Advanced building materials
- Sustainability
- Digital transformation
Fault Lines

- Customer needs
- Performance metrics
- Industry position
- Business model
- Talent and capabilities

Harvard Business Review, December 2015: “Knowing When to Reinvent”

25% REDUNDANCIES IN THE CHANNEL

Facing the Forces of Change (25% of costs)
Supply Chain Digitalization

Defining Digital Supply Chain

- Boeing

Supply Chain Digitalization
What Do Customers Want?

- Improved Productivity
- Profit
- Reduced Cost
- Increased Sales
- Improved Productivity

Technology Enhancement

- Big Data
- Mobile
- Internet of Things
Physical Digital

Creating new connections from physical to digital and back

Electrical Construction

Digital Supply Chain

An organized technology and analytics driven network that enhances human performance by integrating each organization’s strengths, resources, and strategies for profitable growth throughout.
Survey Results

Use Smart Devices – 93%
Leverage the Cloud – 69%
Mobile/Online Ordering – 57%
BIM – 56%
Electronic Tool Tracking – 51%
Robotic Total Stations – 23%
Digital Inventory Mgmt. – 11%
BIM Supply-Chain Utilization – 8%

IT Spend by Industry

Gartner: IT Key Metrics Data 2014

% of Annual Revenue IT spend
Supply Chain Digitalization

4 Key Questions for Your Supply Chain

1. How can we create a competitive advantage?

2. How will we understand and serve each other better?

3. How do we become easier to do business with?

4. How will we generate demand and profitable growth?
1. Estimating Software
2. Accounting Software
3. Industry Apps
4. Scheduling Software
5. ERP
6. Cloud-Based Communications
7. BIM

Contractor Digital Standards

1. ERP Systems
2. Pricing Software
3. Apps/Web Services for Customers
4. CRM
5. Cloud-Based Communications
6. VoIP

Distributor Digital Standards
Supplier Digital Standards

Driving Innovation

Technology Enhancements

Manual

Digital Supply Chain
Technology Enhancements

Things we are doing today that you may know about...

- Order Entry
- Shipment Tracking
- Invoices
- Products Specs
- Quotes
Mobile

- Order Entry
- Shipment Tracking
- Invoices
- Products Specs
- Quotes

Graybar SmartStock
VoIP Extended Customer Service Hours

Extended Customer Service Hours:

- Monday to Friday
  6:00 a.m. – 10:00 p.m. CST
- Saturday and Sunday
  8:00 a.m. – 5:00 p.m. CST

Service Truck Inventory Management
Pre-Fab in Distributor Facilities...
Utilizing space, transportation, ERP, etc.

Cloud-Shared Supply Chain Sites

Share and organize

- Documents
- Notes
- Schedules & Releasing
- Images/Videos
- Tasks
Bussmann Series Toolbox

- Simple, one-stop shop for Bussmann series tools
- Responsive design is user-friendly regardless of user's device
- One-click access into each tool

http://toolbox.bussmann.com

Bussmann Series Product Mobile App

Bussmann series FC\textsuperscript{2} mobile app quickly delivers available fault current calculations in the palm of your hand

- Makes point-to-point calculations easy
- Calculate three-phase and single-phase faults
- Create and e-mail NEC\textsuperscript{®} 110.24 compliant labels and one-line diagrams
- Fuse Sizing Guide assists with fuse and conductor sizing; iPhone Android
- Available for Apple and Android mobile devices plus in web-based version

2014 Engineering Choice Awards
NEC® 110.24 Compliant Label

Example of printed label for compliance with equipment marking requirements.

Fuse Sizing Guide

1. Tap on Fuse Sizing Diagram
2. Tap on the circuit to protect
3. Review each section and the fuse suggestions for the selected location
Technology Enhancements

Things we are doing today that you may **not** know about…
New QuickConvert

Graybar QuickConvert automates the process of manually entering sales orders after receiving customer purchase orders via email or other means, typically as PDFs.
BIM and Pre-Fab Material Tracking

Labels Have Many Uses

- Product Information
- Haz-Mat MSDS
- Blue-Print Drawings
- Pre-Fab ID
- Project Data
- Future Uses…
Process Mapping

EC – Graybar Procurement Process

When is Your Supply Chain Engaged?
Supply Chain Waste Walks

• What is a Waste Walk?
  – Types of waste
    • Material-Capital-Time-Gross Profit

• Why do a Waste Walk?
  – What challenges do you face in managing your business that Graybar impacts?
  – If you had a resource that could fix anything, what would you fix?

• What does a Waste Walk cost?
  – Nothing

Greatest Digital Opportunity

BIM
<table>
<thead>
<tr>
<th>Business Benefits of BIM</th>
<th>59%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost efficiencies, driving down project costs</td>
<td>56%</td>
</tr>
<tr>
<td>Improvements in client outcomes, understanding and deliverables</td>
<td>51%</td>
</tr>
<tr>
<td>Decreasing project delivery times/schedules, through collaboration</td>
<td>48%</td>
</tr>
<tr>
<td>Increased profitability, through greater insight and fewer changes</td>
<td>41%</td>
</tr>
<tr>
<td>BIM practices and processes helped reduce carbon emissions</td>
<td></td>
</tr>
</tbody>
</table>
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74% of contractors report a positive ROI using BIM

41% of contractors report BIM reduced final construction costs
Source: Design Data & Analytics 2015

67% of contractors report improved productivity

Contractors are moving to BIM faster than engineers

BIM

- General Contractor BIM Productivity Data
  - Example #1

Increased Productivity (work-in-place / man-hour)

- Mechanical: +12%
- Electrical: +5%
- Fire Protection: +30%

BIM/LAS Results
Average Trade Productivity Benefit:
- 12% increase in Mechanical
- 5% increase in Electrical
- 36% increase in Fire Protection
Building Information Modeling Market

**Evolution of Specifier needs of BIM**

**Today**
- Digital design of buildings using BIM is a growing trend for Architect, Engineering and Construction (AEC)
- Mandatory in some countries for government projects
- Building owners and regulations are driving building lifecycle costs and environmental footprint into design
- Customers demand BIM models for physically large electrical items and common and visible items

**In 10 Years**
- Virtually all AEC firms have standardized building designs in BIM, including electrical
- BIM standards and processes well defined and understood by market participants
- The design & build of buildings has been transformed worldwide through digitization and BIM

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**Benefits of BIM**

- Save time on designs
- Decrease project costs
- Improves co-ordination and collaboration
- Minimizes risk
- Helps to easily maintain building lifecycle
BIM Needs

Content is KING

LayoutFAST Revit Plug In
LayoutFAST: Electrical Design Revit Plug In

- Revit (BIM)
- AutoCAD
- Desktop Stand

All Web Browsers
All Smartphones
All Tablets

Coming Soon
- Bentley BIM
- Microstation
- ArchiCAD
- SketchUp
LayoutFAST: Electrical Design Revit Plug In

- Excellent product selector
- Provides accurate Product Models (3D shapes) for securing space in the model
- Spec/Cut sheets
- BOM??

Developing a BOM... use distribution
- LayoutFast only provides list price
- Provide the BOM to Graybar for project pricing
- If you need help, reach out to a Graybar Gear BDM
"Electrical Equipment Schedule"

"Family and Type" | "Electrical Data" | "Panel Name" | "Cost"
---|---|---|---
"M_Circuit Breaker Switchboard: 762mmx905mm" | 480 V/3-0 VA | "SB" | $9120.00
"M_Dry Type Transformer - 600-286Y/120 - NEMA Type 3R; 25 kVA" | 480 V/3-0 VA | "TP-12" | $9048.00
"M_Lighting and Appliance Panelboard - 208Y/120 - Surface: 100 A" | 208 V/3-0 VA | "PP-14" | $775.00
"M_Lighting and Appliance Panelboard - 480V MCB - Surface: 100 A" | 480 V/3-0 VA | "LP-1B" | $1065.00
"M_Lighting and Appliance Panelboard - 480V MCB - Surface: 400 A" | 480 V/3-0 VA | "MOP-1" | $1549.00

"Grand total: 6" | Total Cost: "$14582.00"

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LayoutFAST: Distribution Uses
This process can be followed with any pdf floor plan

Converted to 3D model with fixtures installed
We can add value further by providing **Photometric Lighting Analysis**. PDF floor plan can then be converted to a 3D model.

**3D Model**

*End Result*

We can alter configurations to provide the optimal solution.
Distributors can then provide Renderings of Electric Lighting Systems using fixtures that they supplied.

PDF floor plan can then be converted to a 3D model.

**BIM**

PRE-FAB  
JOB SITE
Technology Enhancements

• Things we are working on based on collaboration in the supply chain…

Coming Soon: ProjectFAST

• Generate Riser or One-Line Diagram
• Full project collaboration based on 3D models
Coming Soon: ProjectFAST

Bussmann series digital assets

Interactive FAQs

- Bussmann series interactive FAQ
- Enter your question here

Design Center Tools – CAD Downloads

- 2D and 3D CAD drawings
  - Various products

BIM Modeling

- Quik-Spec™ Coordination Panelboard
- Power Module™ Elevator Disconnect Switch & Panel
- BIM Modeling instructions are based on Revit® version 2011

Installation Videos

- Power Module™ Elevator Disconnect Switch & Panel
BIM and Pre-Fab Material Tracking

Create Value with Supply Chain Solutions

https://youtu.be/_sQfu5-5g7I
Next Steps

Up Next: Interactive Break in the Cibolo Canyon Ballroom
- Eat This Not That
- The Airplane Stretch Break
- Open Q & A Session: Apps
- Get to Know Your IPad Inside & Out

Don’t forget to fill out the online evaluation at www.necanet.org/NNSurvey2017