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# **Differentiating with Data**

# **IndustryWeek**

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## **Differentiating with Data**

December 4, 2014

# **IndustryWeek**



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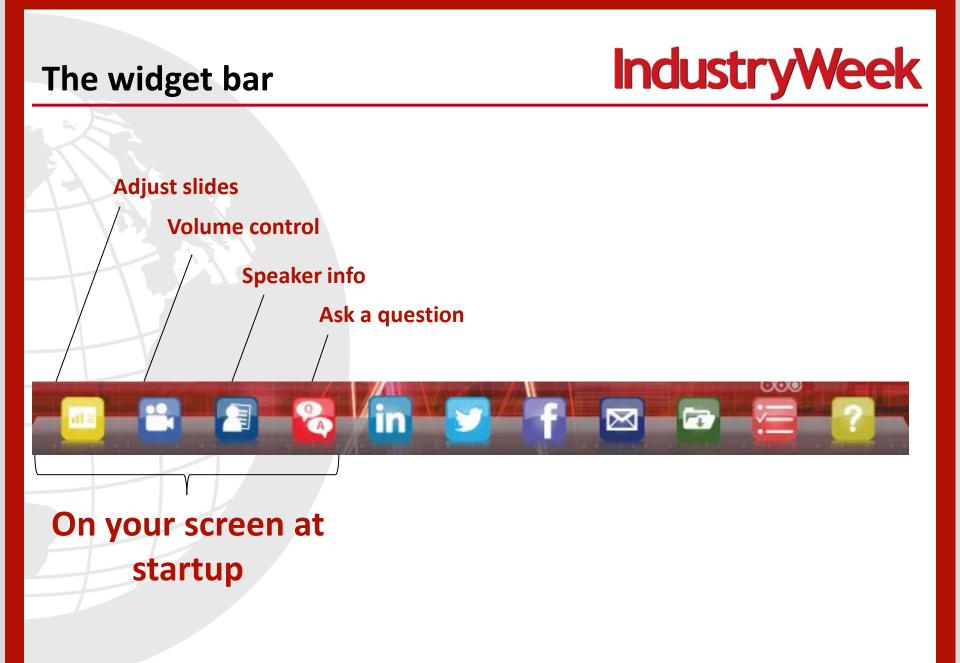
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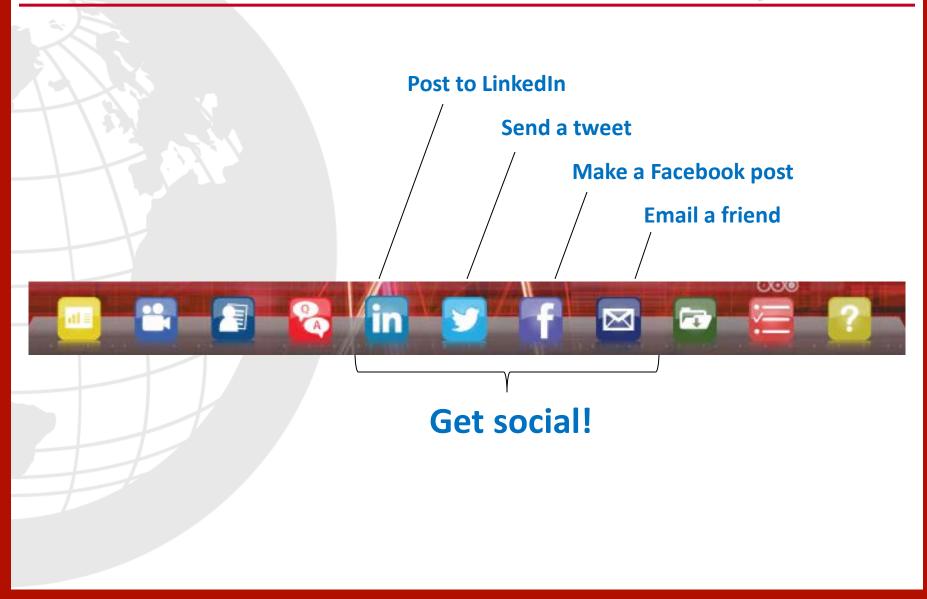
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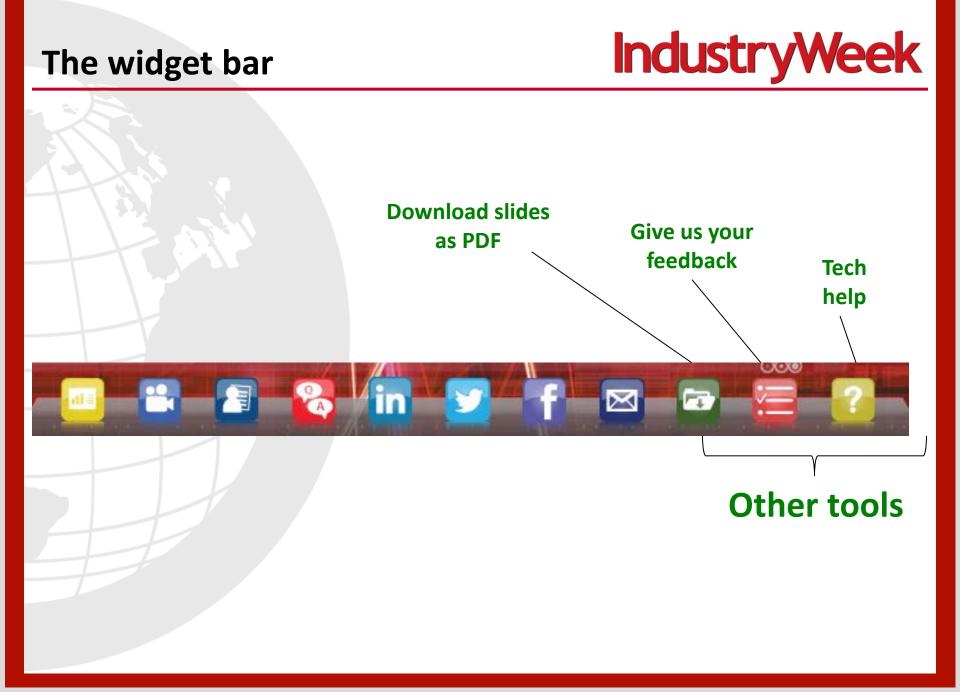
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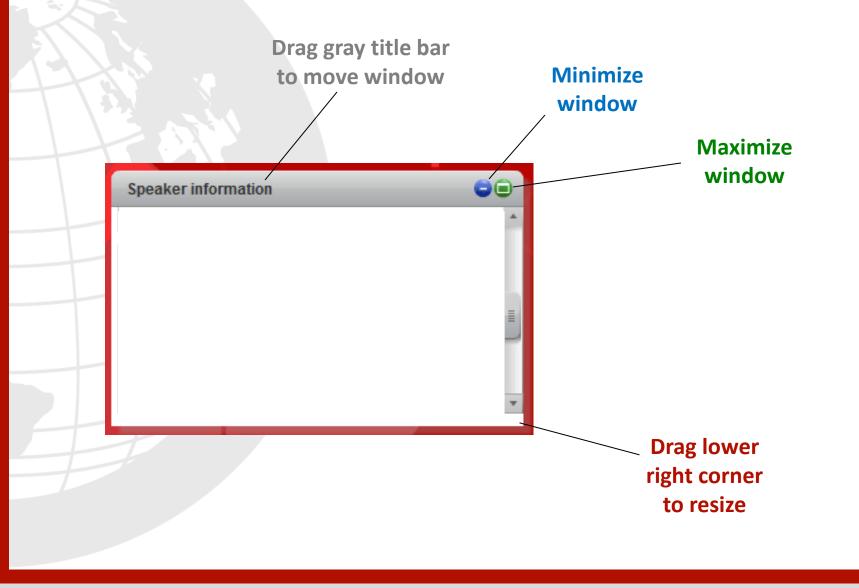
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# **Bridging the Gap**

Three Keys to Competitiveness and Sustainable Profits



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#### Bridging the Gap

- New manufacturing landscape requires new strategies
- Innovation
- Talent
- Process improvement
- Getting started



#### Manufacturing is rebounding



- Do you remember how to manage in a strong economy?
  - After years of cost controls
  - After years of workforce and talent reductions ...
  - After years of delayed investments.





#### Manufacturing numbers don't lie



- 1. Bureau of Economic Analysis, April 25, 2014.
- 2. Bureau of Economic Analysis, April 25, 2014.
- 3. Bureau of Labor Statistics, Nov. 7, 2014.

- Manufacturing real valueadded reached \$2.08 trillion in 2013, up 3.1% vs. 2012.<sup>1</sup>
- Nondurable-goods manufacturing, largest contributor to overall growth in U.S. economy, up 5.3% in 2013.<sup>2</sup>
- Manufacturing employment at 12.18 million in October 2014, up from 12.01 million in October 2013.<sup>3</sup>







### But growth doesn't lessen profit pressures

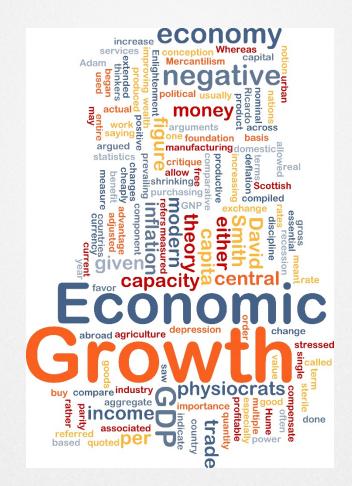
- Revenues rise and opportunity beckons, but intense profit pressures remain.
- Rapid increases in demand require equally quick increases in production.
- Too many firms:
  - Make the wrong investments as they ramp up.
  - Over-buffer with excess or wrong resources.
  - Trip over new regulations, standards, and specifications.
  - Fail to grasp increasingly complex customer demands.
  - Lack a strategy for growth.



# How can you bridge the gap from slow growth to profitable growth?



- Focus on three core strategies:
  - Innovation.
  - Talent.
  - Process improvement.
- Integrate robust information and insights to manage all three strategies for greater profitability.



#### Bridging the Gap



New manufacturing landscape requires new strategies

#### Innovation

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- Getting started



#### Growth spurs innovation





- Manufacturers are innovating with:
  - New products.
  - New services.
  - New processes and practices.
  - New approaches to business.
- Companies that kept their R&D pipelines full during the recession are leading the recovery...
- But others can still catch up.



### Savvy leaders focus on four innovation keys

- Intellectual property.
- Lead position on regulations.
- Leverage iterative innovation.
- Non-product innovations.

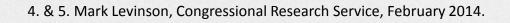






#### Focus on intellectual property

- Commodity products will likely never again be profitable for U.S. manufacturers.
- Mantra is now "IP-rich."
- U.S. has greater share of manufacturing value-add from high technology than most other OECD countries.<sup>4</sup>
- U.S. spends more on R&D than other countries (although R&D spending is rising in China, Taiwan, and Korea).<sup>5</sup>









### Stay in front of regulations



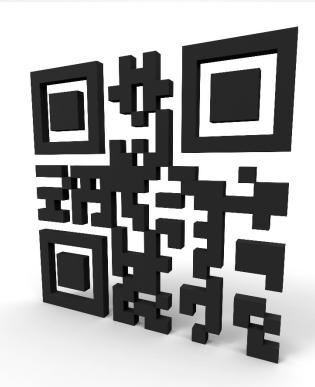


- Increased regulation requires improved tracking of products, components, and materials.
- Take active roles with government, within industries, and on standards bodies.
- Help draft industry requirements, rather than waiting to comply.
- Playing catch-up takes time and drains profits.



#### Leverage less risky — but still profitable — iterative innovation

- Consumer demand and regulatory requirements trigger subtle product changes.
- Explore how new technologies in an old product can boost demand.
- Relabel or repackage products to emphasize *existing* attributes.







#### Look beyond products





- Value-added services can be as lucrative as products themselves.
- Consider ways to add value:
  - Improved customer support.
  - Engage/friend customers with product best practices and tips.
  - Coordinate suppliers and products for customers.
  - Kitting, preassembly, etc.



#### Apple shows the way

- Switch from PowerPC to Intel processors — more powerful technology in essentially the same products.
- Genius bar and App Store new services and new sources of revenue and profits.
- Endless updates infinite iterations of products drive increased revenue.







#### Key innovations question to consider

- What do customers consider "value"?
- How do customers use and leverage products?
- What do customers say about your products (favorite features, problem features, pet peeves, etc.)?
- What triggers a new-product purchase?
- What do customers want in next-generation products?
- Why do customers love/hate your company?









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#### Need for talent intensifies



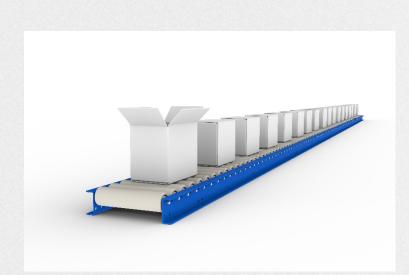


- Steadily rising manufacturing employment and baby boomer retirements occur just as manufacturers need more talent.
- To find, develop, and retain talent, savvy leaders focus on three keys:
  - The new manufacturing employee.
  - Problem-solving skills.
  - The new manufacturing leader.



### Manufacturing employees are different today:6





- Automation and new technologies have changed the factory floor dramatically.
- Less than 39% of workers are directly involved in making something.
- 31% of manufacturing employees now hold management and professional jobs.
- Number of manufacturing workers with graduate degrees increased by 19% between 2000 and 2012.

6. Mark Levinson, Congressional Research Service, June 2013.



### Problem-solving and soft skills matter

- Almost one-third of executives report that their facilities follow improvement methodologies based on lean or the Toyota Production System.
- 69% have a continuous-improvement program in place.<sup>7</sup>
- Lean/TPS practices rely on workers at every level to identify and solve problems, requiring:
  - Intellectual tools and techniques to find root causes.
  - Social skills to engage team members in problem solving.
  - The right technical skills or the training to develop them.

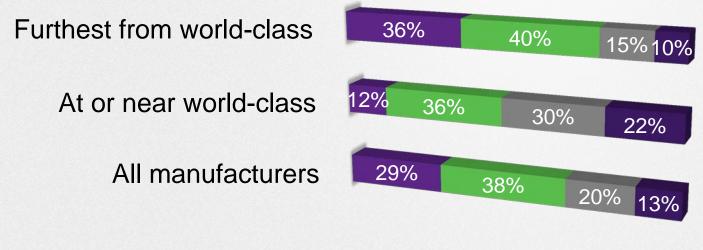
7. 2012 MPI Manufacturing Study, The MPI Group, 2013.

#### Training and world-class status



Manufacturers at or near world-class status in human-capital management train more.

# Formal training hours annually per employee (% of manufacturers)



■ 8 or fewer ■ 9 to 20 ■ 21 to 40 ■ More than 40

Next Generation Manufacturing Study, The MPI Group, 2013.



#### New leaders needed

- More than 50% of manufacturing executives see the potential for a leadership succession at their firms in the next five years.<sup>9</sup>
- Manufacturers need talent- and performance-management systems to identify, promote, and reward high-potential candidates.
- A successful talent-management strategy:
  - Retains and elevates high-performers in the organization: What motivates them?
  - Attracts new talent: What will induce them to change jobs and relocate?
  - Trains: Which role-specific skills do leaders need?
  - Rewards: What does a competitive, performance-based compensation package for your industry or region look like?

<sup>9.</sup> Next Generation Manufacturing Study, The MPI Group, 2013.

### General Mills gets talent right

- One of Fortune magazine's 100 Best Companies to Work For.
- More than 29,000 employees and a culture that recognizes the unique needs
  - of employees.
  - Competitive salaries and annual bonuses (individual and company performance).
  - Paid holidays and vacations (new employees receive three weeks of

vacation each year).

- Array of employee benefits (medical and dental; retirement and savings plans; stock options and ownership programs; life, auto and home insurance; educational assistance; etc.).
- Flexible work arrangements (flex time, flexible workspace configurations).
- Nationwide program with resources for child care, adoption,

$$\textcircled{}$$





#### Bridging the Gap

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#### Processes require continuous improvement

- Everything your company does consists of processes

   procurement, production, sales, logistics, maintenance, etc.
- Executives in every industry recognize the need to:
  - Hit higher internal goals.
  - Rise to new standards set by competitors.
  - Meet increased customer demands.
  - Extend process improvements throughout the supply chain.









#### Improvement is as simple as PDCA

- 1. Plan: Identify processes and look for improvement opportunities.
- 2. Do: Apply solutions/new ideas to remove waste and improve the process.
- *3. Check*: See what works (better results) or doesn't (learn from the attempt to improve).
- 4. Act/Adjust. If improvements work, make this the new standard and apply it elsewhere. If not, try again.
- 5. PDCA: Do this over and over again.



# Process improvements are based on meaningful metrics



- As close to real time as possible, allowing for corrective actions that prevent bigger problems (lead measures).
- Align with corporate objectives and mission (hoshin planning) and cascade throughout the organization.
- Clearly illustrate performance gaps.



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### Common performance indicators — Costs

- Cost of goods sold (COGS) as percentage of sales or shipments.
- Labor as percentage of COGS.
- Material as percentage of COGS.
- Overhead as percentage of COGS.
- Support costs (e.g., maintenance costs per unit produced, logistics costs per unit shipped).
- Supplier costs (total costs, including unit price, transportation, inventory carrying costs, etc.).







#### Common performance indicators — Quality

- Scrap as percentage of sales.
- Rework as percentage of sales.
- Pass-through yields (by product, process, line, or value stream).
- Customer reject rates.
- Warranty costs.
- Process quality (percentage of value-added work time vs. waste time).







### Common performance indicators — Delivery & Speed

- Lead times from suppliers.
- Lead time to customers.
- Supply-chain lead time, furthest supplier to end customer.
- On-time deliveries to customer request date.
- Machine availability.
- Perfect deliveries (on-time and to all quality and customer specifications).
- Process-to-process timeliness and correctness

#### right first-time, on-time percentage.

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### Common performance indicators — EHS

- OSHA rates.
- Absenteeism rates.
- Employee turnover rates.
- Energy per unit of product.
- Product carbon footprints.
- Reuse/recycle product percentages.







# Common performance indicators — Supply Chain





- Complete, on-time, inbound shipments.
- Supplier productivity.
- Quality (e.g., defect rates).
- Costs (e.g., expedited shipping, shortshipping charges, excessive inventories).
- Service levels.
- Performance comparisons to other suppliers.



# Transform metrics, data, and information into action



- Organization-wide problem-solving.
- Establishing new targets/key performance indicators (KPIs).
- Improvement events/kaizens.
- Monitoring and documenting compliance activities.
- Addressing customer issues/satisfaction.
- Budgeting for investments (but only after non-investment options are explored).



# Ability to improve — or not — informs strategic planning



- Which departments or functions receive resources?
- Which plants receive newmodel products?
- Is it possible to in-source parts or components due to improved cost structures?
- Do you need another plant if you can free up capacity at an existing facility?





### **Process improvements drive Drummond Press**

• Began lean journey in 2010.



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- Hired lean coach for one year, providing group and personal training (lean basics, lean leadership, total productive maintenance).
- Deployed new office layout that improved communications.
- Established new inventory reporting procedures.
- Implemented new invoicing process.
- Two-year benchmark study:
  - Reduced fixed overhead by 12.5%.
  - Eliminated 62.5% of "non-value added" steps.
  - Cut raw material inventory by 50%.
  - Recorded time savings of 85% in its shipping department.
  - Reduced accounts receivables by 21 days.<sup>11</sup>





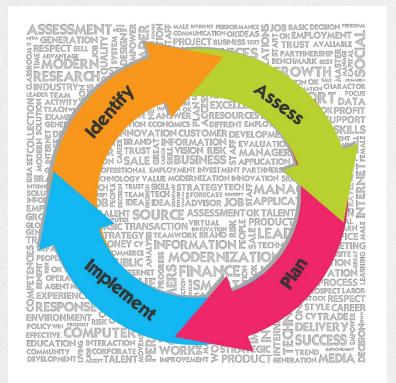
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### Get started with the three core strategies





- Plan a course of action.
- Gather data to see where the organization is today relative to competitors and anticipated trends.
- Information helps to craft informed strategic plans:
  - Timely and accurate information.
  - Delivered in the right way.
  - Made accessible to the right people.



# Information supports implementation and improvement



- Harder than it looks, especially in global organizations:
  - Multiple products.
  - Multiple borders.
  - Multiple languages.
  - Multiple currencies.
- Leading manufacturers establish data-quality programs and stewards:
  - Ensures that each function receives and transmits data correctly.
  - Periodically cleanses and updates data.
  - Deploys business analytics systems that sift insights from mountains of data.



### Prime your innovation information pipeline

- Are you surprised by how your customers use your products?
- What are your customers saying about your products and company on Facebook, Amazon, Twitter, etc.?
- Do you know how your company can help customers after they purchase your products?





### Prime your talent information pipeline

- What is the top reason that employees stay with your company? The top reason they go?
- Which skill is likely to have the most impact on your company in the coming year?
- Which technology or equipment advances are outpacing your organization's knowledge base?







### Prime your process information pipeline

- Which performance measure is most difficult to track?
- Which KPI presents the biggest problem to your management staff?
- Do management, employees, and suppliers know how their actions impact the company financially?











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## For more information:



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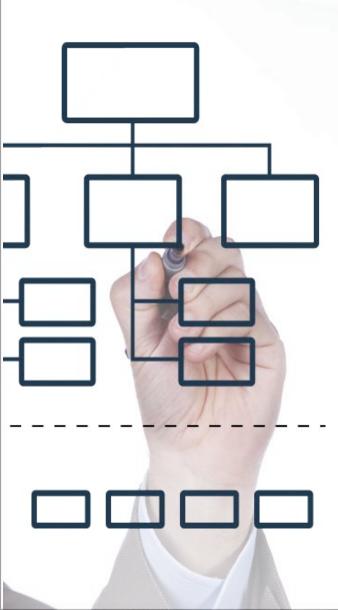


Information Builders



### **Business Analytics and Information Management** For The New Analytical Era

Information Builders



|     | nalytical<br>sers                                  | Organizational<br>Role | Analytical<br>Requirements          | Results  |  |
|-----|--|------------------------|-------------------------------------|--|--|
| Bac | Back-Office BI, Analytics & Information Management |                        |                                     |  |  |
|     | utive<br>agement                                   | Strategic              | Metrics<br>Dashboards<br>Scorecards | High-level<br>Decision-making                      |  |
| Ana | lysts  | Analytical             | Analytics<br>Advanced Analytics     | Generate Insight,<br>Identify Problems<br>& Trends |  |
|     |  |                        |                                     |  |  |

#### Pervasive BI, Analytics & Information Management

| Employees                                      | Operational | Reporting & Metrics,<br>Decision Support,<br>Performance<br>Benchmarks | Alerts/Insights,<br>Change Culture,<br>High Cost Control,<br>Optimize Processes |
|--|-------------|--|---|
| Partners<br>Suppliers &<br>Distributors        | Operational | Performance<br>Benchmarks,<br>Information<br>Exchange                  | Optimize Supply<br>Chain,<br>Meet SLA's<br>Eliminate Fraud                      |
| Customers,<br>Citizens, Patients<br>& Students | Vital       | Self-service<br>Experience,<br>e-Statements                            | New Revenue,<br>Loyalty/Retention,<br>Public Awareness                          |

Information Builders

Synchronize data from enterprise systems and devise common definitions for key data elements related to revenue, freight, inventory, finance, shipping, sales, and other domains.

Transition reporting activities from IT to business users.



Hillman has also improved the efficiency of its packing and picking operation to meet strict two-hour service-level agreements for shipping orders

Information Builders

Visteon has used WebFOCUS to create reports and dashboards for people in finance, purchasing, engineering, and other sectors. These users no longer need to access multiple systems or manually combine data to get the information they need.



**Challenge:** Streamline retrieval of critical data from a variety of systems for business users. Create new types of financial reports for employees and supply chain partners.

**Strategy:** Pull data from multiple databases into a single reporting database; connect to production systems in real time; enable users to query and drill down into finance, purchasing, engineering, and other info.

**Results:** Users no longer need to access multiple systems or manually combine data to get the reports they need.

### Creating a Culture of Quality Even Outside Your Own Company!

"Dealers like it because it is visually intuitive. It only takes one click to see the overall performance, one click to see the claims in a particular category, or one click for many other useful measures"

> Jim Lollar Business Systems Manager Warranty Operations



**Challenge:** Help thousands of dealers to identify and resolve problems with warranty repairs.

**Strategy:** Use data visualization techniques to present information with zero or one click so that general managers at each dealership can see how their warranty repair costs compare to other dealers within their measurement group.

Results: Senior managers have greater transparency into their service and repair businesses, resulting in 40 percent fewer dealers being audited or entering Ford's global warranty counseling process – and \$70MM saved per year!

Information Builders

"iWay automates the entire process from order to billing. Previously, this was a manual process that involved a lot of paperwork. It's much faster and more accurate now." **Challenge:** Streamline the flow of information governing order entry, warehouse management, billing, and shipping/receiving operations – within the company and to external partners. Extend enterprise resource planning (ERP) automation from headquarters to the warehouse .

*Ray Cooper Developer and Analvst* 



MARK ANTHONY BRANDS

**Strategy:** Replace manual, paper-based transactions with automated electronic workflows.

**Results:** Orders processed up to 75% faster and data quality improved throughout the organization, saving many hours of labor each week.

Performance Mgmt Improves Purchasing Operations Transparency Ensures Greater Efficiency for Steel Giant

Information Builders

"One of the key elements of a scorecard is the cause-effect diagram. It links the company's strategy with the perspectives within the scorecard"

Andre Müller Purchasing Logistic Controlling Team **Challenge:** Formalize procurement processes, define purchasing-related objectives across multiple operating units, and accurately measure progress towards strategic goals.

**Strategy:** Purchasing initiative to strengthen related activities throughout all business units.

ThyssenKrupp



**Results:** Greater visibility into purchasing operations not only increased purchasing productivity and accountability across all entities, also helped achieve economies of scale through consolidation and cost-cutting.

*"WebFOCUS gives them immediate access to important sales information, which allows them to take a more proactive approach to managing their accounts"* 

Melinda Tormey Sales Analyst **Challenge:** Make sales and promotional information more accessible to members of the sales management team.

**Strategy:** Replace cumbersome, outdated green screen environment with a powerful, user-friendly sales dashboard that gives sales managers tremendous flexibility in how they handle, analyze, and display information.



**Results:** Sales managers can now view sales activity in greater detail, and monitor important information that used to be difficult to track.

### What Do Your Users Want? Tools vs Apps







### **Information Builders** Focused on Ease of Use and 100% Adoption





- Performance Metrics
- Predictive
- Search
- Social Analytics
- Location Intelligence



- Visualization
- Ad-hoc for non-technical users
- Highly stylized and branded
- Works on all devices
- Personal user customization
- All users can answer questions

**ROI on Information Capital** 

### **The Information Builders Platform**

#### Information Builders



### **Information Builders Customers**

#### Information Builders



### Thank you!

## **Question and Answer Session**

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