The Boeing Company

Our History
- Founded in 1916 in Washington state
- Joining of Boeing, McDonnell Douglas, and more

We are a global company
- Recognized as the world’s largest, most diversified aerospace company
- 165,000 employees in the U.S. and 65 countries
- Broad customer base across 150 countries
- Total revenue in 2014: $90.8B

What we do today
- Design, assemble and support commercial jetliners, defense systems, satellites; integrate large-scale systems; develop networking technology and network-centric solutions

Bill Boeing, Dutch Kindelberger, John McDonnell, Donald Douglas

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Organized for Excellence

Two businesses supported by nine corporate functions
Enterprise KM Strategic Objectives

Enhance business success by:

- Leveraging Boeing's diverse knowledge through a collaborative “one company” environment
- Ensuring long term continuity of key knowledge within all functions and businesses
Enterprise Knowledge Management Strategy

Improve Access to Expertise

Preserve Key Knowledge

Leverage Knowledge & Enhance Performance

Institutionalize the “Boeing Knowledge Network”
Boeing Knowledge Network

Boeing Designated Expert
Communities
BKN/KM CoP
KM Awards
Boeing Technical Journal
Productivity Network

Enterprise Mentoring
Search
KM Gateways

Late Career Knowledge Transfer
inSite
Lessons Learned

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Story

Program chief engineer

Cracked valve bracket

Boeing Designated Expert

<table>
<thead>
<tr>
<th>Engineering BDEs</th>
<th>Q2 2012</th>
<th>Q4 2012</th>
<th>Q2 2013</th>
<th>Q4 2013</th>
<th>Q2 2014</th>
<th>Q4 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utilization</td>
<td>53%</td>
<td>64%</td>
<td>66%</td>
<td>65%</td>
<td>67%</td>
<td>67%</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>76%</td>
<td>87%</td>
<td>93%</td>
<td>87%</td>
<td>95%</td>
<td>93%</td>
</tr>
</tbody>
</table>

Requirements Quality  Lightning Testing  Crane Operations

Aircraft Electrical Power Systems  Radar and Antenna Measurement
Engr BDE Results - Demonstrated value

BCA Examples
• Address signal continuity through connector during vibration
• 2.2 Hz LCO certification help
• Interior composite fabrication help
• Damage tolerance and maintenance help for aircraft structures

BDS Examples
• Analysis of rotor wind tunnel test data for V-22 Program and data analysis for CH-47 wind tunnel test
• A nozzle performance improvement for a proprietary program
• KC-46A exterior light lab simulation
• Valve bracket weld cracking in advanced material at high vibration

EO&T Examples
• Cyber Security/Network Invention Disclosure resolution
• Advanced drilling techniques for carbon fiber and titanium application
• Human Factors issues related to Radio Tower upgrade for Flight test organization
• Magnesium alloy for space flight application
• RFID related questions for passive and active technologies

>4000 documented success stories spanning 2012-14
Finance BDEs

BOEING DESIGNATED EXPERTS (BDE) - AUTHORITY TREE

Choose an Authority

- Finance
  - Accounting
  - Contracts and Pricing
  - Estimating and Pricing
  - Estimating and Pricing / Procurement Financial Analysis (PFA)
  - Financial Planning and Analysis
  - Integrated Scheduling
  - Procurement Financial Analysis (PFA)
inSite- built from the best of the web

content aggregation
people directory
tagging

communities

simple content syndication

user profile
colleagues

social bookmarking

authorization
crowd driven solutions

finding experts

user generated content

Social Networking like Facebook, LinkedIn, etc.

activity feeds
web standards
follow people
user groups
questions and answers
enterprise mentoring
social networking
solving problems
privacy
recommended content / people
authentication

knowledge sharing

inSite

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Community of Excellence

Electromechanical Packaging CoE

Welcome
The ElectroMechanical CoE will be a venue for sharing best business practices, standardizing design processes, and providing a basis for knowledge transfer to fellow technologists. It will foster a "One Boeing" environment that values the contributions of its participants.

Questions for the CoE? Start with "Search this Site..."
Please check the Q&A archive before submitting a question.

Announcements

CSUF/Boeing LTP Engineer’s Mathematics Refresher Course (Next to Start on July 11, 2012) by Coomes, Stephen D.
6/24/2012 11:02 AM
This course in Engineering Mathematics Refresher provides the engineer with the necessary mathematical tools to solve various problems encountered in Engineering. This class includes matrix modeling and analysis of simple engineering problems,..

Electronics Packaging Course by Cal State Fullerton and Boeing LTP (Next to Start on Sept 11, 2012) by Coomes, Stephen D.
6/24/2012 11:02 AM
This course in Electronics Packaging is geared toward providing the design engineers with the tools needed to understand how their design will perform in various environments. This class includes modeling, analysis, and design of simple electronic systems,..

Contact Us

COE Leader
Steve

Steering Committee Focals
Richard N.
Don L.
Jason H.
Michael Z.

This section will be left blank. Customer can enter in data here if needed.

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Story

Airborne Electronic Flat Panel Displays

SAE ARP 4260 display test procedures

One Boeing approach

Knowledge capture / transfer

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“Steady State” KM

Obtain leadership support

Understand your critical knowledge

Establish anchors with BDEs / Communities

Connect vertically and horizontally

Realize business gains

Institutionalize it

Standard Work, One Boeing Approach
**Story**

“Steady State” knowledge transfer

Requirements quality

2 experts became 17 experts

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Relative Cost to Correct Errors

<table>
<thead>
<tr>
<th>Program Phase Completed</th>
<th>Relative Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>1</td>
</tr>
<tr>
<td>Unit Test</td>
<td>5</td>
</tr>
<tr>
<td>Integration Test</td>
<td>16</td>
</tr>
<tr>
<td>System Test</td>
<td>40</td>
</tr>
<tr>
<td>Acceptance Test</td>
<td>110</td>
</tr>
</tbody>
</table>


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“Reactionary” Knowledge Transfer

Experience shows Knowledge WILL NOT be transferred without a Knowledge Transfer Plan and executing to that plan

Even if the recipient of the knowledge has not been identified we can START NOW
Story

Commercial Aviation Services: fleet support, technical support

1000 employees between 2014 and 2015

Top down approach

No impact to operations

1500 boxes of paper digitally captured

Digital data collected

Content analytics to quickly find answers

Contractual and Data Services 2014 Transition (Orders)

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KM / Program Mgmt / Project Mgmt

Drive culture

Encourage KT, job rotations, mentor / mentee relations

Ask questions

Integrate into day to day operations

PEP, TEP, risk management

Gated process

Functional use of KM

911 / 411 (help needed)

Capture / transfer for best practices

Phantom Eye

Paint Automation

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Driving Ownership

EOT Leadership

Functional and Bus. Reviews Include KM Scorecards

KM Team & Functional Partners Provide Data

Strategic Risk

Engr
Ops
HR
IPM
EHS

SM
IT
BRT
BTE
Fin

Strategic Risk

BU KM Activities

Functional KM Activities

KM Products and Services

Aligned One Boeing KM Metrics

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Example Scorecard

Enterprise Engineering
Engineering – KM

- Improve Access to Expertise
  - 3695 BDEs across 4663 unique areas
  - All Functions & BUs
  - Success stories continue to roll in
  - Boeing Technical Networking project complete
  - $ avoidance helped by the Modeling & Sim CoE

- Knowledge Capture / Transfer / Leverage
  - Mentor Match web page online [Link]
  - Late Career Knowledge Transfer operational in BCA and EO&T
  - 5 Boeing Technical Journal Q4 2013, more pending
  - 33 KM Gateways generating >31k Downloads (Re-use)

- Institutionalize the “Boeing Knowledge Network”
  - Culture driving: 30 Knowledge Sharing Awards, 2 YE Cash, and 5 BNNs
  - Key partner in BDEs, LCKT, Communities

- Risk
  - Keeping BDE rosters current and expertise
taxonomies consistent across business units

- Addresses key strategic areas
- Linked to overall company risk
- Standard format for all functions
- Owned by the functions / operating groups
Recognition & Leadership

Business benefit

Preserving knowledge

Certificate personally signed

Sr. VP of Engineering, Operations, and Technology

Sr. VP of HR and Administration

Coin

Eligible for annual cash award
## Challenges

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distaste of “KM”</td>
<td>Energize and inspire around our legacy and responsibility to be stewards of what we inherited. And to build upon it tomorrow</td>
</tr>
<tr>
<td>People don’t want to share knowledge</td>
<td>Policy language, followed by dialog</td>
</tr>
<tr>
<td>Legitimate internal sharing restrictions</td>
<td>Recognize compliance rqmts</td>
</tr>
<tr>
<td></td>
<td>Stratify controls</td>
</tr>
<tr>
<td>Getting started as a change agent</td>
<td>Partner with your most leveraged and visible organization, then expand</td>
</tr>
</tbody>
</table>

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Summary

Improve access to the Boeing “Knowledge Portfolio”

Drive culture through a business value message

Facilitate alignment across the company by leveraging the growing enterprise pull for KM

Stay focused on the strategic objective: Enhancing Business Success
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