THE ROLE OF KNOWLEDGE MANAGEMENT IN AIRCRAFT PRODUCT DEVELOPMENT

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July 10th, 2012

PLM12
9th International Conference on Product Lifecycle Management

BOMBARDIER
the evolution of mobility
THIS PRESENTATION

‘The role of Knowledge Management in Aircraft Product Development”

THIS AFTERNOON

Patrice Belanger

“Enabling PLM at Bombardier Aerospace”

I am a knowledge worker
THE POWER OF KNOWLEDGE

DRIVING NEW PRODUCT DEVELOPMENT

"If HP knew what HP knows, we would be three times as profitable."

Lewis E Platt, former CEO of HP
**FIELDS OF ACTIVITY**

**Aerospace**

- Revenues for fiscal year ended December 31, 2011: $8.6 billion
- 47% of total revenues
- Backlog: $22.0 billion*
- Employees: 33,600**

**Transportation**

- Revenues for fiscal year ended December 31, 2011: $9.8 billion
- 53% of total revenues
- Backlog: $31.9 billion $*
- Employees: 36,200**

* As at December 31, 2011
** As at December 31, 2011. Includes contractual employees.
BOMBARDIER AEROSPACE:
30,300 EMPLOYEES AROUND THE WORLD

OUR BUSINESS PRESENCE AROUND THE WORLD

- CANADA
  18,418 EMPLOYEES
- UNITED STATES
  4,324 EMPLOYEES
- MEXICO
  1,469 EMPLOYEES
- UNITED KINGDOM
  5,335 EMPLOYEES
- CHINA
  CO-OPERATION
- INDIA
  ENGINEERING
BUSINESS AIRCRAFT
STRONGEST PORTFOLIO OF BUSINESS JETS

LEARJET FAMILY
- LEARJET 40 XR
- LEARJET 45 XR
- LEARJET 60 XR
- LEARJET 85

CHALLENGER FAMILY
- CHALLENGER 300
- CHALLENGER 605
- CHALLENGER 850
- CHALLENGER 870

GLOBAL FAMILY
- GLOBAL 5000
- GLOBAL 6000
- GLOBAL 7000
- GLOBAL 8000

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COMMERCIAL AIRCRAFT
LEADERS IN THE NEW REALITY

**Q-SERIES FAMILY**

- Q400 NEXTGEN

Optimized short-haul solution

**CRJ SERIES FAMILY**

- CRJ700 NEXTGEN
- CRJ900 NEXTGEN
- CRJ1000 NEXTGEN

Optimized regional network solution

**CSERIES FAMILY**

- CS100
- CS300

Optimized 100- to 149-seat market segment solution

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Bombardier Aerospace, the world’s third largest civil aircraft manufacturer, is a leader in the design and manufacture of innovative aviation products for the business, commercial, amphibious and specialized aircraft markets.

**Leveraging the accumulated expertise of four of the world’s renowned aircraft manufacturers** – Canadair, Short Brothers, Learjet and de Havilland – Bombardier has launched successful aircraft programs that have advanced aviation, and helped our customers enhance their business.
Who knows what?

Anything new?

How to share?

When to contribute?

How to collaborate?

Where to find stuff?

I am a knowledge worker
BOMBARDIER’S PROGRAM DEVELOPMENT PROCESS

DECISIONS AND PROBLEMS ARE DRIVING THE DISCOVERY PROCESS

AIRCRAFT PROGRAM DEVELOPMENT PROCESS

CONCEPTUAL DEFINITION → LAUNCH PREPARATION → PRELIMINARY DEFINITION → DETAIL DEFINITION → PRODUCT DEFINITION RELEASE → PRODUCT CERTIFICATION → PROGRAM COMPLETION

knowledge

Decision Making

Problem Solving
KEY CHALLENGE

TO ENABLE THE LEVERAGE OF ACCUMULATED EXPERIENCE

Without Knowledge Management

With Knowledge Management
Communities of Knowledge

BOMBARDIER’S KNOWLEDGE MANAGEMENT APPROACH
OUR EXPERIENCE
DIFFERENT APPROACHES WITH VARIOUS SUCCESS

1. Co-location of Development Teams
2. Investment in Collaboration Tools
3. Organization of Lessons Learned Workshops
4. Organization of internal conferences
OUR NEW APPROACH
BASED ON OUR EXPERIENCE WE RE-LAUNCHED KM

✓ Introduced a KM Governance body to ensure company wide accountability, strategic direction, priorities and budget allocations.

✓ Developed guidelines, procedures and metrics to sustain customer centric K-creation, sharing and management, and to measure impact.

✓ Launched a Knowledge and Collaboration platform – Yellow Pages access to vetted experts, key documents, lessons learned, knowledge brief, projects, studies, etc.;

✓ Incentivized employees to create / share knowledge – participative management, budgeted time, recognition mechanisms.

✓ Established Communities of Knowledge to facilitate knowledge and learning solutions across all Programs.
COMMUNITIES OF KNOWLEDGE
AS THE WAY TO BRING KNOWLEDGE MANAGEMENT ALIVE

Network of people who work together within a domain that crosses site and organizational boundaries.

Community members share and develop common methods, tools, processes and share knowledge to support each other.
## KNOWLEDGE DOMAINS

BOMBARDIER HAS LAUNCHED 28 COMMUNITIES OF KNOWLEDGE GLOBALLY

<table>
<thead>
<tr>
<th>#</th>
<th>Knowledge Domain</th>
<th>#</th>
<th>Knowledge Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Control Systems</td>
<td>15</td>
<td>Stress</td>
</tr>
<tr>
<td>2</td>
<td>Propulsion</td>
<td>16</td>
<td>Mass Properties</td>
</tr>
<tr>
<td>3</td>
<td>Acoustics</td>
<td>17</td>
<td>Experimental</td>
</tr>
<tr>
<td>4</td>
<td>Reliability &amp; Maintenance</td>
<td>18</td>
<td>Material and Processes</td>
</tr>
<tr>
<td>5</td>
<td>Thermodynamics</td>
<td>19</td>
<td>Aircraft Structure</td>
</tr>
<tr>
<td>6</td>
<td>Pneumatics</td>
<td>20</td>
<td>Aircraft Interiors</td>
</tr>
<tr>
<td>7</td>
<td>Loads &amp; Dynamics</td>
<td>21</td>
<td>Airworthiness</td>
</tr>
<tr>
<td>8</td>
<td>Electrical</td>
<td>22</td>
<td>Configuration Management</td>
</tr>
<tr>
<td>9</td>
<td>Avionics</td>
<td>23</td>
<td>Product Integration</td>
</tr>
<tr>
<td>10</td>
<td>Electronic Equipment</td>
<td>24</td>
<td>Aircraft Configuration</td>
</tr>
<tr>
<td>11</td>
<td>Electro Magnetic Comp.</td>
<td>25</td>
<td>Flight Test</td>
</tr>
<tr>
<td>12</td>
<td>Flight Deck Design</td>
<td>26</td>
<td>Project Management</td>
</tr>
<tr>
<td>13</td>
<td>Sciences of Flight</td>
<td>27</td>
<td>Program Management</td>
</tr>
<tr>
<td>14</td>
<td>System Simulation</td>
<td>28</td>
<td>Business Process Mgmt</td>
</tr>
</tbody>
</table>
STRUCTURE OF A KNOWLEDGE DOMAIN
CLEAR RESPONSIBILITIES FOR KNOWLEDGE CREATION AND SHARING
KNOWLEDGE DOMAIN ACTIVITIES
ACTIVITIES ALONG THE KNOWLEDGE MANAGEMENT CYCLE

Activity 1: Knowledge Capture Sessions

Identify, Extract Knowledge

Activity 2: Internal conferences

Share, Transfer Knowledge

Activity 3: Peer Reviews

Activity 4: Decision & Problem Support

Activity 5: Knowledge Gap Analysis

Apply/Reuse
OUTLOOK 1: COMMUNITIES OF KNOWLEDGE
EXPANDING BEYOND THE ENGINEERING COMMUNITIES
OUTLOOK 2: PLM ECOSYSTEM
PEOPLE SYSTEM AND IT INFRASTRUCTURE NEED TO EVOLVE TOGETHER

Knowledge Management

IT infrastructure

Knowledge

Collaboration

Innovation

Information

Automating transactions

Enabling collaboration and participation

1999
2010
2012
2016

Time

Collaboration as a Service
Web 2.0 – SP 2010
eBok / eRoom
Intranet 1.0 - Bnet
SAP (HR, Finance, etc)

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Questions and Answers

Or contact us for further discussions

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