Servitizing ABB Turbocharging – Understanding the customer journey to improve service experience

Felix Keiderling, Regional General Manager South & Southern Africa, ABB Turbocharging
# ABB: the pioneering technology leader

### What (Offering)

<table>
<thead>
<tr>
<th>Pioneering technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Products</td>
</tr>
<tr>
<td>Systems</td>
</tr>
<tr>
<td>Services &amp; software</td>
</tr>
</tbody>
</table>

### For whom (Customers)

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Utilities</td>
</tr>
<tr>
<td>Industry</td>
</tr>
<tr>
<td>Transport &amp; Infrastructure</td>
</tr>
</tbody>
</table>

### Where (Geographies)

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia, Middle East, Africa</td>
</tr>
<tr>
<td>Americas</td>
</tr>
<tr>
<td>Europe</td>
</tr>
</tbody>
</table>

- ~$34 bn revenue<sup>1</sup>
- ~100 countries
- ~147,000 employees

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<sup>1</sup>SOURCE: Q4 2017 published financial results; ABB analysis
## Four market-leading entrepreneurial divisions

<table>
<thead>
<tr>
<th></th>
<th>Partner of choice for...</th>
<th>Market size&lt;sup&gt;1&lt;/sup&gt; and growth</th>
<th>Revenues&lt;sup&gt;2&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electrification Products</strong></td>
<td>...electrification of all consumption points</td>
<td>~$140 bn</td>
<td>$10.1 bn</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 – 4%</td>
<td></td>
</tr>
<tr>
<td><strong>Robotics and Motion</strong></td>
<td>...robotics and intelligent motion solutions</td>
<td>~$110 bn</td>
<td>$8.4 bn</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 – 8%&lt;sup&gt;6&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td><strong>Industrial Automation</strong></td>
<td>...industrial automation</td>
<td>~$130 bn</td>
<td>$6.9 bn</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 – 5%&lt;sup&gt;5&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td><strong>Power Grids</strong></td>
<td>...a stronger, smarter and greener grid</td>
<td>~$90 bn&lt;sup&gt;3&lt;/sup&gt;</td>
<td>$10.0 bn</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 – 8%&lt;sup&gt;4&lt;/sup&gt;</td>
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<sup>1</sup> Unconsolidated 2017  
<sup>2</sup> PG 2017 pro-forma revenues  
<sup>3</sup> Consolidated; not yet considering EPC business model change, ~$140 bn unconsolidated;  
<sup>4</sup> In certain segments (e.g. HVDC);  
<sup>5</sup> In certain segments  
<sup>6</sup> 8% for robotics market
Industrial automation

Driving service offering and digitalization across industry sectors in eight business units

- Oil, Gas & Chemicals
- Control Technologies
- Process Industries
- Measurement & Analytics
- Power Generation & Water
- Machine & Factory Automation
- Marine & Ports
- Turbocharging
Turbocharging principle – from excess energy to increased air intake
World of applications
Benefits of ABB Turbocharging

Turbocharging offers huge lever for value creation

- 300% increased engine output enabled by turbocharging
- 10% higher engine efficiency
- Lower CO₂ emissions
- Highest power density:
  - Turbine shaft power is equal to
  - 40% of engine power...
  - ...at less than 5% of engine costs
## ABB Turbocharging

More than 110 years of customer care

| Global leader | A global leader in the manufacture and maintenance of turbochargers for 500 kW to 80+ MW diesel and gas engines |
| Leading edge technology | Leading-edge technology and innovation enables our customers to perform better and produce fewer emissions |
| Installed base | > 200,000 ABB turbochargers in operation globally on ships, power stations, gen-sets, diesel locomotives and large off-highway vehicles |
| Wholly owned network | > 100 Service Stations in 50+ countries and a wide service portfolio providing tailored solutions anytime, anywhere |
## Servitization

### From “product manufacturing” to “outcome as a service”

<table>
<thead>
<tr>
<th>Product business</th>
<th>Aftersales services*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design and manufacturing of industry products included in sales price</td>
<td>Basic</td>
</tr>
<tr>
<td>– Research &amp; Development</td>
<td>– Delivery of product</td>
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<tr>
<td>– Product design</td>
<td>– Commissioning</td>
</tr>
<tr>
<td>– Sourcing</td>
<td>– Spare parts</td>
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<tr>
<td>– Manufacturing</td>
<td></td>
</tr>
<tr>
<td>– Product sales</td>
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<tr>
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<td>– Service to ensure system availability of product</td>
<td>– Regular maintenance</td>
</tr>
<tr>
<td>– Repairs</td>
<td>– User trainings</td>
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<tr>
<td>– Service agreements</td>
<td>– Maintenance contracts</td>
</tr>
<tr>
<td>– Risk- and revenue sharing models</td>
<td>– Leasing &amp; operating of complete systems</td>
</tr>
</tbody>
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*Classification of services following Tim Baines & Howard Lightfood – Made to Serve (2013)
Servitization

ABB Turbocharging – from component supplier to integrated service provider

Dorthe Maersk was the first ship powered by a turbocharged 2-stroke Diesel engine
The world of ABB Turbocharging

>100 sales and service stations

Production and assembly
Switzerland, China, India

Global HQ
Engineering and R&D

Joint Ventures
JP: Turbo Systems United Co. Ltd.
CN: ABB Jiangjin Turbo Systems Co. Ltd.

License production
Korea, Japan
# Servitization

From “product manufacturing” to “outcome as a service”

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<td>– Research &amp; Development</td>
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| | **Intermediate** |
| | – Service to ensure system availability of product |
| | – Regular maintenance |
| | – Repairs |
| | – User trainings |

| | **Advanced** |
| | – Service agreements |
| | – Maintenance contracts |
| | – Risk- and revenue sharing models |
| | – Leasing & operating of complete systems |

Criticality of the component during operations requires both – skilled engineers and genuine parts

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*Classification of services following Tim Baines & Howard Lightfood – Made to Serve (2013)*

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Customer experience is essential for relationships over the asset lifecycle
Customer Journey Mapping
Developed for a B2C world

Touchpoints across different channels

- How much will this cost?
- What’s near me?
- How can I contact them?
- Why change option?
- How is the experience?
- Is it easy to find and get there?
- Where do I park?
- When do I go? Who do I talk to?
- How long will the wait be?
- How much will this cost?
- What can I do while I wait?
- Would I rather wait here or come back later?
- Will I lose in line if I come back later?
- Can I watch what they are doing in my car?
- Am I in a position where I can watch?
- Will a mechanic talk me to let me do it?
- Will I understand what she is telling me?
- What is the next transaction?
- Are there other tips for maintaining my car?
- Where is my car? Is it in the same spot?
- What will I need to bring myself in a trip?
- What is the mechanic ’ s name?
- Can I call on my own?

Brain

- Appearances: Don’t want to spend a lot.
- Arranged: Car is a vehicle to me.
- Pleased: It crinkles with me.
- Satisfied: Will the repair be right?

Gut

- Scared: It’s not safe and the vehicle.
- Scared: No magazine TV, but there is TV.
- Scared: No one is at the counter.
- Satisfied: It’s a nice job.
- Satisfied: It’s a job.

Customer eXperience

- Scared: It’s not safe and the vehicle.
- Satisfied: It’s a nice job.

Stages

Research

Book Appointment

Arrive and Check In

Wait During Servicing

Check Out

Follow-Up

Touchpoints across different channels

- Appointments can be booked by phone or online but it’s tedious either way.
- Online form maybe a list of information.
- Information can change at any time due to identity theft.
- Online ordering will require uploaded credit card.
- Friendly technician on the phone, but never talk through automated system.
- Customer is fed up and friendly but it doesn’t feel like the car is getting fixed.
- No acknowledgment of the time customer
- Raw engine constantly and loudly
- Customer is fed up and checked out, escalates with no change until the next call.
- Checking is fast and friendly but it doesn’t inspire a huge wave to return.
- No personal service by the service writer.
- No explanation of my estimated completion.
- No acknowledgment from staff.

https://uxplanet.org/journey-mapping-is-key-to-gaining-empathy-1da5b54655e1
Customer Journey Mapping

Developed for a B2C world – to deepen understanding of CX
Customer Journey Mapping

Developed for a B2C world – to deepen understanding of CX
Customer Journey Mapping
Developed for a B2C world – to deepen understanding of CX

Journey mapping seems to work just fine… or why do we leave with a plant and a hot dog?
Asset lifecycle

Lifecycle services

Acquisition → Delivery → Operations → Divestment

Product sales
Customer Journey Mapping

Differences in a B2B environment – just looking at the product sales process

**Demand side**

- Long asset lifecycle
  - Technology cycles become shorter
  - Economical volatility rises

- Many involved parties during purchasing
  - Purchasing
  - Finance
  - Operations
  ‡ Static players map or dynamic Personas

**Supply side**

- Many component, sub-system supplier and integrators
  - Identification of true-value add is complex
  - Quantification & leveraging of value-add is difficult
  ‡ Co-creation & eco-system mapping

**Important key factors for success**

- Risks – actual and/or perceived – must be managed
- Value-based pricing & selling

**Sales process is more complex – and who is “the” customer?**
Customer Journey Mapping

Dedicated workshops in cross-functional teams

Follow a customer journey and identify touchpoints

User personas and their profile
- Jobs to be done*
- Pains and Gains
- Values

Visualize customer journey
- Actions and process steps
- Pain points and emotions

Identifying opportunities for improvement

Customer-centric approach
ABB Turbocharging
Product sales - complexity during acquisition phase

Customer • Ship owner • Operator

Shipyard • China • Korea • Japan

Licensor • MAN • WinGD

Customer • Ship owner • Operator

Shipyard • China • Korea • Japan

Licensor • Hyundai • Doosan

ABB • Local rep • HQ

Product business & aftersales market
Business model can only partially account for complexity

Who are our customers? And what are they willing to pay for?
– Values not of relevance for whole sequence of intermediaries

Product business feeds product into market & Service organization to capture aftersales business by addressing end customers that value

• Service network availability
• Efficiency & reliability
• Quality of product and workmanship

What are Jobs-to-be-done, Pains & Gains? Essential to identify value for relevant players
Asset lifecycle

Lifecycle services

Acquisition → Delivery → Operations → Divestment

Product sales → Service execution
The customer journey
From cradle to grave – asset lifecycle of 20+ years

Customer
- Acquisition
- Delivery
- Operations
- Divestment

New building department
- Warranty
- Scheduled overhauls
- Upgrades
- Dry-dockings
The customer journey

From cradle to grave – asset lifecycle of 20+ years

Planned operations according design specification... but
The customer journey

From cradle to grave – asset lifecycle of 20+ years

large overcapacities & high oil price result in lay-ups and
The customer journey

From cradle to grave – asset lifecycle of 20+ years

average vessel scrapping age of 18 years
The customer journey

From cradle to grave – asset lifecycle of 20+ years

... leads to adjusted operations of vessels.
The customer journey
From cradle to grave – asset lifecycle of 20+ years
The customer journey
From cradle to grave – asset lifecycle of 20+ years

Long asset lifecycle require agility & flexibility in service execution – it’s a people business
Service execution – a generic customer journey map
## ABB Turbocharging’s Standard Offering

<table>
<thead>
<tr>
<th>Service Network</th>
<th>Original Parts &amp; Original Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>98% availability within 48 hours at every airport</td>
<td>– Ensure that your engine has best possible output and fuel efficiency</td>
</tr>
<tr>
<td>600 trained service engineers</td>
<td>– Ensure availability of your equipment at highest performance</td>
</tr>
<tr>
<td>365 days 24 hours 1,200 trained employees</td>
<td>– Customized solutions based on individual service history and fleet benchmarks</td>
</tr>
<tr>
<td>over 100 service stations in over 50 countries</td>
<td>– We offer 24/7 accessibility of OEM trained technicians and original parts at 100+ Service Stations in 50+ countries</td>
</tr>
<tr>
<td></td>
<td>– Direct, local access to the ABB Turbocharging technology, know-how and global experience</td>
</tr>
</tbody>
</table>
Where do we come from…

Professionalization and clear accountabilities as key drivers

Split of product business and service in 1991 as separate reporting unit

Requirement specific split of roles & responsibilities

– **Global Headquarter Turbocharging Service**: Global Process Owner
  1. Spare Parts
  2. Technical Service
  3. Operations
  4. Product Management & Upgrades
  5. Sales

– **Global Service Network**: strong local entrepreneur as face to End Customer
  1. Service Execution
  2. Sales

Service Execution has multiple touchpoints to develop customer relations
... and where are we going?
Strategic focus on shifting to true value add

1990s
- Initiate Service growth by splitting off unit
- Go to market directly with “intermediate services”
- Drive global network and service execution

2010s
- Consultancy on TC-engine system during new project phase
- Growth initiative “Maintenance Agreements”
- Sales capabilities

2015 – 2020
- Outcome-based service agreements pay per use
  - Guaranteed execution & performance
  - Risk transfer to OEM accepting penalties
- Upgrades along the lifecycle
- Exposure-based maintenance concepts & efficiency optimization on system level through Digital Customer Solutions
The customer journey
From cradle to grave – asset lifecycle of 20+ years
Customer Journey Mapping
Service pre-sales – from transactional to contractual business

Follow a customer journey and identify touchpoints

User personas and their profile
- Jobs to be done*
- Pains and Gains
- Values

Visualize customer journey
- Actions and process steps
- Pain points and emotions

Identifying opportunities for improvement

User-centric approach to outcome-based contracts
Enhancing your performance
You talk – We listen.

All service agreements have
– Single point of contact for globally operating customers
– Maintenance Budget Estimate

<table>
<thead>
<tr>
<th>Maintenance Management Agreement</th>
<th>Modular extension with increasing commitment</th>
<th>Turbo LifecycleCare</th>
</tr>
</thead>
<tbody>
<tr>
<td>– Total flexibility to choose services</td>
<td>– Commit to customized scope of services in bulk</td>
<td>– Full-service scope and coverage of excessive wear &amp; tear</td>
</tr>
<tr>
<td>– Fixed pricing for parts and services agreed in “frame agreement”</td>
<td>– Fixed rate installments for projectable costs</td>
<td>– “Paid by the hour” with projectable costs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– Outcome-based options with Pain/Gain sharing</td>
</tr>
</tbody>
</table>
Hellenic Seaways

Most comprehensive offering – Turbo LifecycleCare with uptime guarantee
“We have already had experience […] where we saw the advantages, such as a stable budget, no surprises […]. But what makes the new agreement […] more attractive is the guarantee that within 20 hours the turbochargers will be back in operation, when unexpected incidents happen.”

Mr. Sotiris Pateromichelakis, Purchasing Manager, Hellenic Seaways
Customer Journey Mapping & Persona profiling
1. Identify improvement potentials in existing processes
2. Highlight potential value pockets as a valuable tool for product innovation
3. Limits the risk of forgetting the customer

Outcome-based services
1. Another step towards fully integrated operations
2. Industrial partnership through co-creation & co-delivery – basis for circular economy
3. Get quality of basic services right before aiming for advanced services

Topics for further research
1. Behavioral aspects of decreasing service intensity & customer touch points in industries
2. Applicability of playbooks in real life – from playbooks to cookbooks
Remember – at the end it’s a people business
Who we are…
Shaun West, Nathalie Vogler and Felix Keiderling

Shaun West
Expert in Product-Service System
Business Model Innovation

Nathalie Vogler
Program Manager at ABB

Felix Keiderling
Local Business Unit Manager ABB
Turbocharging South & Southern Africa