Siemens (established 1847)
Facts & Figures

Key figures
(Continuing operations; in millions of €)

<table>
<thead>
<tr>
<th>Volume</th>
<th>Fiscal 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orders</td>
<td>91,296</td>
</tr>
<tr>
<td>Revenue</td>
<td>83,044</td>
</tr>
</tbody>
</table>

Profitability and capital efficiency

| Net income²          | 6,120       |
| Return on capital employed (ROCE)² | 12.7%      |

Employees (in thousands)

<table>
<thead>
<tr>
<th>Sept. 30, 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
</tr>
<tr>
<td>Germany</td>
</tr>
<tr>
<td>Outside Germany</td>
</tr>
</tbody>
</table>

Patents

| 3,650 |
Complexity
One of our Key Challenges

“Complexity: there is hardly any other topic which bothers and frustrates me as much as this.”
(Joe Kaeser, CEO Siemens AG)

Purchase-to-Pay
Make to Deliver
Order-to-Cash
Complexity in Siemens Operations
Process Mining Principles
Striving for operational perfection

**Process Mining** (Wikipedia)
Process mining is a process management technique that allows for the analysis of business processes based on event logs.

Or

“Perfection is achieved, not when there is nothing more to add, but when there is nothing left to take away.” (Antoine de Saint-Exupéry)
Value Chain Model for Process Mining
following Michael Porter

Inbound Logistics → Operations → Outbound Logistics → Sales → Service

Primary Activities

Governance → Compliance & Audit → Finance & Accounting

Support Activities
Use Cases and active User (>6,000) based on Value Chain Model adopted for Process Mining

**Inbound Logistics**
- **Source Monitor (~600 user)**
  - Supplier Deliver Reliability
  - Supplier Performance
  - Predict late deliveries

**Operations / Manufacturing**
- **Plant Reporting (~750 user)**
  - Value Stream Analytics
  - Throughput Time
  - Inventories and working capital

**Outbound Logistics**
- **E2E Deliver (~1,100 User)**
  - Throughput Time
  - Deliver Capability
  - Deliver Reliability

**Procurement**
- **P2P Reporting (~1,000 user)**
  - Process Overview
  - Rework
  - Throughput Time
  - Payment Terms
  - Automation Rate

**Finance & Accounting**
- **A/R & A/P (~500 user)**
  - Late Payments
  - Cash Discounts
  - Optimum Payment time
  - Low value invoicing
  - Payment Blocks

**Sales**
- **O2C & eBiz (~1,500 user)**
  - O2C Digital FIT Rate
  - Rework
  - Automation

**Service**
- Spare Part Delivery
- Service Performance
- Order Tracking

**Others**
- PLM
- Credit Approvals
- ServiceNow
Order2Cash Use Case
Digital Transformation in Order Management

Order to Cash (O2C)

- > 30. Mio. items ordered per annum
- > 60 process steps

Order Entry
Availability Check
Order Confirm.
Delivery Note
Invoice Prep.
Payment Conf.
Complaint Mgt.
Creditor Mgt.
Cash Collection

Process Start 3.533.270
Create Sales Order Item 3.533.270
Create PO Item 3.533.270
PO Confirmations Processed 3.533.270
Incoming Invoice Posted 3.533.270
Create Invoice 3.533.270
Process End 3.533.270

of 922,998 variants of cases covered
Order2Cash
Driving Digital Transformation with Global Impact: “from Insight to Action”

CFO

Strategic Direction & Insight:
Digitization of Order Mgmt Process

Regional Management

Regular Performance Reviews
based on Management Reporting

Operational Order Management

Operational Action:
Process Automation, Reduce Rework
Reduction of manual touches
Order2Cash
Results with tangible business Impact

CFO
Regional Management
Operational Order Management
**Achievements**

### Buy
- ~2 Mio. Purchase Orders
- ~14% Rework (free text)
- ~280k PO Items require manual correction
- ~153k Purchase Orders
- 89 diverse Payment Terms
- ~39k POs with Terms to be adjusted

### Make
- Digital Inventory Management
- ~€5" Assets in finished Goods
- DIM to be rollout out in 48 plants
- ~50 Mio. Delivery Items
- ~90% Deliver Reliability @ DF / PD
- ~5 Mio. late Deliveries

### Sell
- ~30 Mio. ordered Items
- ~78% eBusiness Rate
- ~30 Mio. ordered Items
- ~300 Mio. Single activities
- ~4 Mio. manual ordered items

### Transparency
- 1,9 Mio. EUR OPW saving in one BU
- 2,6 Mio. EUR OPW saving in one BU
- 89 diverse Payment Terms
- ~39k POs with Terms to be adjusted
- ~50 Mio. Delivery Items
- ~90% Deliver Reliability @ DF / PD
- ~5 Mio. late Deliveries

### Benefit
- 7,8 Mio. EUR EVA contribution
- >1,5 Mio. add. on-time Items p.a.
- >10 Mio. Manual activities Automated (FY18)
- 1,9 Mio. EUR OPW saving in one BU
- 2,6 Mio. EUR OPW saving in one BU
- 7,8 Mio. EUR EVA contribution
- >1,5 Mio. add. on-time Items p.a.
- >10 Mio. Manual activities Automated (FY18)
Understanding Customer’s Requirements
The Human Factor
Process Analytics Community
It's all about the People

Task
- Digital Transformation
- Operational Excellence
- KPI Monitoring
- Application Management (Business)
- Application Management (IT)
- Customizing Rollout Projects
- Application Operations
- Platform Operations

Community
- ~6,000 active USERS
- 400+ DATA ANALYSTS
- Application Owner Business
- Application Owner IT

"Twins" Business + IT

SLT / HANA / Celonis Platform Operations
### 10 Key Learnings

#### Taking Process Mining to a Global Level …

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
<td><strong>Digital Transformation is existential</strong></td>
<td>Operational efficiency and optimization of transactional cost is crucial for any organization, i.e. for traditional pipeline business</td>
</tr>
<tr>
<td><strong>2</strong></td>
<td><strong>Transformation requires Transparency</strong></td>
<td>Process Mining allows full transparency on actual processes and complexity drivers; it provides a quantitative basis for transformational changes of any size</td>
</tr>
<tr>
<td><strong>3</strong></td>
<td><strong>Purpose comes first</strong></td>
<td>While Process Mining technology can be exciting it is crucial to define the purpose first; projects will fail if they are not founded on a clear purpose, i.e. business benefit and value</td>
</tr>
<tr>
<td><strong>4</strong></td>
<td><strong>It’s all about people</strong></td>
<td>Engaging the right change agents in operational departments, who understand how process mining can improve operational efficiency and drive Digitalization, is crucial</td>
</tr>
<tr>
<td><strong>5</strong></td>
<td><strong>Go for sprints, but prepare for a marathon</strong></td>
<td>Sprinting for a first minimum viable product allows quick successes: our first sprint for E2E Deliver in 2014 took only 14 days, since then this project proceeds as a marathon</td>
</tr>
<tr>
<td><strong>6</strong></td>
<td><strong>One size does not fit all</strong></td>
<td>Our functional departments have chosen different approaches: e.g. Order Management chose to go for global standardized KPIs, procurement went for a consultative approach</td>
</tr>
<tr>
<td><strong>7</strong></td>
<td><strong>Provide an open Platform and build a strong community</strong></td>
<td>Process Mining Service is open to every Siemens employee. Our community consists of &gt;400 trained analysts, regular info sessions and social media communications</td>
</tr>
<tr>
<td><strong>8</strong></td>
<td><strong>All you can eat fosters appetite</strong></td>
<td>Having bought a corporate license very early was the foundation to go for maximum usage and making it an alternative solutions compared to other BI Frontend tools</td>
</tr>
<tr>
<td><strong>9</strong></td>
<td><strong>Process Mining is great, combined with Reporting it becomes even better</strong></td>
<td>Process mining alone will not generate full impact. A KPI reporting for management, combined with a process transparency enables the organization for insights and actions</td>
</tr>
<tr>
<td><strong>10</strong></td>
<td><strong>RPA, Predictive and AI are buzzwords, but do not (yet) rock the organization</strong></td>
<td>Our RPA Scout and reports to predict late deliveries generate high management attention, but have yielded low operational impact till now</td>
</tr>
</tbody>
</table>
Contact

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Visiting Scholar

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