Benchmark frame for Threading Competence Center (VAM TCC)

SCHNEIDER ELECTRIC

People met within Schneider Electric:
- Vincent Megglé, Senior Vice President, Global Supply Chain Transformation

1. Introduction to the business context and Schneider Electric strategy

Between energy generation and its usage, Schneider Electric provides technology and integrated solutions to optimize energy usage in markets like energy & infrastructure, industry, data centers, buildings and residential. With a unique portfolio in electrical distribution, industrial automation, critical power & cooling, building management and security, Schneider Electric is the only global specialist in energy management and a world leader in energy efficiency.

With more than 130,000 employees in over 100 countries, Schneider Electric leverages its people diversity as strength to understand its customers and the world we are living in. In 2011, 39% of Schneider Electric’s sales were in new economies such as Brazil, Russia, India and China.

The purpose of the company is to guarantee a safe, reliable power supply and controlling operating costs.

The main figures are:
- Revenue: 22.4 B€.
- The sales by geographic regions are:
  - Western Europe: 32%
  - Asia Pacific: 27%
  - North America: 23%
  - Rest of the world: 18%
- 260 factories
- 110 logistics facilities
- 50 R&D centers
## 2. Introduction to the markets and the products

<table>
<thead>
<tr>
<th>Industry</th>
<th>Products and services</th>
<th>Main customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy &amp; Infrastructures</td>
<td>• Processes control and supervision&lt;br&gt;• Power supply &amp; distribution&lt;br&gt;• Energy monitoring and control&lt;br&gt;• Utility management (lighting, ventilation, elevators, intruder alert, etc.)&lt;br&gt;• Smart electrical networks management&lt;br&gt;• Single site or multi-site production data management&lt;br&gt;• Critical power&lt;br&gt;• Offer prepayment systems that bring electricity to disadvantaged customers</td>
<td>Electrical utilities, water &amp; waste treatment plants, Public-sector investors, oil &amp; gas infrastructure, Marine sector, etc.</td>
</tr>
<tr>
<td>Industry</td>
<td>• Processes automation&lt;br&gt;• Machine control and monitoring&lt;br&gt;• Power supply &amp; distribution&lt;br&gt;• Energy monitoring and control&lt;br&gt;• Utility management&lt;br&gt;• Single site or multi-site production data management&lt;br&gt;• Critical power</td>
<td>Engineering firms, systems integrators, OEMs, large industrial companies, panel builders and electrical equipment distributors, end users.</td>
</tr>
<tr>
<td>Data Centres and Networks</td>
<td>• Electrical distribution,&lt;br&gt;• Energy monitoring and control,&lt;br&gt;• Architecture design and installation audits,&lt;br&gt;• Leading-edge UPS systems, electrical switchgear, generators, etc.&lt;br&gt;• Cooling systems with a unique rack-based cooling technique to avoid overheating&lt;br&gt;• Online supervision and analysis&lt;br&gt;• Training and maintenance&lt;br&gt;• Security</td>
<td>From small companies to global groups, hospitals, administrations, etc. Our customers are where the availability and quality of the electrical energy is critical.</td>
</tr>
<tr>
<td>Buildings</td>
<td>• Power supply and distribution&lt;br&gt;• Utility management&lt;br&gt;• Data exchange&lt;br&gt;• Multi-site remote management&lt;br&gt;• Energy monitoring and control&lt;br&gt;• Critical power&lt;br&gt;• Security</td>
<td>Developers, engineering offices, developers, engineering and design firms, systems integrators, contractors, panel builders, electrical equipment distributors, building operators and end users.</td>
</tr>
<tr>
<td>Residential</td>
<td>• Power supply and distribution&lt;br&gt;• Home automation&lt;br&gt;• Voice-Data-Image networks</td>
<td>Architects, building owners, developers, building contractors, electricians, electrical equipment</td>
</tr>
</tbody>
</table>
Here there are some products examples:

- Boxes, Cabling & Interfaces
- Control Station
- Building Management System
- Bus, Networks & Communication
- Busway & Cable Management
- Capacitors, Inductances & Harmonic Filters
- Circuit Breakers & Switches
- Feeder Automation
- Remote Terminal Units
- Fuse Switches
- HMI (terminals and industrial PC)
- Home Control
- IED User Software
- Industrial plugs and sockets
- Installation material
- Conduits
- Insulation monitors
- Interface, Measurement & Control Relays
- Motion & Drives
- Motor Starters
- MV Circuit Breakers

### 3. Introduction to innovation

Schneider Electric devotes 5% of its sales every year to Research and development with over 7,500 R&D engineers in centres worldwide. The company sees innovation as a way to make its solutions greener, simpler and easier to integrate into the daily environment of its customers, relying on strong investment and many partnerships.
Innovation is at the heart of Schneider Electric's strategy to meet the energy challenge by making the smart grid a reality. By combining deep understanding of customer needs and technological innovation, our multi-disciplinary teams create innovative solutions for energy efficiency, both comprehensive and flexible.

Innovate at every level to embed energy efficiency in the everyday life, from homes to industrial facility

4. Rationale of the organizational evolution, creation of the Global Supply Chain Transformation and positioning of the engineering competence center

The company has doubled its revenue since 2004 due to a strong organic growth in the developing countries and an aggressive external growth. Since 2003, 120 companies have been taken over that leads to a higher level of complexity due to an higher diversification. 150 factories have been taken over and around 100 have closed in order to rebalance the production capacity at the geographical level.

The portfolio of activities was very broad and diversified. Therefore:
- A rationalization approach has been deployed leveraged by the creation of some central functions which have been granted since the beginning of a strong authority;
- One of the key central functions is related to the industrial field:
  - The industrial and logistics strategy (the footprint) have been put under control
  - The industrial performance has been put under control
- The lean manufacturing approach has been used for standardizing the processes and improving the performance. The SPS (Schneider Production System) has been designed and implemented;
- The QVE (Quality Value Engineering) has been implemented as well
- The Value Analysis is quite essential and has been especially used for the product having a long life cycle;
- At the organization level the production sites have been becoming independent from the countries then more focused on their marketing and commercial objectives. As a consequence a country was no more authorized to build up a new factory. The production organization has been disconnected from the country-based organization and a central control tower has been rolled out to manage the interface between the Supply Side and the Demand Side.
  The production facilities have been concentrated within a central Supply Chain organization including Purchasing, Manufacturing and Global Supply Chain Transformation (GSCT) in order to better manage the interfaces. This organization has been created 2 years ago and the current Executive VP of that function is the former Supply Chain Director of Dell. Within Schneider Electric Supply Chain has acquired an extended scope definition and potential impact which enables a truly optimization of the end-to-end flows of goods above the countries-based organization.

The competence center of production processes and engineering is one of the departments of the GSCT. The GSCT which counts 200 people is in charge of:

- The industrial footprint based on a yearly update of the strategic plan by the Executive Committee during a half day. This plan:
  - Gives a clear direction for all sites of the company
Includes the transfer projects (i.e. rebalancing the production capacity at the worldwide level) for around 500 projects which define the allocation of the products to the factories.

Integrates the financial business case

- The capex control (authorization process for any investment bigger than 500 K€) which is based on a specific workflow.

- The production of machines and tools has been kept inside Schneider Electric only for the machines and the tools which provide a competitive advantage. We produce 15% of production equipment in 4 facilities (2 for the machines: France and China, 2 for the tooling: France and Indonesia).

- The SPS Manufacturing and Logistics entails 6 people who are experts and lean masters. They animate the community of the professionals and run an hundred audits par year.

- The Supply Chain Planning and Logistics which counts 15 people has been fully re-engineered and the fundamental competences have been reinforced. A great job has been done for hearing the voice of the multiple types of customers and that enabled to understand the requirements of the customers in terms of services. 2 major projects are rolling out:
  
  o The increasing capability of the Supply Chain
  o The implementation of a S I & OP process (Sales Inventory and Operations Planning)

- The consistency of the Information Systems with the Supply Chain strategy.

- The industrialization of the new products: this part is probably the lighter one of our organization as we face a high level of technical diversity. A central function cannot have a clear value added. A SPS Industrialization has been recently designed and rolled out (2 years ago) and we run audits of teams in charge of industrialization. Nevertheless a central team dedicated to the industrialization has been kept.

A dedicated HR function completes the GSCT organization.

5. The industrialization team

The industrialization team is a group of 9 people in charge of only specific parts of the process around generic technologies:

  o 2 people for the assembly
  o 1 people for the molded parts
  o 1 people for the stamped parts
  o 4 people for the electronic: PCB, test means and assembly
  o 1 people for quality, method and tools of the industrialization

This team is in contact with the R&D centers and note with the factories. Schneider Electric has emphasized the upstream part of this process and the factories are involved in a further step. A common language has been set up for the new product development process around such projects. PMP is a formalized process dedicated for new products.
The difficulty in terms of management is to give quantitative objectives to that team and to measure a quantitative value-added. A team of technical and central experts generally works within a network of preferred contacts but not necessarily with the people they should work.

The way I have implemented for putting quantitative objectives is the SPS Industrialization and especially the audit grid. This SPS is less mature than the SPS Manufacturing. We don’t publish the results of those audits in order not to a too high pressure on those people. We want this audit to be perceived as a way to improve the industrialization process. This process forces the industrialization team to work on the topics which generate a value.

6. Learning value related to our central functions

Beyond the initial driving factors, the learning value from the last years is mainly the following:
- A formal system has to be built up;
- Any central function needs the most skilled people. Only the best professionals can join a central function. This dimension is the most critical;
- The confidence and the support from the top management has to be continuously updated and consolidated;
- The value-added of a central function has to be formalized and should be visible;
- Discipline and intelligence have to be present;
- The central headcount is limited in order to be sure it generates a measurable value and it impacts from their central position all the units of the company. This is the key mission of a central function: impacting the overall company;
- The key words are: definition and application of standards, quality of the provided service and simplification of the processes;
- Every year we generate a productivity on COGS (reduction of production cost) of 350 M€ and our next target is to be able to impact the top line;
- In order to manage the complementary levels of corporate, division, country and site, we have developed “skill network” in different key domains of knowledge within SPS which has to be shared such as Engineering, Inventory Management, Collaborative Sales Forecasts, SI&OP. The purpose is to make sure all parts of the organization shares the same level of expertise. In general, a skill network links people which are represented by a steering committee including around 12 people. They define a set of standards at the worldwide level and they propose evolutions and changes for some standards. Those changes are validated by the entities and available on Intranet. The person chairing such steering committee has been chose for his/her legitimacy in terms of expertise. Beyond this technical expertise, this person should have very specific pedagogical talents for stimulating the sharing, the transmitting of experiences and competences. This approach enables to get people involved in common topics of interest.
- The definition of standards is a continuous process and everyone is keen to enrich them and to make proposals.

7. HR and management dimensions

In terms of HR the objectives are related to internationalization, diversification of the profiles and genders. Those objectives are clearly a problem for us in our activity as the key success factor is the expertise and the competency which is by definition based on the experience and then on seniority. We face true challenges to increase diversity and the proportion of our female members.
Most of our team members are from mature regions (only 2 experts are from emerging / developing countries). All our plant managers are now local but it was not the case in the past. It has required time to replace expats who were in charge of most key operational functions and definitely more time than for other functions such as sales which require a lower level of expertise.

The key management competencies of people who join our team are:
- Ability to work in a network without any hierarchical link. Almost nothing works now within hierarchical organization. What is crucial is to have influence in a network mode;
- Mindset and behavior oriented to the improvement of the performance
- Pedagogy;
- Communication.

Training plays a big role for sustaining and sharing expertise. Training modules have been developed for the key topics related to our expertise.

There is no induction process for new team member and everyone is free to define his induction process on demand.

8. Interface with innovation

This is a difficult topic. The innovation at Schneider Electric is essentially pulled by the products and the markets. Innovation is poorly driven by the process. There are differentiating know-how but we are on generic processes and this is difficult to anticipate. We develop our innovation capabilities on the technologies for which we have a sufficient size and then against our competitors.

We try to focus on generic technologies. We consolidate and cumulate the know-how and we want to keep in house our competencies.