ArcelorMittal CapEx Department
Xavier Espot
Ensta Responsible: Richard Le Goff
L’industrie de l’acier est l’une des plus importantes et influentes dans l’économie mondiale avec un chiffre d’affaire de plus de 500 milliards de dollars américains'. Cette dernière pèse sur les décisions prises dans le secteur secondaire de manière générale et plus particulièrement les industries automobiles, de la construction et du packaging (leurs principaux clients). Bien comprendre l’industrie de l’acier et les interdépendances entre cette dernière et l’économie mondiale, peut être un moyen de décrypter les événements mondiaux (crise, boom de la construction, baisse de la production de voitures en Europe, boom d’activité en Chine...) 

L’une des stratégies d’ArcelorMittal (AM) qui lui ont permis de devenir le premier producteur d’acier mondial et d’être classé 41ème dans le magazine Forbes² (recensant les plus grandes entreprises mondiales) est d’équiper certaines de ses usines avec les technologies les plus avancées dans le monde dans le but de produire un acier de qualité et à un prix compétitif. Ainsi on comprend l’importance de dessiner une bonne stratégie pour la réalisation des projets qui ont besoin d’un grand investissement. C’est pour cela, que développer des outils d’aide à la prise de décisions stratégiques est très important pour un groupe comme AM

Le présent rapport détaille le cheminement ainsi que les résultats des cinq mois de mon stage au sein d’ArcelorMittal Purchasing (AMP). Tout d’abord, le groupe ArcelorMittal est brièvement exposé : historique, chiffres clés, activité et présence de par le monde. Mon département, ArcelorMittal Purchasing est ensuite présenté : son rôle, la raison de sa création et son organisation. Pour finir, nous nous concentrerons sur mon travail chez AMP et sur IPEC, l’outil utilisé pour faire des études stratégiques et de benchmarking, avec lequel j’ai travaillé.

The steel industry is one of the most important and influential in the global economy with a turnover of over U.S. $ 500 billion. The last, weighs on decisions taken in the secondary sector in general and more specifically the automotive, construction and packaging (their main customers). Understand the steel industry and the interconnections between it and the world economy may be a way to decipher the global events (crisis, the construction boom, lower production of cars in Europe, boom of activity in China ...)

One of ArcelorMittal’s (AM) strategies, which have allowed him to become the leading global producer of steel and be ranked 41st in Forbes Magazine² (listing the world's largest companies) is to equip some of its sites with the most advanced technologies in the world in order to produce a high quality steel at a competitive price. We now can understand the importance of designing a good strategy for the implementation of projects that require a large investment. For that, developing tools for helping the strategic decision making, is very important for a group like AM

This report details the progress and results of five months of my internship within the ArcelorMittal Purchasing (AMP). First, the ArcelorMittal group is briefly reviewed: historical figures, activity and presence throughout the world. My department, ArcelorMittal Purchasing is then presented: its role, the reason for its creation and its organization. Finally, we will concentrate on my work at AMP and IPEC, the tool used for strategic planning and benchmarking, with whom I worked.

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1 Taking into account the top 20 steel producers // En prenant compte des 20 premiers producteurs d’acier
Key words

AM: ArcelorMittal
AMP: Arcelor Mittal Purchasing
CapEx: Capital Expenditure (The CapEx department is a part of the AMP)
Buyers (Acheteurs): Referred to the responsible of buying of ArcelorMittal
Steel (Acier): The final product of AM. Consist Steel is an alloy that consists mostly of iron and has a carbon content between 0.2% and 2.1% by weight, depending on the grade. It is obtaining by processing iron ore (or scrap) with coke. It will be explained later with more detail.
GCCP: General Conditions for Capital Purchasing. This is a document, signed with the suppliers once, that is applicable for all contract and includes the general conditions that ArcelorMittal will have with their suppliers.
IPEC: Investment Project Evaluation and Comparison. This is the tool in which I have been working mostly during my internship
Raw materials (matières premières): Referring to coal or iron ore
Blast furnace (haut fourneau): Equipment where iron ore is melted with coke
Coal (Charbon): Raw material used in the blast furnace
Coke (Coke): Coal treated in the coke oven
Mines (Mines): Where coal and/or iron ore are extracted.
Slabs (dalles): One type of finished product
Coils (bobines): Another type of finished product.
Stainless Steel (Acier inoxidable): Steel with a high composition of chromium
ACIS (or ACCP): AM division for Asian and African countries
RFQ: Request for quotation
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Introduction

This rapport is going to explain my experience as an intern at the Corporate Headquarters of ArcelorMittal, the biggest steel producer of the world.

For a better understanding of the context where I have been working and my contribution, I’m going to use a Top-down approach.

I’m going to start explaining what I have learned about the steel industry and how steel industry work, for then explaining the stakes and situation of the steel industry. Later, we are going to see what is the position of ArcelorMittal in the market and some key figures and details of the enterprise. Once we would have understood how the market and AM works, I’m going to explain the position of the CapEx department within the group and how the department is organized. Finally, I’m going to explain what IPEC, what has been my direct and concrete contribution for the team and why it was very important for my job to be aware of what is happening in the steel industry and more concrete, in AM’s projects.
1. The steel industry

1.1 Steel

Before start talking about the stakes of the steel industry, and position of ArcelorMittal (AM) within the industry, we are first going to quick revise what is steel and the main processes involved. This will help to better understand the procedures and strategies of AM.

Steel is an alloy that consists mostly of iron. It has carbon content between 0.2% and 2.1% by weight, depending on the grade.

Steel can be obtained from iron, scrap or both. Usually, the process is like that: Iron ore is extracted from the mine and brought to the sintering plant, where is treated. Coal, is obtained from the mine, and brought to the coke oven, where is treated and transformed in coke. Then, both, iron and coke are introduced in the blast furnace. Then, the product obtained from the blast furnace, goes to the oxygen converted where is mixed with scrap (or not). There, the product is given the quantity of desired C and other products, like magnesium or tungsten, depending on the characteristics wanted for the final product. Then, depending on the final product wanted (slabs, blooms, coils, coated coils...etc), some processes would have place in order to obtained the desired product.

IN the next page, you can see an schematic design of the existing processes to obtain steel in an AM unit in Spain (Gijon).
1.2 Overview steel industry in the global economy

In 2008, the total production of steel by the 20 top steel companies was 541.40 Mt\(^3\), almost half of all the steel produced worldwide. During that year, ArcelorMittal, was leader steelmaker, producing more than 100Mt of steel, almost 10% of the world production.

In 2009, ArcelorMittal remained No 1 steelmaker, despite a fall of 29% in its production in 2009. Nippon steel, which was second in 2008, fell to fourth position after a 29.3% drop in production.

Six Chinese steel companies were in the Top 20 in 2009 and three of these are in the top 10 in 2009. China’s Shougang, Valin, and India’s Sail are new entrants to the Top 20 this year. Consolidation among Chinese steelmakers should continue in coming years.

\[^3\] Sources.: Worldsteel short range outlook-Aparent Steel Use (20Apr 2010, World Steel Association), ArcelorMittal 2010 half year report.
Top steel producers by volume (Mt)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Company</th>
<th>2008</th>
<th>2009</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ArcelorMittal</td>
<td>103.3</td>
<td>73.2</td>
<td>-29.1%</td>
</tr>
<tr>
<td>2</td>
<td>Baosteel</td>
<td>35.4</td>
<td>31.3</td>
<td>-11.6%</td>
</tr>
<tr>
<td>3</td>
<td>Posco</td>
<td>34.7</td>
<td>31.1</td>
<td>-10.4%</td>
</tr>
<tr>
<td>4</td>
<td>Nippon Steel (1)</td>
<td>37.5</td>
<td>26.5</td>
<td>-29.3%</td>
</tr>
<tr>
<td>5</td>
<td>JFE</td>
<td>33.0</td>
<td>25.8</td>
<td>-21.8%</td>
</tr>
<tr>
<td>6</td>
<td>Jiangsu Shagang</td>
<td>23.3</td>
<td>20.5</td>
<td>-12.0%</td>
</tr>
<tr>
<td>7</td>
<td>Tata Steel (3)</td>
<td>24.4</td>
<td>20.5</td>
<td>-16.0%</td>
</tr>
<tr>
<td>8</td>
<td>Ansteel</td>
<td>16.0</td>
<td>20.1</td>
<td>25.6%</td>
</tr>
<tr>
<td>9</td>
<td>Severstal</td>
<td>19.2</td>
<td>16.7</td>
<td>-13.0%</td>
</tr>
<tr>
<td>10</td>
<td>Evraz</td>
<td>17.7</td>
<td>15.3</td>
<td>-13.6%</td>
</tr>
<tr>
<td>11</td>
<td>U.S. Steel</td>
<td>23.2</td>
<td>15.2</td>
<td>-34.5%</td>
</tr>
<tr>
<td>12</td>
<td>Shougang (4)</td>
<td>12.2</td>
<td>15.1</td>
<td>23.8%</td>
</tr>
<tr>
<td>13</td>
<td>Gerdau</td>
<td>20.4</td>
<td>14.2</td>
<td>-30.4%</td>
</tr>
<tr>
<td>14</td>
<td>Nucor</td>
<td>20.4</td>
<td>14.0</td>
<td>-31.4%</td>
</tr>
<tr>
<td>15</td>
<td>Wuhan</td>
<td>27.7</td>
<td>13.7</td>
<td>-50.5%</td>
</tr>
<tr>
<td>16</td>
<td>SAIL</td>
<td>13.7</td>
<td>13.5</td>
<td>-1.6%</td>
</tr>
<tr>
<td>17</td>
<td>Handan</td>
<td>33.3</td>
<td>12.0</td>
<td>-64.0%</td>
</tr>
<tr>
<td>18</td>
<td>Riva</td>
<td>16.0</td>
<td>11.3</td>
<td>-29.4%</td>
</tr>
<tr>
<td>19</td>
<td>Sumitomo</td>
<td>14.1</td>
<td>11.0</td>
<td>-22.0%</td>
</tr>
<tr>
<td>20</td>
<td>ThyssenKrupp (5)</td>
<td>15.9</td>
<td>11.0</td>
<td>-30.8%</td>
</tr>
</tbody>
</table>

Total: 541.40 412.00

Regarding the future forecast demand for steel, it seems that steel’s demand is forecast to rise 5.3% by 2011. China’s apparent steel use in 2010 is expected to increase by 6.7% to 579mt after the impressive increase of 24.8% in 2009.

Source: ArcelorMittal Corporate website, World Steel Association, 2009 figures: (1) does not include share of Usiminas production (1.6 mmt), (2) does not include Yonglian (4.4 mmt) and Xixing(1.4 mmt), (3) includes Corus and NatSteel, (4) does not include Changzhi (2.1 mmt), (5) includes share of HKM.
Apparent steel use, finished steel (Mt)

<table>
<thead>
<tr>
<th>Regions</th>
<th>2009 (e)</th>
<th>2010 (f)</th>
<th>2011 (f)</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Union (27)</td>
<td>118.4</td>
<td>134.6</td>
<td>145.2</td>
</tr>
<tr>
<td>Other Europe</td>
<td>23.9</td>
<td>27.2</td>
<td>30.4</td>
</tr>
<tr>
<td>C.I.S.</td>
<td>35.8</td>
<td>39.8</td>
<td>43.0</td>
</tr>
<tr>
<td>N.A.F.T.A.</td>
<td>80.9</td>
<td>99.9</td>
<td>107.1</td>
</tr>
<tr>
<td>Central &amp; South America</td>
<td>33.6</td>
<td>40.4</td>
<td>43.1</td>
</tr>
<tr>
<td>Africa</td>
<td>26.4</td>
<td>28.7</td>
<td>31.3</td>
</tr>
<tr>
<td>Middle East</td>
<td>40.7</td>
<td>44.7</td>
<td>48.4</td>
</tr>
<tr>
<td>Asia &amp; Oceania</td>
<td>761.5</td>
<td>825.7</td>
<td>857.7</td>
</tr>
<tr>
<td><strong>World</strong></td>
<td><strong>1,121.20</strong></td>
<td><strong>1,240.90</strong></td>
<td><strong>1,306.20</strong></td>
</tr>
<tr>
<td>China</td>
<td>542.4</td>
<td>578.7</td>
<td>594.9</td>
</tr>
<tr>
<td>BRIC</td>
<td>640.9</td>
<td>692.1</td>
<td>702.7</td>
</tr>
<tr>
<td>MENA</td>
<td>57.5</td>
<td>62.9</td>
<td>68.2</td>
</tr>
<tr>
<td>World excl. China</td>
<td>578.8</td>
<td>862.2</td>
<td>711.3</td>
</tr>
<tr>
<td>World excl. BRIC</td>
<td>480.3</td>
<td>548.9</td>
<td>585.6</td>
</tr>
</tbody>
</table>

Crude steel production annual growth trend
Regarding the price evolution, the problem is that the price of raw materials (iron ore and coal) is rising and the price of steel is going down. This is putting a lot of pressure in margins.

Prices evolution (2009-2010)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HRC (US)</td>
<td>-33%</td>
</tr>
<tr>
<td>Iron ore (fines, CFR China)</td>
<td>+75%</td>
</tr>
<tr>
<td>Hard coking coal (FOB Australia)</td>
<td>+55%</td>
</tr>
</tbody>
</table>

Because of the crisis, prices of steel are falling down (in European an American countries, automotive, appliances, or constructions industries, negotiate for having a low price of steel, as they cannot pay more). However, the price of raw materials, is rising up for two reasons:

- The existence of a monopole of mining companies (BHP, Rio Tinto and Vale)
- The fact that China is consuming more and producing more steel each year and demands raw products. Besides, the fact that China, a closed market, is producing more steel than they need is generating a stock of finished product (steel). The exceeding stock is always sold at a lower price, as having stock is expensive, and this is also influencing to keep prices of steel low.
Regarding raw materials, it should be noted that global iron ore exports will almost double between 2009 and 2015, according to a new report from the Norwegian financial services group DnB Nor. In the report sent to Steel Business Briefing it forecasts exports in 2015 of more than 1.7bn tones compared with 894mt last year. The report states that Australia will remain the largest iron ore exporter, followed by Brazil. Australia exported 381mt in 2009 and is estimated to reach 423mt in 2010, reaching 779mt by 2015. Brazil’s exports are 269mt for 2009, 295mt for 2010, hitting 561mt by 2015. All the major exporting countries are forecast to raise their shipments. This includes India, where there is currently a vigorous debate about whether exports should be further restricted. The DnB Nor report sees Indian exports rising from 98mt this year to 118mt in 2015.

<table>
<thead>
<tr>
<th>Iron ore exports</th>
<th>Million tonnes. Source: DnB Nor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>381</td>
</tr>
<tr>
<td>Brazil</td>
<td>269</td>
</tr>
<tr>
<td>India</td>
<td>95</td>
</tr>
<tr>
<td>South Africa</td>
<td>44</td>
</tr>
<tr>
<td>Canada</td>
<td>30</td>
</tr>
<tr>
<td>Sweden/Norway</td>
<td>14</td>
</tr>
<tr>
<td>Mauritania</td>
<td>10</td>
</tr>
<tr>
<td>Peru/Chile</td>
<td>4</td>
</tr>
<tr>
<td>Guinea/Liberia</td>
<td></td>
</tr>
<tr>
<td>Sierra Leone</td>
<td></td>
</tr>
<tr>
<td>Ukraine</td>
<td>6</td>
</tr>
<tr>
<td>Latvia</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>894</td>
</tr>
</tbody>
</table>
2. ArcelorMittal

2.1 History and merger process

ArcelorMittal, was born in June 2006 as a result of the merger of Mittal Steel and Arcelor.

Created in February 2002 by merging of Aceralia, Arbed and Usinor, group Arcelor had for initial ambition to become the reference value in steel industry. Employing 95000 people on more than 60 countries, it was second world steel maker with 5 % of the world production (47 million gross steel) and a 30 billion Euros turnover.

On the other side, Mittal after merging in October 2004 with the American group “International Steel” was already first world steel maker with 57 million tons of steel produced per year for a 24.6 billion Euros turnover.

Both groups presented quite particular synergies which were really interesting for a future merger. Indeed, technical knowledge within Arcelor group and its innovation policy allowed manufacturing of special steels with strong added value. For its part, Mittal Steel group was able to produce high quantities of low-cost products to answer increasing world demand.

2.2 AM today

ArcelorMittal is the world’s number one steel company, with over 287,000 employees in more than 60 countries. ArcelorMittal is the leader in all major global markets, including automotive, construction, household appliances and packaging,
with leading R&D and technology, as well as sizeable captive supplies of raw materials and outstanding distribution networks.

An industrial presence in 20 countries exposes the company to all the key steel markets, from emerging to mature, positions it will be looking to develop in the high-growth Chinese and Indian markets.

AM values scale, vertical integration and product diversity. Approximately 35% of our steel is produced in the Americas, 47% in Europe and 18% in other countries such as Kazakhstan, South Africa and Ukraine.

ArcelorMittal main markets are:

- **Automotive**

  Worldwide no.1 supplier for automotive steels with a leading market share of 19%. Worldwide industrial presence via about 40 coating lines in Europe, North America, South America and Africa.

- **Construction**

  The largest market for steel: a 600 million tonnes steel consumption market comprised of diversified products. Emerging markets represent more than 50% of the square meters constructed each year globally. World leader with over 25 million tonnes of products delivered in 2009 to the building and construction industries.

- **Packaging**

  New packaging concepts constantly designed to achieve differentiation by steel solution (bottle can, easy open end...). Complementary industrial network in Europe with production plants and service centres near customers’ can making facilities.

Some key figures of ArcelorMittal:
<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales (US$ billion)</td>
<td>124.9</td>
<td>65.1</td>
</tr>
<tr>
<td>EBITDA (US$ billion)</td>
<td>24.5</td>
<td>5.8</td>
</tr>
<tr>
<td>Operating income/loss (US$ billion)</td>
<td>12.2</td>
<td>(1.7)</td>
</tr>
<tr>
<td>Net income/ (US$ billion)</td>
<td>9.4</td>
<td>0.1</td>
</tr>
<tr>
<td>Shipments (million tonnes)</td>
<td>101.7</td>
<td>71.1</td>
</tr>
<tr>
<td>Steel production (million tonnes)</td>
<td>103.3</td>
<td>73.2</td>
</tr>
</tbody>
</table>
3. Place of the CapEx department within ArcelorMittal group and activity they develop

3.1 Key figures

The CapEx department is a department that before the crisis was moving a budget of 7bn dollars. For 2010, it has a projected investment amount of 4bn dollars. Here below, we can see a figure with ArcelorMittal growth and non-growth CAPEX $bn:

Here down, we can see a chart were we can see the distribution by business unit:
We have to take into account that for next years, ArcelorMittal is focusing their activity in mining. As explained in precedent section, prices of raw materials are fixed by a monopole of 3 big companies. If ArcelorMittal is able to integrate vertically and have their own raw materials, they will no be that sensible to price change of raw materials.

In the image below, we can see the distribution of CapEx investment by purchase segment. As we can see, Broad Industry and Steel&Mining Specialized represent 85% of the department investment:

![Pie chart showing the distribution of CapEx investment by segment]  
- Broad Industry: 46%  
- Steel & Mining Specialized: 39%  
- Electricity and Automation: 13%  
- Earth moving Equipment: 1%  
- ArcelorMittal Sites: 1%

### 3.2 Objectives of the department

The responsibility of AMP/CPX is to focus on purchases with highest added value or strategic importance:

- Global actions stemming from synergies, and which may lead either to the implementation of master contracts, or to the bundling of several projects negotiations
- Direct management of the purchasing process for projects exceeding $2.5M and coordination and control of the Purchasing Process for orders below those thresholds

### 3.3 Organization

- AMP Capex Department (AMP/CPX) is structured into following activities:
  - Mining (Capex and Opex), Brownfield and Maintenance projects
  - Greenfield projects
  - Capex Purchasing Coordination which includes:
    - Sourcing Optimization
Capex purchasing coordination with Regional Purchasing Platforms
- IT & Telecommunications purchases (IT)
- Common support function dealing with:
  - Capex Market Intelligence (MI),
  - Capex Supplier Relationship Management (SRM)
  - Capex procedures and tools, Reporting
  - Quality management for the whole AMP scope, and coordination with AMS

Here below, we can see the organization chart of the company, including me at the top down of the same.

### 3.4 Process approaches

Within the CapEx department, the investment process is divided in 4 timing parts: Sourcing Strategy, Vendor Management, Purchasing/contract design and contract deployment.

The activities included in each process are:
• OP1. Sourcing Strategy:
  o Early Identification of User Needs
  o Purchasing strategy definition
  o Market Intelligence/ Trends analysis
  o Sourcing Optimization & Benchmarks
  o Risk management
• OP2. Vendor Management:
  o Search for potential suppliers
  o Supplier approval process
  o Supplier assessment
  o Management of supplier improvement
  o Top suppliers communication program
• OP3. Purchasing/contract design
  o RFQ process
  o Negotiation Process
  o Validation processes (IAC, EON)
  o Contract design
  o Purchasing performance reporting
• OP4. Contract Deployment
  o Contract implementation on site
  o Measure of contract deployment
  o Supplier assessment
  o Measure of user satisfaction
  o NC & Claim management

During my internship, I worked mainly in OP1. This is the part of the investment process more important and where decision making has more influence in the project cost. In the design phase, the project expenses are not yet important, but the impact of decisions made during this phase is huge. It’s during the design phase that you create the conditions to achieve or not Potential savings.

As we can see in the chart below, about 80% of the life-cycle-costs are generated by decisions in the design phase.
Being already seen the importance of taking good decisions at the design phase of a project, it is necessary to effort the design phase in order to take the good decisions.

For that purpose, benchmark is essential. This is why IPEC was created and why it is very important to support, deploy and improve IPEC is an intranet hosted tool, shared with Controlling and Engineering, for collecting technical and commercial information about capital projects. It has a common structure for technical data and cost breakdown collection, enabling technical and cost comparisons of similar equipment. IPEC facilitates IAC submission preparation by providing benchmark information, and cost avoidance ideas and allows sharing all potential suppliers worldwide including LCC’s. The main benefit of the tool, is that it facilitates knowledge exchange among units (more than 80 sites /600 persons trained) and let the group take advantage of their size.
4. IPEC

As I have already introduced before, IPEC is an information tool, used to share knowledge within the group and in what I have been mainly working during my time in AM.

4 years ago, after the fusion between Arcelor and Mittal steel, there were some needs in purchasing like:

- To know past or ongoing projects similar to mine.
- To share major equipment characteristics and costs → set up budgets, study alternatives.
- To share all potential suppliers worldwide including LCC’s.
- To know the supplier references and capabilities.
- To set up purchasing strategy.
- To know the equipment market price and give negotiation power.
- To develop synergies and framework agreements.
- To speed up and maximize the efficiency of the investment process.

The existing situation was that Information stored locally, and the large group experience was not shared efficiently.

Seeing these needs, the objectives were:

- To facilitate knowledge exchange among units → 71 major sites connected.
- To evaluate similar projects in terms of costs and characteristics in order to get a cost reference inside ArcelorMittal for each type of capital investment → > 2000 equipment items benchmarked.
- To standardize capital investment evaluation → 1 equipment item = 1 structure for budget and RFQ.
- To share suppliers information
- To optimize investments by proposing a cost avoidance strategy → > 97$M cost avoidance achieved in 2007.
- To improve the efficiency of the procurement process → Order placed 3 weeks after IAC, major savings before negotiation.

Our solution: Global benchmark methodology → IPEC
For these objectives, IPEC was created. So now, from the corporate headquarters, we ask project managers and buyers to update in IPEC all projects that are worth more than $2.5M.

We ask users, to update ongoing and historical projects. Regarding historical projects, after analyzing the tool deployment, as we’ll see later in this document, we decided to focus our strategy into “Coke Oven Batteries”, “Hot Strip Mill” and >$20M projects. Regarding ongoing projects, we asked to fulfill IPEC as a requirement for IAC approval.

For understanding better what IAC is and where it is placed in the timing of the project, we need first of all to take a glance to the investment process:
Opportunity assessment: define the industrial objective; confirm the opportunity and potentiality of the project indicate a rough estimation of the savings and of the cost.

Feasibility study: confirm the commercial and industrial objective, evaluate possible alternatives for the investment, assess the project feasibility, with rough cost estimation, and obtain a more accurate idea of the potential savings.

Functional Design: present optimized solution to reach the industrial objective, evaluate the cost of the optimized solution (+/- 15%), describe the functional design, calculate the profitability, and evaluate the risks of the project.

Technical Design: transform the Functional Design into technical specifications, optimize the technical solution, and be ready to place the main purchase orders, improve the accuracy of the cost and the schedule.

IAC approval

Negotiation: place purchase orders with best TCO.

Project execution: implement the project in accordance with the performance, budget, schedule and safety objectives.

Ramp up

Usually, we ask users to update information in IPEC, as soon as possible, but it is compulsory now to fulfill IPEC forgetting the IAC approval. So here below, you can see more detailed and with the IPEC implications, the actions that have to be done by IPEC users within the investment process:

TC = Technical coordinator  CC = Commercial coordinator  PM = Project manager  B = Buyer (local, regional or global)

IN the IPEC tool, there are 5 different views:
• My projects: see all projects and search for a project. In this view, the user can see all projects he has been given rights too, and can also enter the information of his project (Project overview with the general description and contact people, and also a Cost Breakdown Structure (CCBS)).
• My Orders: see projects with associated orders in a segment (for buyers only)
• Search (Projects, Orders, CCBS, Suppliers)
• Supplier: access to the supplier database
• Admin: access to the global CCBS and to account info

For the creation of the CCBS, the CapEx department:

• Worked with CTO and Technical Excellence to define a standard Cost and Characteristics Breakdown Structure (CCBS) for major equipment
• Validated the Cost Breakdown Structure (CCBS) with sites
• Decided a flexible structure for old projects data

The reasons for creating a standard structure for projects were that:

• More accuracy in benchmarking
• To facilitate the RFQ construction
• To better perform offers comparison
• Speed up the investment process

Finally, the IPEC structure for cost is like the figure below:
If you want to take a glance at how it looks this structure in an IPEC view, here below you can see a snapshot of a cost breakdown in IPEC.
Thanks to IPEC, technical coordinators and technical buyers worldwide are able to take a look and do some benchmarking with IPEC at the first steps of their investment process.

Besides, in the corporate, thanks to IPEC, we have also been able to make cost analysis of the global expenditures, like the ones below:
Of course good and reliable results, depend on the data quality, and this is why if users’ don’t input quality data, the results will not be very productive. The efficiency of the tool rely on the quality and the reliability of the data entered, so for boosting IPEC, what is very important is to incentive and convince users about the utility of the tool and the importance to update quality data.

Also, one very important remark to do about IPEC, is the confidentiality. As there is a lot of sensible information, we have to take care about:

→ Potential data leakages toward suppliers
→ Potential data leakages toward competitors

This is why, during my internship, I revise all users and their rights, as I will explain later.
5. My work with IPEC

My Project in ArcelorMittal Purchasing (now, AMP), was focused in IPEC. My mission was to deploy, analyze the deployment of the tool in order to set new deployment strategies and develop the tool itself. Besides, I also did maintenance, I used the tool for doing some benchmarking and I did some day to day work helping users with their problems with tool.

5.1 Help to deploy it: IAC’s, Projects follow-up and trainings

The mainly tasks that were done for helping the deployment of the IPEC, which we will explain in this section, were:

- Train people
- Ask to fill IPEC as an IAC requirement
- Follow up historical projects

5.1.1 Train people

For helping the deployment of the tool, we decided that one thing that was necessary, was to give training sessions to new people and people who had difficulties using the tool. These training sessions, were given in person, if the person was in Luxembourg or near Luxembourg (Belgium), or by phone and a web system. This web system let me show the trained people how to use the tool from my screen.

I usually divided this sessions in three parts, The first part, was a presentation explaining what was IPEC, why we created this tool, what was the utility and importance of IPEC, and also some remarks about the confidentiality of the information that was shared within the tool. The second part, consist in explaining the tool itself, how to use it, how is it structured and how to input data. Finally, I gave them a list with the projects they should update from their site.

This training sessions, required a very deep knowledge of the tool and the processes that were involved in the project or projects that the user was about to put the information in IPEC. So before giving training, I should prepare and understand very well all the projects that we were going to discuss.

Understanding the projects and the processes involved in the project, was important, not only for my own learning, but also to know how to introduce the cost breakdown in the tool structure and be able to discuss it with the buyer or the project manager. Without a good understanding of the project, this was not possible.
During my internship, I gave training to more than 20 people of 7 different sites.

5.1.2 Ask to fill IPEC as an IAC requirement

IAC, is the committee that decided if a CapEx project was approved or not. For incentive people using and introducing the information in the tool, we decided to make IPEC fulfilling, a requirement for IAC approval.

When there was an IAC date coming, I sent an email to all coordinators of the project that were going to the next IAC, remembering them that IPEC fulfilling, was a requirement for IAC approval.

Then, my job was to check if the information entered was correct and followed the structure. If the information was no correct or missing, I discussed it with the project manager and we tried to find a solution. Before IAC, I prepared a report with some statistics, explaining what projects introduced well the information, what projects didn’t and some explanations. Note that some of the project managers I discussed with, were very experienced people and responsible from projects that some times were more than US$20M worth.

There is an IAC each month, so I did it for May, June, July, August and September.

5.1.3 Follow up historical projects

Another thing that was done was to follow-up historical projects. For IPEC, not only the new projects that are going to IAC are important. AS the main goal of IPEC is to use the tool for Benchmarking, historical projects (project that are already finished) are also important.

For that reason, we check project from the last 5 years if they were correctly fulfilled as they were important for benchmarking. We started to analyze project by project and update and status list of project. After analyzing all projects, we send reports to 72 units, explaining them the status of their projects in IPEC and the need to update them and fulfill the information for benchmarking.

When analyzing the performance of user fulfilling information of historical projects in IPEC, we realized that

5.2 Analysis of IPEC deployment

A very important part of my internship was dedicated to analyze the deployment and the usage of IPEC. With IPEC, we were able to extract reports in excel forms, that
together with the reports that were done when analyzing and following-up the historical project, provide us a very complete information base.

The target of this analysis was not only to make a presentation explaining the deployment of the tool in the last two years, but to analyze what was the usage rate of the tool, see if people were updating information of the project regularly and set up a strategy to boost the utilization of the tool. So we had to identify the problems and find solutions for these problems. It was about analyze and problem solving.

I invest some weeks organizing working with excel. Organizing the information in excel to make it useful for us, thinking how and what kind of information we needed, how to extract it, etc. After, I spent also some days working with excel, mainly with some formulas (IF, RIGHT, VLOOKUP…) and pivot tables, in order to extract the information and have a clear picture of what was happening.

Finally, I did a presentation, where I explained the different issues per region, segment and type of projects. We ended the presentation with some recommendation and the definition of new strategies for the deployment of the tool.

This presentation is attached at the end, with the annexes, and called “IPEC Deployment”.

5.3 IPEC development: Technical Specifications

Besides, another big objective of my internship, was to improve the tool, making it more user friendly, detecting improvement points to help future analysis and make a document, called “technical specifications” that would be included in the contract with the IT consultants that were working to improve the tool.

For doing these technical specifications, the first step was to detect the improvement points. For that, we note all users’ complaints and after we made and excel list.

The second step was to catalogue this improvement points in “high priorities”, “medium priorities” and “low importance priorities”. We had a meeting with the team to decide what points should be considered in each category. Then, we requested for quotation to the IT consultants, who priced approximately each point. After that, we selected the ones that were more important for us, taking in account our budget and the price the consultant gave us.

Finally, I edited a document, specifying all the improvements we wanted and detailing exactly what we wanted and how the data base would be affected. That
document is very important, as it will be included in the contract signed with the IT consultants.

You can find this document attached at the end, with the annexes, and called “Technical Specifications for IPEC Improvement”. The final table with the prices and actions has not been included for obvious reasons.

5.4 Benchmarks

With the IPEC tool, users are able to extract benchmark reports for the equipments or projects they are intending to buy.

However, sometimes, users are not able to extract these reports for different reasons: they do not know how to use the tool, the information of the projects they are looking for benchmark has not been introduced correctly in the system, etc.

Many times, project managers and buyers from different sites worldwide, asked me to help them benchmarking equipments. In such situations, what I did was, first, take a look in IPEC and check if there was some information useful. Then, look for similar projects and contact the different projects manager or buyers of these projects about technical parameters, suppliers and prices. Afterward I elaborate a table, comparing the different characteristics and prices, taking into account the year of the project (if it was a price before the crisis or after) and I sent the table with some comments to the interested persons.

We can see here the kind of table I sent (please note that some data is missing and the table is not complete for confidential reasons).

<table>
<thead>
<tr>
<th>Person contacted</th>
<th>Site</th>
<th>Technical characteristics</th>
<th>Price</th>
<th>Commercial Characteristics</th>
<th>Year</th>
<th>Supplier</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Cleveland</td>
<td>Strip width 680 to 1830mm, material thickness from 0.4 to 2.3mm</td>
<td>x</td>
<td>X</td>
<td>2001</td>
<td>Techint</td>
<td>Price before the merge</td>
</tr>
<tr>
<td>X</td>
<td>Dofasco</td>
<td>HDG5 is 0,25 - 2 mm and the width is 700 - 1550 mm.</td>
<td>x</td>
<td>X</td>
<td>2004</td>
<td>Siemens</td>
<td>Before crisis</td>
</tr>
<tr>
<td>X</td>
<td>Piombino</td>
<td>HDG5 is 0,25 - 2 mm and the width is 700 - 1550 mm..</td>
<td>x</td>
<td>X</td>
<td>2006</td>
<td>DMS</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>Poland</td>
<td>HDG5 is 0,25 - 2 mm and the width is 700 - 1550 mm..</td>
<td>x</td>
<td>X</td>
<td>2009</td>
<td>TECHINT</td>
<td>Crisis Price</td>
</tr>
</tbody>
</table>

I did 3 benchmarks during my internship.
5.5 Maintenance: Users Lists

As I have explained before, IPEC, is a tool that contains big amounts of sensible information, and we had to be very aware about the person with access to IPEC and the kind of access they had to IPEC.

As during the crisis, there had been a lot of internal movements in AM, it was important to check if the people with IPEC access of each plant were the right persons and the rights that they had, were the right ones.

For that, I extract from IPEC, lists of users of each site, and send to the most important plants (more than 70) the registered users of their site. Then, I divided the into commercial and technical users, and I sent to each commercial and technical coordinator, the list of commercial and technical users of their site, to check if they were the rights ones, if we had to delete or change some right users or we need to add some new users.

As there were more that 140 lists (70 sites, 1 commercial and 1 technical list per site) I had to think of creating some system to control the responses. I create a control list, analyzing the site, if I send them the list, if there was a response, comment, etc.

I decided to start actualizing users in the system when the response rate arise at least 70%.

5.6 Day-to-day problem solving

As IPEC responsible, I was also in charge of solving users’ day-to-day problems. These problems were from different nature: from access right problems to tool technical usage.

Usually I had to solve right issues problems or give new right to some people who was changing of position. Some other times, I had to help some project manager how to solve some problems that they have with their project, like not finding the right equipment in IPEC.
6. Learning and final results

6.1 Project management (users list, follow up…)

During my internship, I learned about project management. I was responsible for some tasks, and it was my responsibility to manage the timing, the approach to solve the project, deadlines, the ways for analyzing how the project is advancing and be able to tell my bosses at any moment how was exactly the project and what % of completion I was.

For that purpose, I usually spend some hours thinking before start working in some project. During those hours, I organized the approach and the calendar for the project. Then I create some system to control how the project was advancing, as I explained before.

6.2 Dealing and teaching to groups of experimented people

I have had to deal with people much more experienced people than me in the sector, giving those trainings or correcting the way they were introducing information in the tool.

Doing that, has taught me how to deal with top experienced people (coordinators of sites that produce 3 million metric tons per year), give them trainings, speak and give some presentation in front of a group of coordinators, etc.

6.3 Stakes of the steel industry (weekly conference call, iron ore prices going up, steel price going down))

Every Monday during these 5 months, all the CapEx team, we had a conference call with the responsible buyers of the entire world:

- North America
- South America
- South Africa
- Asia
- Europe

During this conference call, everybody discussed about the situation of steel markets, the situation of different projects and suppliers worldwide, and we tried to look for synergies within the group.
I had always to pay attention and be aware of what was happening in ongoing projects and if there were new projects to come, and be able to help them proposing references of similar historical projects.

These conference calls have been a very important source of knowledge for me, as during those, I have learned about the stakes of the steel industry (one of the most influence industries in the actual economy). Also, I have learned how a big company manages big projects and how they try to look for global solutions for cost cutting.

Besides, the fact of being working at the corporate headquarters of a big company such as ArcelorMittal, gives you the possibility to have the complete picture of the purchasing procedures and the structure they have.

6.4 Technical processes of the steel industry and how work different kind of plants (visited plants, see projects worldwide, able to analyze the strategy of ArcelorMittal, focused on Mining and environmental projects)

Understanding the most important technical procedures is key, not only for personal learning, but for doing a good job in the department.

For understanding the different processes, I have read and study some books, visit plants (Gent) and discusses with other team members.

Besides, working with IPEC, has let me see projects worldwide and see for my own, what is the strategy or ArcelorMittal, focused in Mines projects, for extracting their own coal and iron ore, as the market prices of raw materials, are, nowadays, pretty high and the price of finished product (steel), pretty low.

6.5 Dealing with people from different nationalities and ways of working in different languages (Spanish, English and French)

Working with people from different nationalities is a very interesting source of learning and see how people with different background, education and culture work together.

Also, in AMP, there were people from 5 different nationalities who spoke different languages, which gave me the possibility to develop my business and technical language skills in Spanish, French and English.
6.6 Learning the importance and how to improving information tools.

Nowadays, data and information tools are the most important source of information for analyzing what is happening and design future strategies for the enterprise.

As I explained before, what I found very good from IPEC, was that:

- Benchmarks: With that tool, benchmarking is easy and useful
- The tool let cluster leaders to follow up all their projects very easy
- With IPEC, all information is contented in one tool. All the existing excel files that make the situation chaotic, are not needed any more.

Doing the technical specifications for IPE explained in the precedent section, has given me the possibility to see how to improve information tools and how to deal with IT consultants.

Besides, after my 5 months working with that tool, I realized that there are things that still can be improved such as:

- Lack of connections between different tools: In AM there are different tools used by different departments and they are not connected. This makes user’s of the plants to do double work some times. It would be a great idea to connect different tools.
- The tool is not very user friendly: This will be improved with the technical specifications
- More possibilities for doing analysis: the users should be able to do analysis with the tool, without needing to extract reports in excel for doing further analysis.

6.7 Analyzing information with excel and doing presentations that will be reported to segment responsible.

One of the most important tasks I have done in AMP, are the presentations of IPEC deployment. Learn how to use excel for analyzing data, is very useful. During my internship, I have been able to exploit all what I learned in my previous experience at McKinsey&Company. I elaborate several presentations and I worked intensively with excel to extract information and design future approach strategies.

Besides, doing presentations that are viewed by Vice-presidents, Senior Project Managers, corporate buyers…is very challenging and a very good experience for my future career.
6.8 Meeting risks

During my internship, I also invest one day in a department meeting, where we analyzed the short, medium and long term risk for the department. We looked for different ways for analyzing and estimate risks, and I also participate and make my part, suggesting different ways to measure risks.

One concrete participation, was to suggest a way to calculate the resources (human) needed for a project, in order to estimate the human resources needed in the department and see if there was a lack of human resources at the department.

6.9 Negotiation GCCP

GCCP, are general conditions, negotiated with the suppliers, that are applicable for all contracts involved this suppliers.

This document includes the general conditions that will affect all the contract signed with this company (for example, Siemens, Schneider...). I assisted to one negotiation of the GCCP with Jean-Luc Stiffkens, one of the corporate buyers.

The negotiation was very interesting and I could see how the strong position of ArcelorMittal helps for achieving the signature of favorable conditions for them.

6.10 Visit workshops

I have also visited a workshop here in Luxembourg, where I saw how they repair internally equipments from the entire world, because sometime it is cheaper to repair it internally that subcontracting an external company.

These repaired equipments, were usually going back to their original site, but sometimes, it was used as second hand equipment for other sites. It was a way for reducing Capital Expenditure. This is the reason why it was very important to know always what kind of equipments we have in the entire world, to see if before buying new equipment, we could use before one second hand.
7. Acknowledgements and final conclusion

The steel industry is one of the most influential activities in the actual economy. Doing an internship at ArcelorMittal, the leader steel producer, has given me the opportunity to learn and understand the stakes of the steel industry, as well as how a big firm works. In addition, the fact of being placed at the corporate headquarters, has given me the possibility to have a global picture of how the group works.

During my 5 months placement, I have been able to work with very prepared and professional people from all the continents worldwide. Besides learning team and enterprise working skills, my work in ArcelorMittal, has taught me the importance of collecting and analyzing data as well as the advantages and inconvenient of being a big group.

I really want to thank Karla Perez and Walid Rhannou the opportunity of being at the corporate headquarters of AM that they have given me.
8. Annexes
IPEC DEPLOYMENT

Contents

1. Commercial results per segment
2. Summary of results for technical users
3. Statistics per segment for technical users

July 2010
1) Commercial results per segment

• Order Updates for ongoing projects per project per segment (period May 2009 to May 2010)

The chart shows that there were 3.1 updates per project during last year (only from commercial users)
282 Ongoing Projects

1) Less than half of the ongoing projects have their orders introduced in IPEC.

2) It seems that buyers are not yet used to create their packages/purchasing strategy for orders before IAC. The main reason for that, might be the fact that they are often still not involved at this stage.

3) Commercial users are creating more orders in FCA, Mines and ACIS (except Temirtau).
• Order Updates for ongoing projects per order per segment (period May 2009 to May 2010)

The chart shows that each order is updated approximately 2.6 times per year. We expect each order to be updated, at least, every month.
• It seems that buyers are creating at least, 1 order per project.

• The main problem, is that buyers, are not updating their orders monthly in IPEC. They are updating their orders less than 3 times per year (see table below).

• AMDS and Stainless segments are not creating orders and updating them when projects are ongoing.

<table>
<thead>
<tr>
<th></th>
<th>n updates/project</th>
<th>n orders/n projects</th>
<th>n updates/n orders</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCA</td>
<td>2.9</td>
<td>1.1</td>
<td>2.7</td>
</tr>
<tr>
<td>FCE (including all Poland projects)</td>
<td>2.6</td>
<td>0.9</td>
<td>2.8</td>
</tr>
<tr>
<td>LCA</td>
<td>3.9</td>
<td>2.0</td>
<td>1.9</td>
</tr>
<tr>
<td>LCE (except Poland)</td>
<td>2.7</td>
<td>1.6</td>
<td>1.6</td>
</tr>
<tr>
<td>AACIS</td>
<td>2.7</td>
<td>0.8</td>
<td>3.2</td>
</tr>
<tr>
<td>AMDS</td>
<td>0.0</td>
<td>0.5</td>
<td>0.0</td>
</tr>
<tr>
<td>Mines&amp;greenfields</td>
<td>33.8</td>
<td>13.6</td>
<td>2.5</td>
</tr>
<tr>
<td>Stainless</td>
<td>-</td>
<td>0.0</td>
<td>-</td>
</tr>
<tr>
<td>Average</td>
<td>3.1</td>
<td>1.2</td>
<td>2.6</td>
</tr>
</tbody>
</table>
Buyers are updating less orders in the last 3 quarters

- FCA and LCA updating activity is rising but the global results have not increased, mainly because FCE and LCE have decreased their updates.
Final conclusion and recommendations

**ACIS:** Good performance in AMKR and South Africa, who are updating orders. Poor performance for Temirtau, who is not creating orders. Temirtau should start entering orders information and update them monthly.

**FCA:** Good performance in Dofasco, Cleveland, Indiana Harbor and Hibbing Taconite Company. Performance should be improved in CST, Canada Mines, Minorca and Burn Harbors. Updating activity has being rising up in the last quarters, they should continue like that.

**FCE:** Good performance in Florange, Bremen, Gent, Fos, Eko, Liege and Poland. Improvements needed in Asturias, Galati and Annaba. There are still more than 60% of projects without orders created. Buyers should start creating them. Updating activity has being going down in the last quarters, so buyers should keep updating their orders like before.

**LCE:** Improvement needed Annaba, Bergara, Rodange & Schifflange, Warszawa, Duisburg, Hamburg. Updating activity has been slowing down in the last 3 quarters. Buyers should inverse this tendency.

**LCA:** Needs improvement in Lazaro Cardenas, B-M Bekaert ARAMES SA and ACINDAR. In general terms, it seems that updating activity has been rising up.

**Stainless:** Needs improvement in all plants. They should start creating and updating orders in ongoing project, not only in cancelled, on hold or commissioned projects.

**AMDS:** needs to start creating and updating orders in IPEC.

**Mines&Greenfields:** It seems that buyers are creating orders for the ongoing projects. Buyers, are updating them, mainly in Liberia and Saudi. However, in the last quarter, updating activity has slowed down.
2) Summary of results for technical users

- Historical Projects
- Ongoing Projects
1) Level of completion of historical projects is low, specially in AACIS and LCE.

2) LCA and Stainless have better performance than the other plants.

3) Most plants have started entering data but still have to complete the detailed characteristics.
1) Good deployment for “on going” projects thanks to IAC leverage

2) Still needs improvements especially in LCA, FCA, FCE and Stainless.
3) Statistics per segment for technical users

- Historical Projects
- Ongoing Projects
Status of Historical Projects in IPEC (Worldwide)
360 Projects
Most projects that have not been started are from CST and Lazaro Cardenas

Most projects that have been completed in IPEC are from Dofasco, Cleveland, CST, Indiana Harbor and Burns Harbor
Status of Historical Projects in IPEC per segment

LCA 21 Projects

Most projects that have been completed in IPEC are from Brazil and Argentina.
Status of Historical Projects in IPEC per segment

AACIS 58Projects

Most projects that have not been started are from Temirtau
LCE (except Poland)
40 Projects

Status of Historical Projects in IPEC per segment

Annaba has not started to update IPEC.
Poor updates for projects in Duisburg, Hamburg, Zaragoza and Zenica.
Projects that have been completed are from Belval, Differdange and Hunedoara.
Status of Historical Projects in IPEC per segment

Stainless
23Projects

Projects that have not been started are from Carinox and Timoteo has not completed the detailed characteristics for most projects.

Projects that have been completed in IPEC are from Gueugnon and Genk.
Status of Historical Projects in IPEC per segment

FCE (includes all Poland projects)
145Projects

FOS has not started the detailed characteristics in 60% of the projects.

Dunkerque and Ostrava are not entering the detailed characteristics.

Asturias, Sagunto and Poland are the plants with a higher percentage of completed projects.
3) Statistics per segment for technical users

- Historical Projects
- Ongoing Projects
IPEC Status for ongoing projects (Worldwide)
271 Projects*

* Not taking into account mines and AMDS projects
Status of ongoing projects in IPEC per segment

FCA 50 Projects

Projects that have not started to update IPEC are from Burns Harbor and Lazaro Cardenas
Status of ongoing projects in IPEC per segment

LCA 7 Projects

Improvements can be done for entering the detailed characteristics

All projects started
Status of ongoing projects in IPEC per segment

AACIS 40 Projects

Globally AACIS has a good performance updating “On going” projects.
Status of ongoing projects in IPEC per segment

LCE (except Poland)
25 Projects

Globally LCE has a good performance updating “On going” projects.
Status of ongoing projects in IPEC per segment

Stainless 12 Projects

- Not started: 25%
- Missing some information (Only Project overview started): 8%
- Project updated (CCBS Started): 67%

Projects from Carinox and Gueugnon still need to be filled
Status of ongoing projects in IPEC per segment

FCE (includes all Poland Projects) 137 Projects

Projects that have not been started in IPEC are mainly from Florange and Industeel

Ostrava is not filling in the detailed characteristics
3) Action Plan

<table>
<thead>
<tr>
<th>Task</th>
<th>July</th>
<th>August</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrange meeting with CapEX regional coordinators</td>
<td>from 12 to 15</td>
<td>from 12 to 15</td>
</tr>
<tr>
<td>Set meetings/with regional leaders to discuss their role</td>
<td>from 18 to 25</td>
<td>from 18 to 25</td>
</tr>
<tr>
<td>Do meetings with CTO, corporate and regional</td>
<td>from 18 to 25</td>
<td>from 18 to 25</td>
</tr>
<tr>
<td>Distribute Statistics to TC, CC, CTO and Segment heads for Capex.</td>
<td>from 18 to 25</td>
<td>from 27 to 30</td>
</tr>
<tr>
<td>Include an email from Dominique to remind importance of IPEC.</td>
<td>from 2 to 6</td>
<td>from 9 to 13</td>
</tr>
<tr>
<td>Focus on historical projects: Arrange phone call with TC and CC to</td>
<td>from 9 to 13</td>
<td>from 16 to 20</td>
</tr>
<tr>
<td>discuss deployment and set new deadlines</td>
<td>from 16 to 20</td>
<td>from 23 to 27</td>
</tr>
<tr>
<td>Improvements of the search function in the tool to encourage users</td>
<td>from 23 to 27</td>
<td>from 23 to 27</td>
</tr>
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Ipec

TECHNICAL SPECIFICATIONS FOR IPEC IMPROVEMENT

Xavier Espot
ArcelorMittal CapEx Department
Intelliplanner
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1. Global Objective

The global objective of IPEC is to compare similar projects in terms of costs and characteristics in order to get a cost reference inside ArcelorMittal for each type of capital investment.

The objective of this document is to get a quotation for items mentioned, in order to decide what features to improve. This document will be part of the future contract that will be signed to improve the tool.

After two years of implementation, we have realized the need to do some modifications and improvements to the tool. We intend to make the tool more user friendly, allow users to extract IAC purchasing template directly from IPEC to avoid double work and improve the search/reports function. We expect this changes will impact in a positive way the deployment of the tool.

This document includes all the changes that the CapEx department considers as high and medium priority.
2. Extisting process and structure of this document

IPEC tool has different views: “My projects”, “My orders”, “Search/Reports”…

This document includes what the CapEx team considers as a high priority changes and medium priority. Each proposed change, has a header that summarizes the type of change, followed by a detailed description of the modification. At the end of each modification/improvement, it is noted the views that would be affected by this change.

At the end of the document, there is a resume table that can be used as a follow-up table.
3. **List of changes**

   3.1 **High priority changes**

   ➢ **Home page redesign**

   Home page design should be more attractive and useful. It should include the following 3 icons:

   1. The first icon should be a file called IPEC Presentation. This icon will open a ppt document called IPEC Presentation.

   2. The second icon should be a folder called IPEC Tutorials. In this folder, there will be the following documents:

       ♦ Global tutorial (.doc)
       ♦ Steps to create an order (.doc)
       ♦ Steps to update Project Overview & CBBS (.doc)
       ♦ Complete CC structure in excel (.xls)

   3. The third Icon should be a folder to update “CAPEX SnapShot” this will be updated each quarter.

   Besides, there should be also the image of the IAC calendar: It should be a document linked to a calendar, where users will be able to see dates of IAC. Only some determined users from corporate, will have rights to introduce events and modify the calendar. All other users, will only have rights to read it.

   It should also include some image of the steel industry, which will be provided later by the CapEx department, and the word “IPEC/CAPEX TOOL” should be at the top of the home page. Administrators should be able to update the documents without the help of the consultants. In addition, the home page should include the world IPEC as a title.

   **Views affected:** Home

   ➢ **Documents download**

   Users should be able to download all documents to excel with any version of explorer in all views. Nowadays, only users with the Internet Explorer 6 can download documents.

   **Views Affected:** My projects search, My projects CCBS, My orders search, My orders details, Search/Reports, Suppliers.
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- **Avoid scroll need**

Presentation: The Square where the filters are shown should be centered and enlarged. My project and My Orders screen should not have to be scroll to right to see all filters and search buttons (search button should be visible to users without need to scroll). Also, delete country and project spec receipt date from table shown at My Projects and My Orders search.

Views affected: My Projects search and my orders search.
Affects also controlling views

- **Save filter selection**

There should be the possibility to save filter selection in my projects and my orders search. The idea is to be able to select some filters and save them as predefined. Every time the user will try to look for some project, these predefined filters will be selected. For that purpose, we will add two buttons above the actual “search” button:

- “Save Filters”: After the user select his filters; if he clicks on this button the system will save these filters as the predefined ones.
- “Clear”: When clicking this button, all filters selected will be cleared.
- We do not want the system to save the last search done by the user, we what him to chose the filters he need and allow him to save them.

Views affected: My projects search and my orders search
Affects also controlling views: Change controlling selection to default any

- **Display only some words of the history fields**

Modify history field so it does not affect the format of the table. The columns of “highlights/Events” and “areas of concern” should only display the first 20 words of the field and add at the end three points if there is more text not displayed. Then, the system should display all information when user placer cursor over.

When reports are extracted and viewed on the screen, text fields such as project description, purchasing strategy, technical and other comments should show all text ( when downloading all text should appear).

Views affected: My projects search, my orders search and search and reports.
Affects also controlling views

- **Link “Project Status field” to “Approval Status”**
Once a project approval phase and approval status has been put “on hold”, cancelled or archived by controlling, the field “project Status” in the Project overview should be updated accordingly. This modification should update both existing projects and new projects.

Views affected: Project overview
Affects also controlling views

➢ **Create report “Global CapEx procurement Checklist”**

All fields in the template “Generate Global CapEx procurement checklist” (see page 8) should be included in IPEC. Users should be able to download this template in the project Overview using a link “Generate Global CapEx procurement checklist”(GPC). For that purpose, Overview should change accordingly.

Fields from “the project overview” that are part of this template, like project title, IPEC code, segment, sub segment, plant, date, currency, investment amount, class of the investment, category of the investment and description of the purchasing strategy, should have the letters GPC added in the right side.

A check list should be added to the project overview like the one shown in the template below. Users will be able to select or unselect the different elements of the following check list:

- Purchasing strategy defined with AMP
- LCC Supplier involved
- IPEC completed (Project overview, cost breakdown and bids)
- Supplier panel validated by AMP
- In-house workshops contacted
- Cost Benchmarking completed
- Available equipment checked (SHE)
- Detailed cost breakdown
- Synergies or bundling opportunities

A new text field called “sourcing Options (LCC, in-house, 2nd hand)” should be added to the “to the Project Overview” this field should appear below purchasing strategy field and linked to this template.

The information for the template part called “Main Expected Purchase Orders” should come from a link to Orders Details. If the user has created orders for this specific project, the template should create this table by including the budget for each order, currency, Order code, Equipment/Package=Order Description, suppliers involved. If there are no orders created, a message saying no orders have been created in IPEC for this project should appear in the template when it’s downloaded. The field IPEC Code should be linked to the order Code, and the field equipment/package to the order description.
The field other comments, should be linked to the field “highlights/events”.

The idea is to be able to click in a link called “Generate Global CapEx procurement checklist” and then the system will print a page like sheet below:

In the project overview, the letters GPC should be added in the right side of all the fields that the users needs to fill in to generate this template.

This template should be generated and printed in one only A4 page.
If a field is not completed a message should pop up informing the user which field is missing. **No data should be lost if the error message pops up after the user clicks ok.**

Views affected: Project overview and order details.

- **Add last years in turnover cells**

In the suppliers view, there is a row at the end, called “turnover”. In this row, there are spaces to fill for years from 2003 to 2008. It should now go from 2003 to 2010. There should be the possibility to add any year.

Views affected: Suppliers view

- **Move “Quick create suppliers” button**

Move button of Quick create suppliers so it is visible without scrolling the window to the right.

Views affected: CCBS and order details

- **Data should not be lost when error message pops up (Very important)**

An error message pop up should appear when a user exceed max characters in the text fields. The system should display an error message but when the user clicks ok the data should not be lost.

In the existing error message related to project status which appears when project is set on execution, commissioned, in performance review or final closed but the project has not been approved by controlling. The system should display an error message but when the user clicks ok the data should not be lost.

Views affected: Project overview, order details and CCBS.

- **Improvements in the search/reports usage**

The idea is to have a big icon at the right of the screen called “predefined search”. When clicking at this icon, the system will automatically select a list of predefined filters in “Parameters to view”. Then, the user will only have to select the equipment and the conditions he wants.
For these searches, there will be a predefined search that will include the following “parameters to view”:

**Benchmarks:**
- Project Code
- Project Name
- Project segment
- Project Plant
- Project Description
- Project Approved Investment amount
- Equipment Scope & Description
- Equipment Cost Stage
- Equipment Total Cost
- Equipment Technical Parameters
- Equipment Supplier Awarded
- Equipment Technical & Other Comments

And also the following project conditions:

- Purchasing status: “Project execution”, “commissioned”, “in performance review” and “financials closed”.

**Projects:**
- Project Code
- Project Name
- Project segment
- Project Plant
- Project Investment level
- Project Category
- Project Description
- Project Estimated Investment amount
- Project Approved Investment amount
- Project Last updated
- Project Authorized?
- Project Statuts
- Project Manager
- Project Local Buyer
- Project Budget Year
- Project Highlight/Events

And also add the following condition:

- Condition to select the primary equipment and left the selection blank in order to let the user the possibility to introduce the primary equipment.

**Suppliers:**
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- Supplier Name

Also, add the following supplier condition:

- Can supply

There will also be an icon called “clear”. When a user will click on this icon, all selected filters will be blank.

Views affected: Search/Reports

➢ **Keep titles frozen**

Keep title frozen; like in excel, in my projects search view (also in search&reports results, my orders and CCBS views)

Views affected: My projects search, My projects CCBS, My orders search and search/reports.
Affects also controlling views

➢ **CCBS information should not be lost**

Users sometimes save the CCBS, and then information, sometimes is lost. This should not happen again in any case.

Views Affected: CCBS

➢ **Add text “only for corporate orders”**

In order details view, at the right of the field where you attach the End Of Negotiation document, add text in red and capital letters “ONLY FOR CORPORATE ORDERS”

Views affected: Order details

➢ **Replace “e-auction” name**

Replace the “e-auction” name found in the order details by a “TCO final price”

Views affected: Order details
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➤ **Change “order status” names**

Change name of the “order status” in order details. Nowadays, the proposed choices seem mixed with the project status. These names of the order status should be changed as detailed a continuation:

- Feasibility study: Sourcing phase
- Functional Design: Tender launched
- Technical Design: Technical alignment/Commercial comparison
- Final Negotiation: In negotiation
- Execution of the order: Order launched
- Provisional acceptance: Provisional acceptance pronounced
- Final acceptance: Final acceptance pronounced

Please, note that this change will affect the search filters of the search&reports view. Also, this equivalence should be respected with the order status for old orders introduced in order to find these orders when going a new search with the new names of the parameters.

➤ **Change display of selection filters**

When you do a search and you select some filters, the system doesn’t show the filters you have selected unless you put the mouse on the filter. The system should show the parameters selected, and hide the ones that have not been even if the mouse is not on the filter. When the mouse is on the filter, the system should display all the parameters and mark in blue the ones that have been selected. Also, the filter “any”, should be replaced by “all”.

**Views affected:** My projects search, my orders search and search/reports.
Affects also controlling views

➤ **Automatic Mailing**

When a user updates some project, an automatic mail should be sent to the Coordinator, Project Manager, Local Buyer and Lead buyer.

**Views affected:** My projects overview, CCBS, my orders details.

➤ **Add Approval status conditions**

For all searches (benchmark, project, order, supplier…), in the “Project Conditions” field, add the possibility of filter by approval status (Replace in parameters “authorized/not authorized” by “approval stage”). This approval status, will be linked to “controlling project status”
Also, for My projects and My Orders, the field approval stage should be replace by the one controlling has called project status, but ours, should be called approval status.

Views affected: Search/Reports, My projects search and My orders search

- **Modification of Cost Comparison sheet and order details**

The cost comparison sheet generated in My orders, should look like the one below. Note, that the only changes respect the actual one, are the fields that are in yellow. Those fields that should also be added in the order details are:

- Equipment weight
- Price $/kg (or the correspondent currency)
- Also, add the 4 following fields:
  - LCC considered: with a drop down menu to select Yes/No and another field with a space to type, called “if not, why?”
  - Int. Workshops considered: with a drop down menu to select Yes/No and another field with a space to type, called “if not, why?”
  - Order entered in IPEC: with a drop down menu to select Yes/No and another field with a space to type, called “if not, why?”
  - Synergies with other sites: with a drop down menu to select Yes/No and another field with a space to type, called “if not, why?”
- A field to add another signature, called PP CoE CAPEX Head. (see sheet below)
What is very important is that this cost comparison sheet should be generated in an A4 page and printed in a one-side A4 page.

### 3.2 Medium priority changes

#### Possibility do delete searches

If a user is given rights to see a search by some other user, he/she should be able to delete that search appearing from his/her list. User should be able to select the search by clicking next to it and then a button delete should be added.

Views affected: Search/reports

#### Changes in usage reports

Now, when you extract a user report, the system gives you the updates of all users, including the users from controlling. There should be an option that allows separating controlling users from IPEC users when extracting usage reports on projects. Usage report should allow you to filter by approval phase or project status.

Views affected: Search/Reports
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➢ **Hide “can supply” columns**

In the supplier view hide can supply from main table.

Views affected: Suppliers view

➢ **Show who was the last person who update**

Show name of person that last updated any information of the project (also in the Order details) at the top left of the page. This should be based on the privileges to separate controlling users from IPEC users.

Views affected: Project overview and order details
Affects also controlling views

➢ **Remove link button when uploading a file**

During upload of a file, remove the link button and have the link to the file automatic. Is it to say, that when clicking on the upload button, automatically, upload and link the document.

Views affected: Project overview and orders details.
Affects also controlling views

➢ **“No editing privilege” bigger tip message**

When a user do no have editing rights in some project, there should appear a bigger tip message saying “no editing privilege” at the top of the page.

Views affected: Project detail, CCBS and orders details.
Affects also controlling views

➢ **Download suppliers details**

Add the possibility to download supplier’s details

Views affected: Suppliers view
4. Table of contents for follow-up