



# Understanding the Relationship between the Engineering Department and Its Business Partners

An Online Continuing Education Course for Engineers

**Course Number: FM-1003**  
**Credit: 1 Hour / 1 PDH / 1 CPD**

# Understanding the relationships between the Engineering Department and its business partners

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# 1 Preliminary Considerations

The Engineering Department does not only function as a part of the Company it belongs to, but also operates in the context of the general market. Understanding the relationship between the Engineering Department and the other departments in the company, as well as the relationships it has with other outside organizations, is one of the basic steps in ensuring in the efficiency of the Department and in supporting the success of the Company as a whole.

In many companies those relationships are less than ideal. Sometimes certain departments have strict rules that affect the whole Company (and maybe for good reasons) but that at the same time restrict the free activities of other departments, including the Engineering. A typical example is the case of the IT Department that is restricting the read/write/admin rights on the Company's computers for security purposes, which at the same time is increasing the down time when installing or upgrading engineering software.

Moreover, one has to recognize that during the routine business activities the departments are not always fully collaborating but they are also competing for resources. Sometimes some departments are trying to make their work easier by trying to get the others to do as much as possible or are even trying to take credit for other's achievements. It can be argued that the competition among departments is healthy, however, many departments are treating this more as *rivalry* and less as *teamwork*. For its part, the Engineering Department needs to recognize this situation and do its part to contribute to healthy relationships with the other departments and outside organizations. When this happens all parties are mutually gaining and the Company as a whole emerges stronger and in a better position to compete in the market.

Ideally, the Engineering Department has smooth, successful rapports with all of its business partners, both inside and outside the Company. This means that when someone in the Department is expressing a work-related need, that need is tended to promptly and with a successful outcome. One has to recognize that although other departments' *raison d'être* is to support all the other departments in the company, this can lead to a long queue before the requests are actually answered. The same is true

about the outside organizations that have a working relationship with the Company. Companies naturally tend to service the projects that are most important to themselves, not to their clients (this in spite of any “official” position that the clients are “bosses”) – they tend to service the most significant project first (of strategic importance, price, etc.).

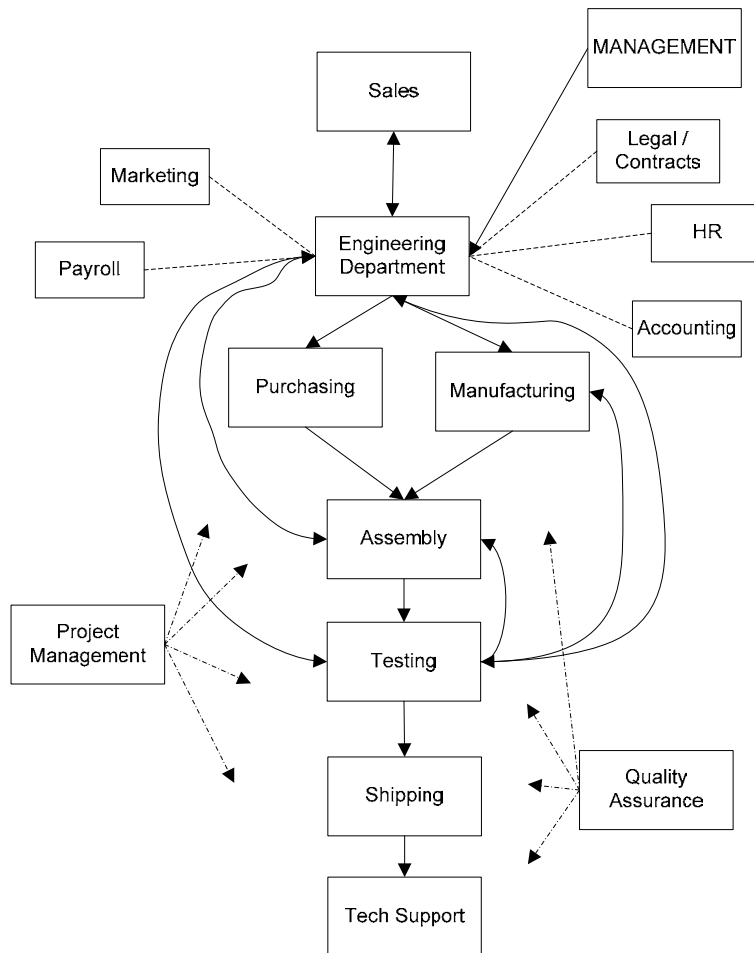
This course is not meant to place anyone ahead of the queue, much less attempt to decide the urgency of each request. It is meant to lead to a better understanding of nature of the relationships between the Engineering Department and the other departments in the Company, as well as with 3<sup>rd</sup> party business partners. A better understanding will allow the Engineering Department to better manage those relationships, which in turn will lead to a more successful Company.

## **2 Interfacing with other Departments in the Company**

As stated before, Engineering Departments do not function isolated – they are an integral part of the Company as a whole. Ideally, there is a mutually advantageous relationship between every Department in the company. The smoother the relationship between the Engineering Department and the other departments is, the easier their work becomes. The Figure 1 shows the relationship between the Engineering Department and the other departments in the Company, which replicates the typical project workflow.

For the sake of simplicity, this figure only shows the relationships particularly relating to the Engineering Department, not as they are in the context of the company. Although the Supporting Departments are shown only in relationship with the Engineering Department, it should be noted that they also support the other departments as well, not just the Engineering Department.

Here, the solid arrows indicate the typical work flow, while the dotted lines indicate the supporting work relationship. Note that, although not illustrated here, the Engineering Department is not only feeding work to the Manufacturing and Purchasing Departments, but it is also continuously assisting them until the final product/project is delivered.



**Figure 1:** Relationship between the Engineering Department and other departments in the Company

The relationship between the Engineering Department and the other departments is guided by the type of work performed by the other departments. Those departments can be Collaboration Departments (in which case the collaboration is vertical) or Business Support Departments (in which case the collaboration is horizontal).

### 2.1 Collaboration Departments - Vertical Collaboration

This relationship is guided by the project cycle inside the company, in which the workflow is usually generated by a Sales Order and is developed thru a series of activities until fruition (Shipping and/or Customer Support). Figure 1 shows that the Engineering Department is in the middle of a sequential work flow and the Collaborating

Departments are the beneficiaries of the Engineering Department's work; examples of those departments are Purchasing, Manufacturing, Sales (for pre-sales support), etc.

During the typical workflow, the Engineering Department receives the Sales Order from the Sales Department (which becomes the "project"), adds value to the project and then passes on the project to the Manufacturing or Purchasing Departments. The "added value" represents not only the drawings, associated part lists needed to be manufactured or purchased and technical documentation, etc., but also face-to-face communication or emails, that ensures that the written instructions are fully understood. For example it is common that the Sales Department and the Engineering Department interact even before the Sales Order is received, in which case the Engineering is providing the technical support needed to win the Sales Order. The project is usually handled by a Project Manager, that can be a person inside of the Engineering Department, a Project Manager inside a formal Project Management Department, or any other employee that has a thorough understanding of the product and the product's lifecycle in the Company.

This type of collaboration is usually well defined, well-structured and well implemented. Each of the Departments has a clear expectation of the information it expects and at the same time has to feed the other Departments in the workflow precise and complete work details. This constitutes the "routine" work of the Company.

Besides the routine project work, the Engineering Department needs to make itself available to support the downstream departments (like Manufacturing, Testing, Technical Support, etc.) by clarifying any technical issues that may arise after the work has left the Engineering Department. This type of collaboration is of general-technical nature (including technical and costs feasibility analyses, presentation of the proposed solution, etc.). Its purpose is to support the other departments' activities, not do their work.

In this case, the Engineering Department is working with the other departments in the project workflow on equal footing to achieve a common goal. This relationship has to be one of open collaboration. The work typically iterates until both parties are happy with the result. Examples include:

- creating product specifications for a new product: working with the Sales Department as needed
- resolving inquiries from existing clients: working with the Tech Support Department as needed
- defining relevant tests for new products and prototypes, and interpreting the test results: working with the Testing Department as needed

This type of collaboration is usually viewed as “disruptive”, since it happens unpredictably and it cannot be planned. Many work conflicts can arise in this instance, when other departments are making important non-routine requests while the Engineering Department does not have the adequate resources to answer them. The Engineering Manager needs to understand this and allow resources (time and money) for easy collaboration between the engineering team and the other departments.

One other thing that needs to be mentioned here is that in this case the conversations are taking place with technical personnel, who are more likely to understand the engineers’ technical thinking. Even in this case, the engineers may need to adapt their thinking and simplify their vocabulary such that their point is well understood by technical people from different disciplines and/or with a different training.

## 2.2 Business Support Department

The Business Support Department (BSP) is a department within the Engineering Department with administrative tasks. Examples include Maintenance, Purchasing, Contracts, Payroll, etc. Depending on the size of the company, the BSP may be formed by specific departments (in the case of large companies) or just one or a few employees (in the case of small companies).

The Engineering Department needs their support. The Engineering Manager by establishing processes and rules that need to be followed. Once the rules are set, the daily functions are performed by the manager’s designee or just by the

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