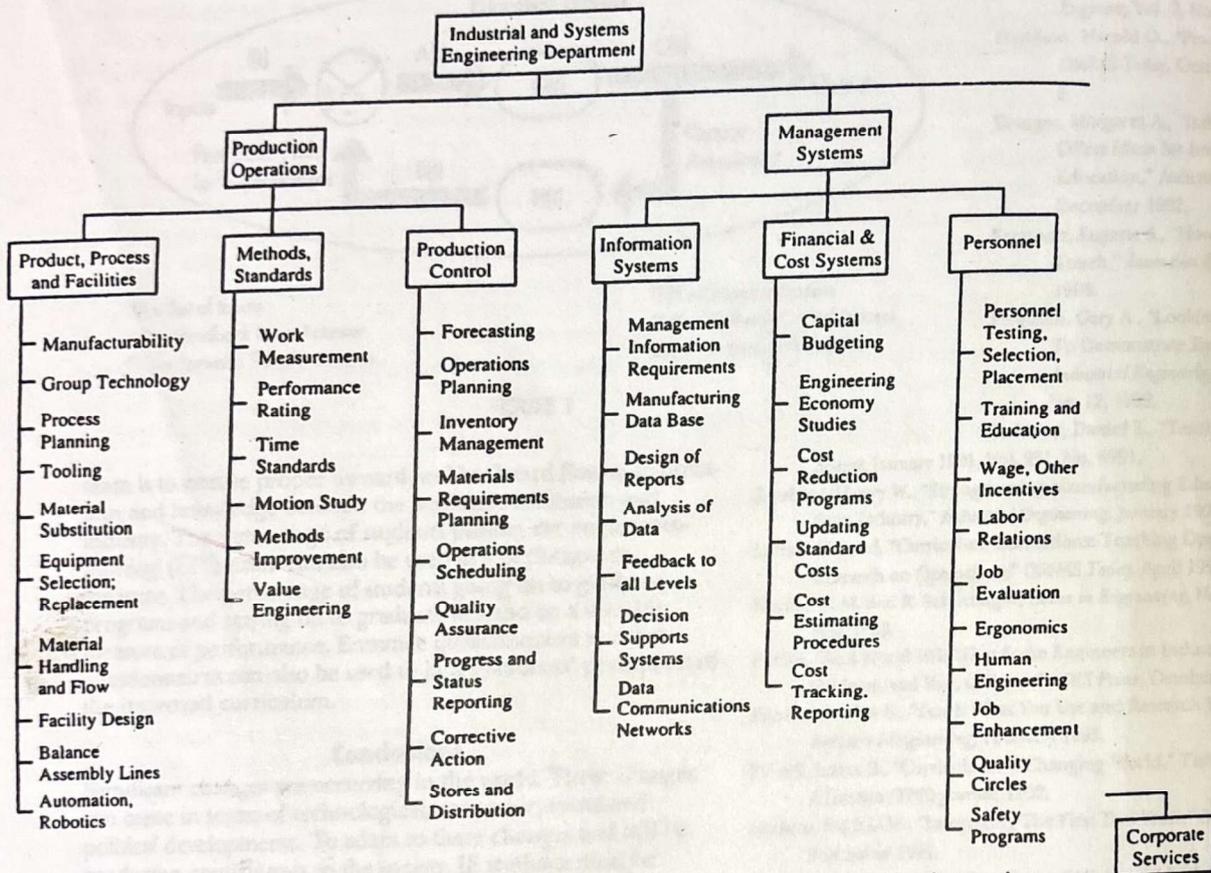


# CHAPTER 2

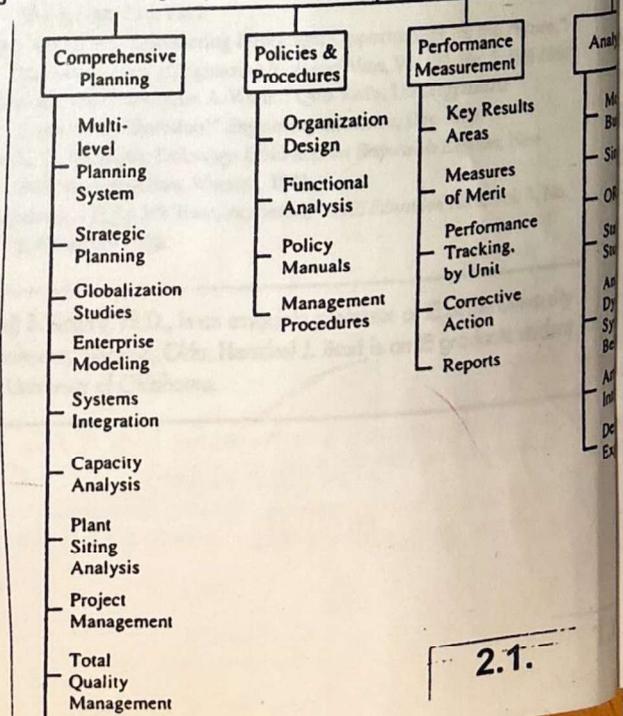
## VARIETY OF ROLES AS AN INDUSTRIAL ENGINEER

### TUNING IN:

**Organisation is** the structure of how a company operates. It reflects the culture, management vision and integrity among the functions run. In a manufacturing company an Industrial Engineer can take over a variety of roles.



Industrial and systems engineering department organized by major functional groupings.

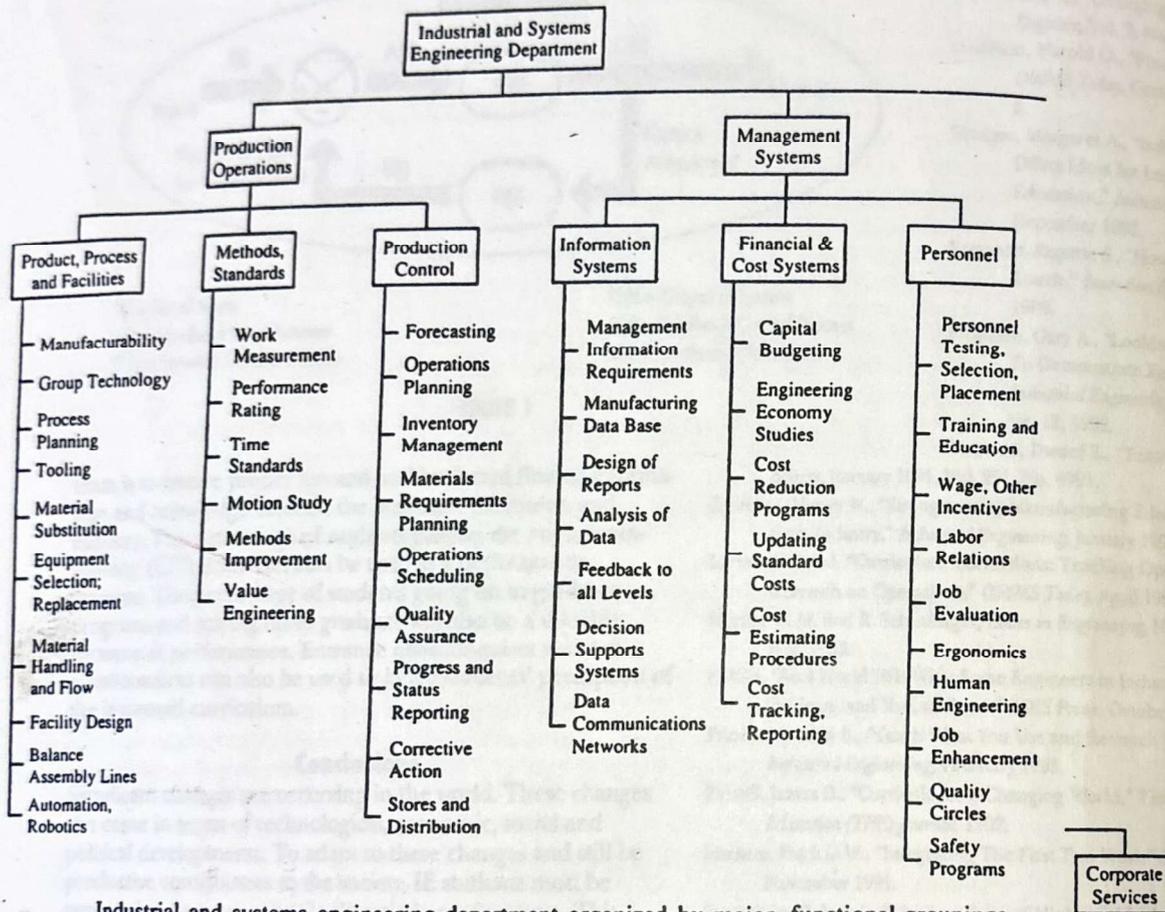


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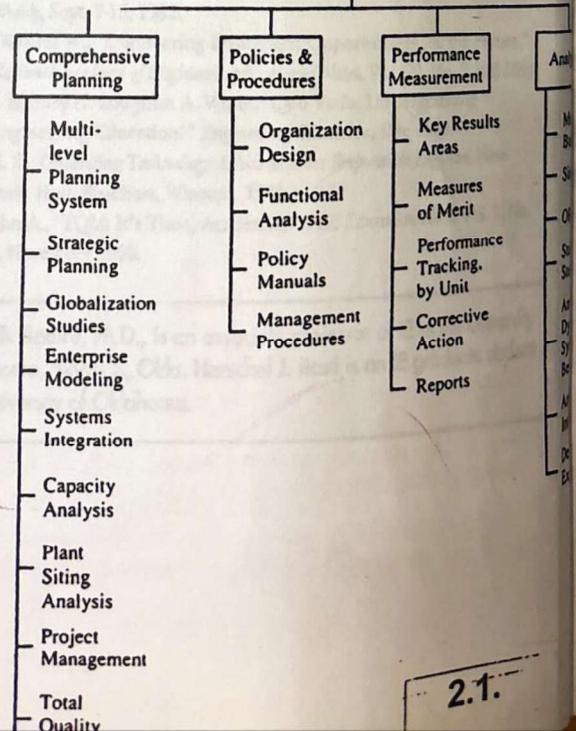
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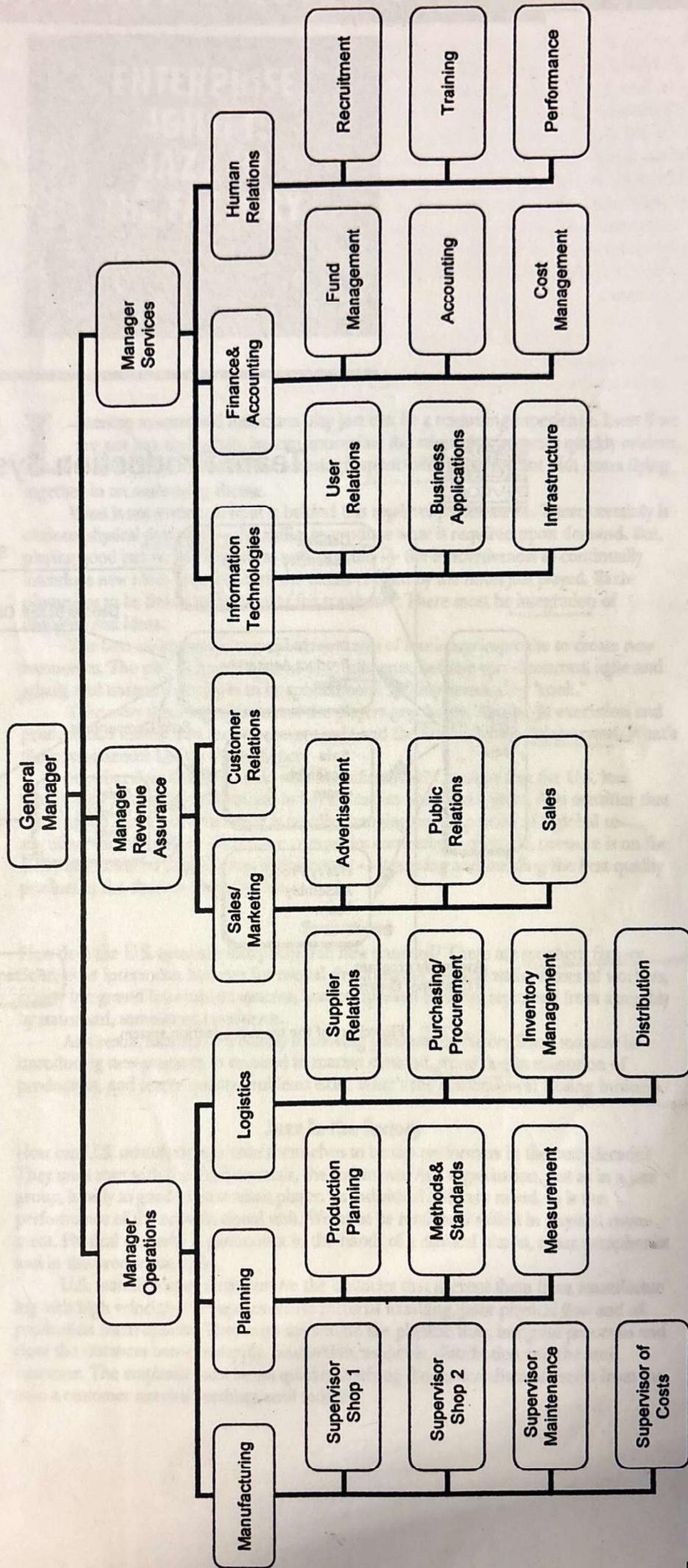
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# Karagülle Spareparts Ltd.





**ENTERPRISE  
AGILITY:  
JAZZ IN  
THE FACTORY**

by Richard G. Ligus  
Duckford Consulting Group

**L**istening to seasoned musicians play jazz can be a rewarding experience. Even if we are not jazz enthusiasts, we can appreciate the talent that becomes quickly evident, as melodies are created in a seemingly spontaneous fashion, but with notes flying together in an underlying theme.

What is not evident is what is behind this top-level performance. There certainly is obvious physical dexterity — the ability to produce what is required upon demand. But, playing good jazz requires agility as well as ability — the innovativeness to continually introduce new ideas in response to the mood created by the notes just played. Each phrase has to be linked with the next for continuity. There must be integration of thoughts and ideas.

The best excitement is created when teams of musicians improvise to create new harmonies. The players have mastered the rudiments, become very dexterous, agile and adroit, and trained themselves to be spontaneous. In their terms, they “cook.”

Take away these ingredients and the players get clumsy, stumble in execution and produce bad results. The music becomes stale and the listener grows disinterested. What's the consequence? Losing the audience.

So, what does this have to do with manufacturing? Consider that the U.S. has significantly lost world marketshare in key industries over fifteen years. Also consider that the complexion of manufacturing is rapidly changing, in the process of a global re-segmentation of markets. With more companies competing worldwide, pressure is on for U.S. manufacturers to give a top performance — designing and building the best quality product in the shortest time possible.

**Sour notes**

How does the U.S. compare today with that new standard? There are spaghetti factory flows, poor interaction between functional departments, physical walls, classes of workers, poorly integrated information systems, and component factories separated from assembly by states and, sometimes, continents.

As a result, factories are clumsy in moving parts on the factory floor, too slow in introducing new products to respond to market demand, stumbling in execution of production, and severe quality problems exist. What's the consequence? Losing business.

**Jazz in the factory**

How can U.S. manufacturers tune themselves to be top performers in the next decade? They must start with the fundamentals, the rudiments. Any organization, just as in a jazz group, is only as good as its weakest player. As individual skills are raised, so is the performance of the organizational unit. We must be ready and skilled in physical movement. Physical dexterity is paramount in the hands of a classical pianist, a jazz saxophonist and in the production cycle.

U.S. manufacturers must remove the obstacles that prevent them from manufacturing with high velocity — set-ups, excessive material handling, poor physical flow and all production interruptions. They must streamline the physical flow, integrate processes and close the distances between supply, production, assembly, distribution and the end customer. The emphasis must be on quickly satisfying the service chain of events from the time a customer needs something until satisfied.

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## BUSINESS STRATEGIES

### ENTERPRISE AGILITY: JAZZ IN THE FACTORY

by Richard G. Ligus  
Rockford Consulting Group

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### Being innovative

Manufacturers must be adroit in introducing new products and quick in getting them to the market to satisfy demand. They must create a dynamic integrated environment where people can work together in generating and sharing thoughts. Just as a jazz musician is free to choose his notes, in business there must be built-in flexibility to allow members to explore, and be creative.

Fostering innovation, among many other things, requires good organization of information. Current systems and procedures have been developed at length to control an unwieldy information channel. Functional organizations are stifling. Natural and functional conflicts create internal adverse relationships that prevent the sharing of ideas.

Only when by getting past the stifling paper flow, disparate computer systems, and functional organizational walls, will the homogeneity of ideas begin to generate at a fast pace. Linking computers is part of the answer, but it is also streamlining the information flow, and consolidating the knowledge of the idea producers.

### Playing in harmony

Having the ability to produce spontaneously upon demand requires a quick and resourceful organization that is quick and resourceful. It requires short lines of communication and velocity throughout the work chain. This means not only being able to enact the physical events swiftly, but also completing the business cycles quickly.

A jazz stage band keeps good time by closing physical proximity between players. This is so there is a minimum of delay in hearing the rhythm. In business, close proximity is critical to producing velocity. Each element of a business cycle must be linked with the next for continuity.

Every member must be in tune with the overall needs of the market, and close enough to one another to be spontaneous in helping each other support the common mission — serving the customer. Team play is a basic necessity to produce the results required to be competitive in the next decade.

When a manufacturing company becomes physically dexterous in the factory, organized to be adroit and innovative throughout, and its members work in concert toward a common theme of satisfying the requirements of a dynamic market, it will be a world-class competitor, and it will possess enterprise agility. That is when it will "cook."

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Richard G. Ligus, CMC, is a certified management consultant and president of the Rockford Consulting Group Ltd., Rockford, Ill. He has over 20 years experience in manufacturing and distribution, and specializes in business process reengineering, in addition to developing and implementing time-based strategies. He has a bachelor's degree in mechanical engineering from NJIT, and an MBA from Rutgers University.

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**CONVERSATION**

: Why are there so many levels in an organisation?

**WRITING**

: Choose a role in the organisation chart introduced. Explain your reasons for having chosen that position.