

Taxonomy of a Corporation

There are a number of ways look at a corporation. One of these has two dimensions. One is functional (e.g., marketing) and the second planning and control levels (e.g., strategic). The first dimension defines the role and responsibilities of the function. The second defines the decisions and data required to support those decisions.

Functional Dimension

This example of the functional dimension comes from the American freight railroad industry.¹

Name of Function	Responsibilities
Executive	Setting corporate goals and policies and formulating long-range plans.
Marketing	Developing and selling transportation service packages that enable the railroad to meet its objectives.
Operations	Providing customers with transportation services that are safe, efficient, reliable, and cost-effective.
Intermodal	Providing for the railroad portion of the movement of freight in containers or trailers by a combination of transportation modes.
Revenue Accounting	Tracking revenues receivable and payable the result from providing transportation services. These result from four different types of movements.
Maintenance and Engineering	Maintaining the railroad's assets to allow for safe, reliable transportation service. This includes planning for, designing, constructing, and retiring all types of railroad plant and equipment.
General Accounting	Managing non-transportation services receivables and payables and capital expenditures
Administrative	Providing corporate services such as human resources and information technology

Table I Functional Dimension

¹ Railroad Information System. First ed. White Plains, NY: IBM, 1985.

Planning and Control Dimension

This definition of the planning and control dimension comes from the Railroad Information System document referenced earlier.

Planning and Control Level	Characteristics
Strategic	<p>The concerns at this level are the objectives and policies of the firm. The people who work at this level include general and functional managers who usually have long-range concerns, anywhere from one to ten years.</p> <p>The types of problems they must solve vary widely. These problems generally require data in the form of summaries and estimates that are difficult to predefine and many times external to the business.</p>
Tactical	<p>The concerns at this level are</p> <ol style="list-style-type: none"> 1. the efficient execution of policies set at the strategic level, and 2. the effectiveness of the policies in meeting the firm's objectives. <p>The people who work at this level can be from all levels of management: general, functional, and operational. Their responsibility is making medium-range business decisions, those of a monthly or year-to-year nature.</p> <p>The problems that occur at the tactical level tend to be more structured, cyclic, and repetitious than those found at the strategic level. The data they require is generally definable and available within the organization.</p>
Operational	<p>The main concern at this level is efficiently and effectively carrying out the specific tasks the firm performs in the course of doing business. Among the people who work at the operational level are the functional and operational managers who handle short-term business problems, those of a weekly or day-to-day nature.</p> <p>The problems are highly structured and repetitious requiring data that is definable, detailed, and generated internally.</p>

Table 2 Planning and Control Dimension

Integrating the Dimensions

In the Railroad Information System document these dimension have been integrated into a matrix. The functional dimension defines the columns; the planning and control dimension defines the rows.

	Executive	Marketing	Operations	Intermoda	Revenue Accounting	Maintenance and Engineering	Genera Accounting	Administrative
Strategic								
Tactical								
Operational								

Figure 1 Business System Matrix

The Business System

A business is managed by people using process acting on data. This trio can be termed a business system.

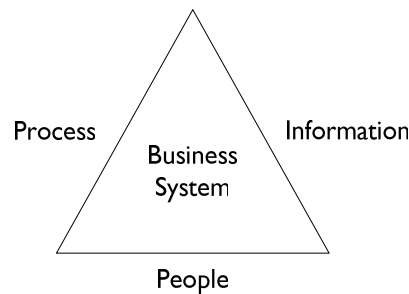


Figure 2 Business System

No business is managed by a single business system, but rather a set of interconnected business systems defined functional needs and planning and control level.

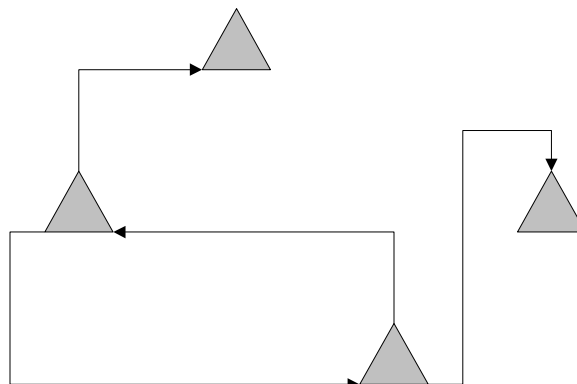


Figure 3 Interconnected Business Systems

These business systems as can shown as sets of processes and data interconnected by data paths and messages.

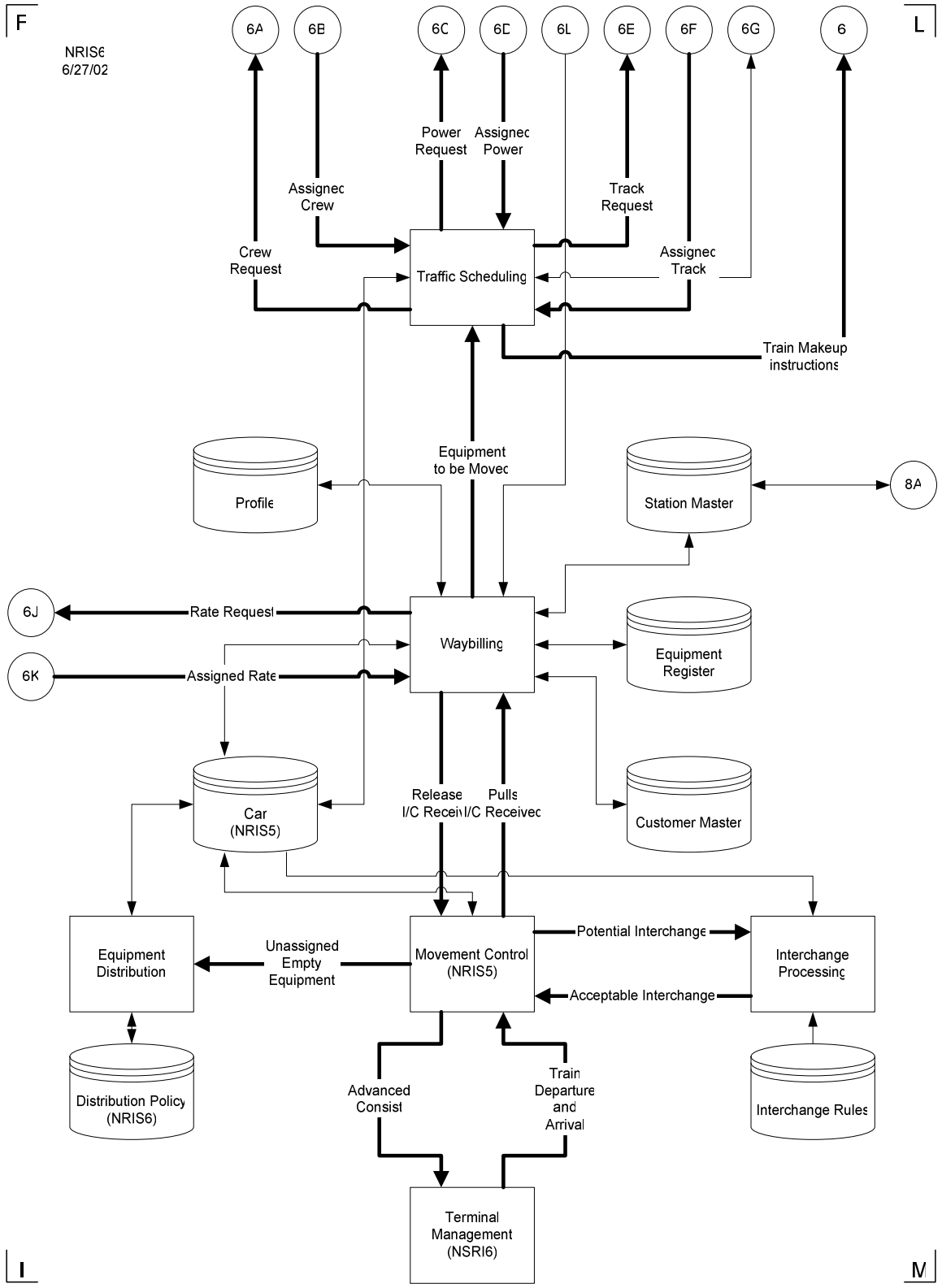


Figure 4 Railroad Business Operations at the Operational Level

The processes are the rectangles. The cylinders on end are the data. The narrow lines connecting processes and data are the data paths. The broad arrows that are labeled are the messages whereby the processes communicate.

Figure 4 Railroad Business Operations at the Operational Level² is a reasonable statement of some of the contents of the intersection between the operational function, and the operational planning and control level at a freight railway.

Concluding Remarks

This is not the only possible view of the taxonomy of a corporation. Here are two other examples.

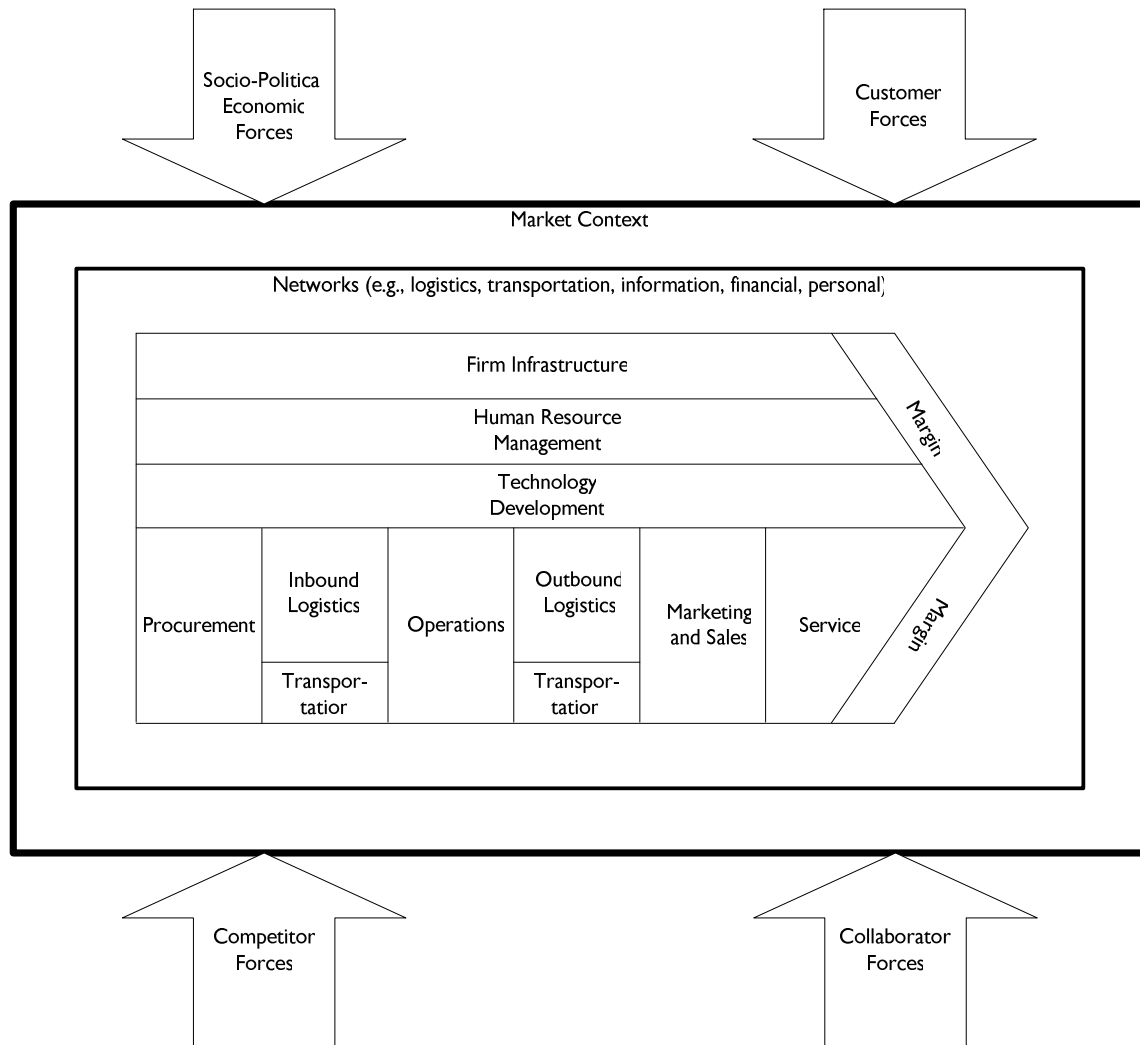


Figure 5 Porter's Value Chain (Modified)

This is a modified view of Michael Porter's Value Chain³ within the larger context in which it exists.⁴

² RIS Chart Book

³ Porter, M. E. (1985). *Competitive Advantage: Creating and Sustaining Superior Performance*, The Free Press.

⁴ The Context of Interest

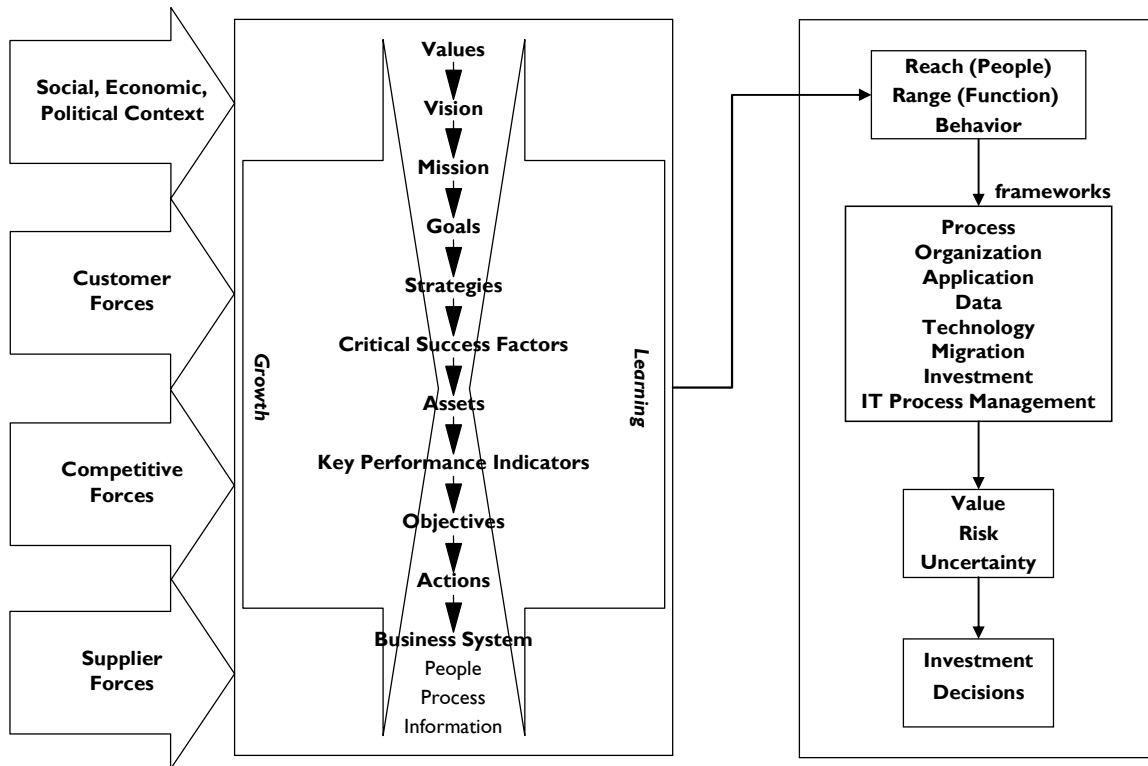


Figure 6 Business Drivers, Business Configuration, and Information Technology Strategy

Figure 6 Business Drivers, Business Configuration, and Information Technology Strategy integrates the ideas of Figure 2 Business System and Figure 5 Porter's Value Chain (Modified), shows how the business system is derived beginning with values, and how the business system drives the strategic planning for information technology.

There are other models (e.g., The Zachman Framework for Enterprise Architecture, John Zachman) which are also useful.

One wants to use the model that is most effective in addressing the issue at hand.

1. Issue: Good overall view of how the business works.

Business System Matrix

2. Issue: Derivation of the Business System

Business Drivers, Business Configuration, and Information Technology Strategy

Porter's Value Chain Modified (aka The Context of Interest)

3. Issue: Detailed Architecture of the Information Technology System

The Zachman Framework for Enterprise Architecture

TMGT 7300 Transportation Management⁵ currently calls for the student to produce a description of the management system required to deliver on the door to door promise of the international, integrated, multimode transportation system known as FastShip. This note, along with a companion, Note on Building a Management System, is intended as guidance for the students in this endeavor.

⁵ This is a required course in the Masters in Transportation Management at Maritime College, State University of New York

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