

# 4 Information and Analysis

## 4.1 Measurement and Analysis of Organizational Performance

### 4.1a Performance Measure

As a part of the aviation industry TNG must manage by fact. We are governed by regulatory requirements for product safety and customer requirements to meet product and service repair specifications. TNG's existing information technology infrastructure currently supports performance levels to meet or exceed these requirements. To support our growth strategy, TNG is currently undertaking another cycle of improvement of our IT systems by assessing and developing a plan to further integrate and upgrade our existing infrastructure.

4.1a(1) Gathering/integrating information: Information and data is input automatically or manually into TNG's information management systems. Data input is done by stakeholders throughout the organization in both the U.S. and International locations through personal computers, online business systems, the Internet, and the Intranet. Operational data including performance results and Materials Resource Planning (MRP) information are collected and input by stakeholders into the various divisional applications. Ancillary information such as safety, customer complaints, and customer feedback results are collected by stakeholder or teams within each division and input into data systems using a common approach to ensure consistency of data input. This approach was developed by a PAT and reviewed and approved by the Quality Management Council (QMC).

On a weekly, monthly, quarterly, and annual basis, performance results are analyzed reported at the corporate, division, department, and stakeholder levels. For example, Corporate Finance inputs, aggregates, and analyzes sales and financial information such as budget variance data and distributes this information throughout TNG via electronic media to support decision-making at all levels of the organization.

4.1a(2) Selecting/aligning measures for decision/making: TNG uses the Strategic Measure Deployment Process (see Fig.

4.1-1) to select and evaluate the effectiveness of measures. The QMC establishes the alignment of measures to strategies, goals, and operations by reviewing the methods used at each division. When measures appear to be out of alignment to customer requirements and organizational performance goals, changes are made. For example, the two Presidents, COO, Vice President of HR, and representatives from the Continuous Improvement and the Finance departments recently formed a PAT team to identify and implement improvements in the process for selecting performance measures comparable across divisions and for tracking, and reporting results against these measures for the determination of total company performance. Each measure is required to pass the SMART criteria test. In other words, measures must be specific, measurable, agreed-upon, realistic, and time-scaled.

4.1a(3) Selecting/using comparative information: The Strategic Measure Deployment Process is also used to select and evaluate comparative and competitive information and measures. Comparative and competitive information and measures are selected based on their alignment to corporate strategies and the financial

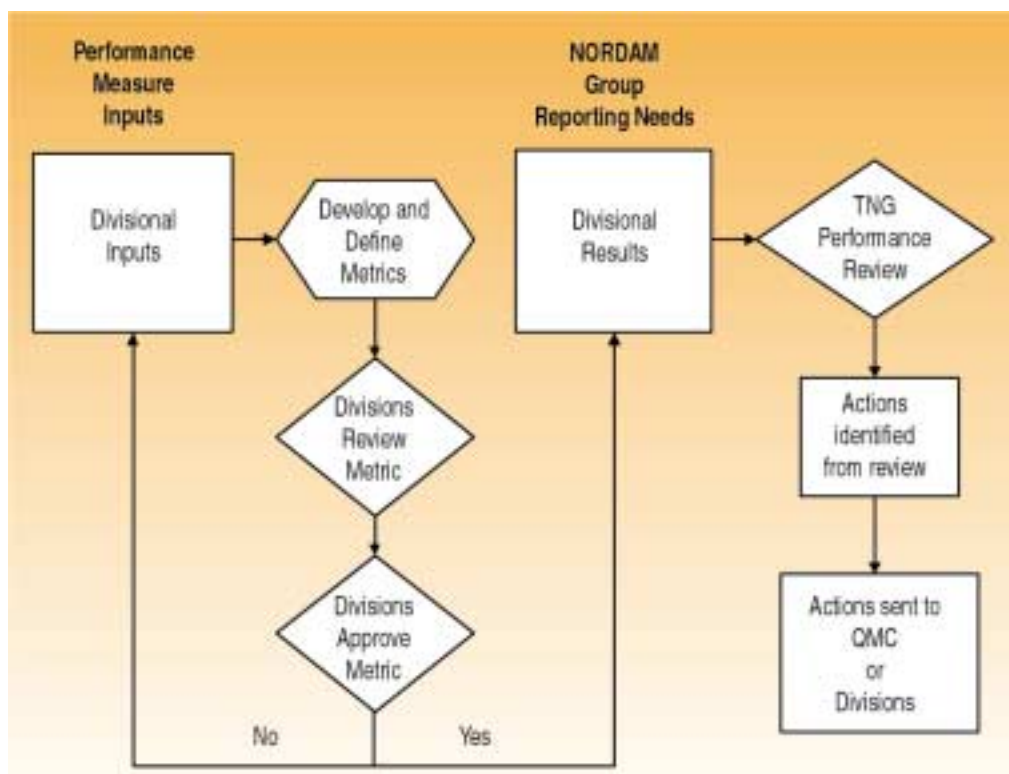


Fig. 4.1-1 Strategic Measure Deployment Process

drivers of the company. For example, since recruiting and retaining stakeholders is a key strategic challenge, benchmarking was used to identify measures of effectiveness for our hiring process. Based on our benchmarking against the Saratoga Measurement Systems, which provides measures of effectiveness for human resource processes, we identified several new measures including days to hire and cost to hire, to name a few.

Division and department performance provides a basis for internal comparison of customer and stakeholder performance. Industry standards and best-in-class measures provide a basis for external comparison. For example, safety performance is compared against OSHA industry averages. Baldrige winner benchmarks and various industry benchmarks are obtained through published and confidential sources.

#### **4.1a(4) Keeping measurement system**

**current:** The Strategic Measure Deployment Process contains a continuous improvement step that is used to evaluate the effectiveness of a measure and identify the need to either find a new measure or improve the capability of the current measure to provide useable and reliable results. A new indicator was recently implemented that measures safety in terms of annual workers compensation cost in dollars by employee. The purpose of this measure is to communicate to stakeholders the impact of safety costs on their SIP payments. Numerous other measures have been instituted as part of the Lean work including invoice throughput, warranty cycle time, and response time for customer information requests. The continuous improvement of the measurement system ensures that measures address the changing strategies and business needs of the company.

### **4.1b Performance Analysis**

#### **4.1b(1) Analyses done to support reviews:**

During monthly Corporate Performance Team meetings senior management is presented with the results against a wide-range of performance measures. Various types of analyses such as customer satisfaction, market share and position, financial variance, acquisition, operational capacity, stakeholder satisfaction, root cause, pareto and constraints analyses, lean manufacturing, and statistical process control are conducted to support organizational performance and strategic planning. Divisional SWOT analyses (see **Fig. 2.1-2**) are a key part of the Strategic Planning Process (see **Fig. 2.1-1**) and provide the basis for developing initiatives that will help TNG achieve the next threshold of performance. A modeling tool called the Pivot Table is an example of a recent refinement in analysis developed by the Transparency Division. The Pivot Table is used by sales personnel, managers, and directors to conduct ad hoc analyses on profit yields by performance dimension.

Divisional management consolidates monthly forecasts, performance variance analyses on the budget and five-year strategic planning in order to understand how successful

the organization is in achieving the short- and longer-term goals. Corporate finance performs “what if” analyses to forecast the outcome of alternative financial and market concerns and opportunities facing the organization. Corporate Business Development analyzes market and company data to understand potential competitors, acquisitions, and customer opportunities and to make mid-course adjustments to the strategic plan. Results of quality, financial, operational, and safety audits provide management with information to identify deficiencies requiring corrective action and to identify opportunities to improve existing systems.

#### **4.1b(2) Communicating analysis results for decision making:**

The NORDAM Instrument Panel (IP) (see **Fig. 3.2-2**) is used throughout the company to organize all types of performance measures and report against those “significant few” that drive success. The Instrument Panel is TNG’s balanced scorecard approach to performance management and reflects the use of the Baldrige results Items including customer, financial and market, human resource/stakeholder, and organizational effectiveness, which includes supplier/partner results. Monthly performance team meetings are conducted at the division and company levels. The results against measures are reviewed and analyzed. Action items are assigned and follow-up occurs regarding action items from the previous month. Each performance measure in the IP has a target goal that has been determined based on industry and comparative data, previous performance, and/or customer input.

Actual results against measures are compared to targets, indexed and tracked using a software program called PBViews, which provides a “drill-down” capability to view leading and lagging indicators that align to company and division measures. Results against these measures are posted in the performance measures software for selected stakeholder review. PBViews was introduced in 1999 and represents a cycle of refinement over the Goal Tree process used to align and cascade performance measurements throughout the organization.

Results against the Stakeholder Incentive Plan (SIP) and other performance measures are posted on bulletin boards as well as on electronic media. Periodic staff and stakeholder meetings are held at all levels of the entire organization and at all U.S. and International locations to communicate performance in key areas, to explain the significance of the current performance results, and to discuss what is being done to improve performance.

#### **4.1b(3) Aligning analysis results; providing basis for improvements:**

Currently, an effort is underway which is tied to the implementation of the refined strategic planning process (see **Fig. 2.1-1**) that will provide for the alignment of results of analyses with key strategic objectives and initiatives. The process is in the early stages of deployment at the division level.

## 4.2 Information Management

### 4.2a Data Availability

Access to data and information is made available to stakeholders directly from the Enterprise Resource Planning System (ERP), various TNG and divisional Intranet systems. A Wide Area Network (WAN) with redundant system backup is used to supply data and information throughout the enterprise (see Fig. 4.2-1). Some transaction data and information is available real time, while other information such as MRP data is processed in a batch environment and is updated daily to ensure data availability and currency.

**4.2a(1) Making information available/accessible:** Stakeholders use personal computers to access reports and charts, conduct online inquiries, and generate hard copy reports and results charts via ERP and several business systems. Financial and operations data are also available on TNG's Intranet and eBusiness site. Web pages are published from a central data warehouse, which is populated directly from ERP systems on a real time basis.

Customers and suppliers are provided online access to information regarding their order status and quotes via an authorized eBusiness application that is part of the TNG website and/or through the File Transfer Protocol (FTP) site. Online services provide customers with the ability to order inventory without direct contact with a Customer

Service Representative.

**4.2a(2) Ensuring information quality:** Several methods are used to ensure data and information integrity, reliability, and accuracy. These include preventive maintenance, data storage, and backup systems. Daily business transaction accuracy is ensured through the use of consistent data management processes. Internal system controls and other built-in checks and balances help ensure reliability between operations and financial information. Data and information security and confidentiality is ensured first through the requirement of unique user name and password to access any application on TNG's Wide Area Network. Additional controls include unique user name and password for each stakeholder, contractor, customer and supplier based upon job requirements and management approvals. ERP and ancillary business systems require a unique user name and password for access to confidential information. Customer and supplier access to order information on the eBusiness site is controlled through the use of customer and supplier codes, user name and password. Remote access to the WAN is also secured through the use of firewall and virus protection data security systems. Since TNG maintains several facilities in the Tulsa area, data backup processes and media storage at various sites provides added data reliability.

**4.2a(3) Keeping mechanisms current:** Data and information availability mechanisms are kept current to meet business needs through the implementation of

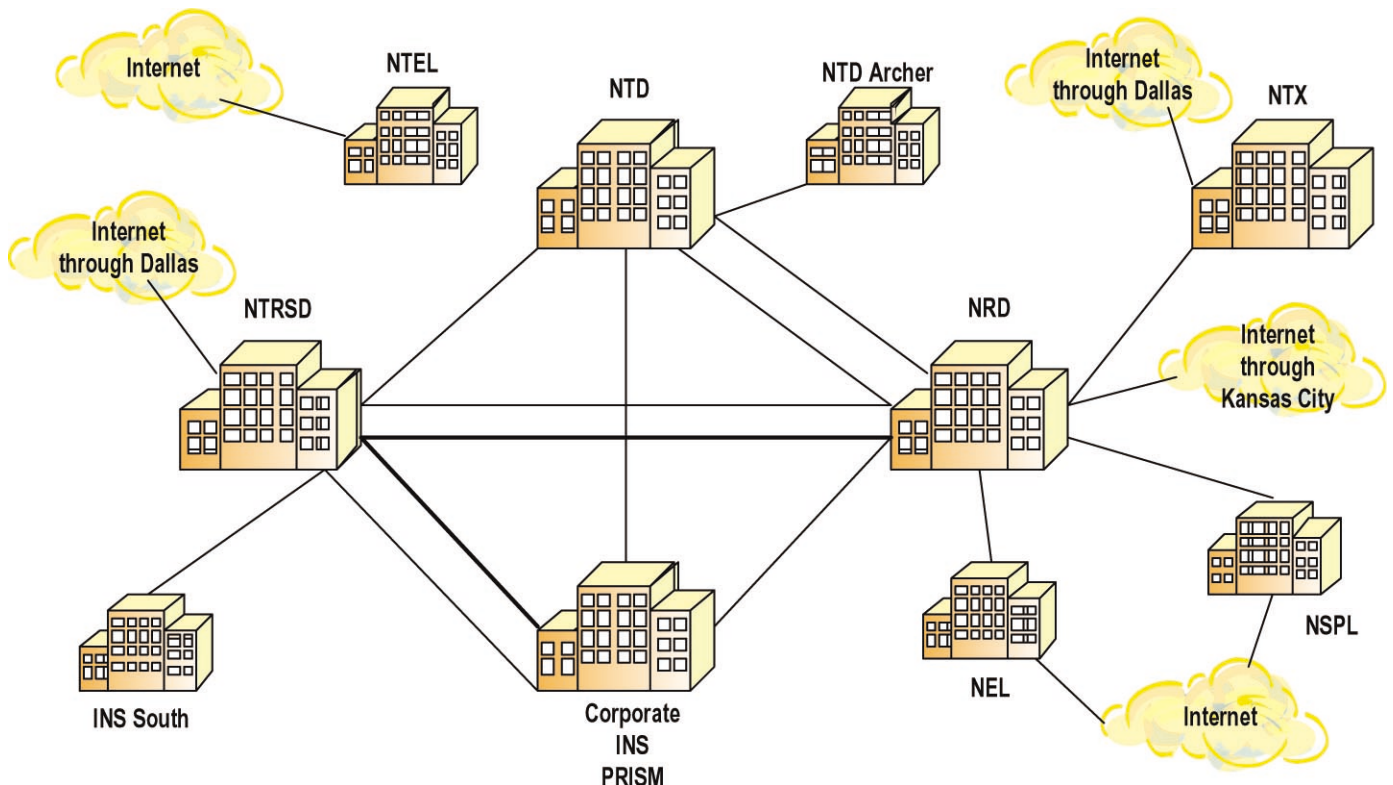


Fig. 4.2-1 NORDAM Wide Area Network

software upgrades released by the manufacturer. Technology planning also ensures that systems are evaluated and plans are developed to keep systems current and capable of meeting the information system requirements of both internal and external customers. For example, the enterprise-wide implementation of e-mail, voicemail, and Internet access systems, as well as communication devices such as personal digital assistants-PDAs, cell phones, pagers, and websites are the result of technology planning based on the voice and data requirements of technology users.

## **4.2b Hardware and Software Quality**

**4.2b(1) Ensuring hardware/software reliability/user friendliness:** To ensure reliability of hardware and software, preventive maintenance is conducted. Maintenance is done during evenings, weekends, and holidays to minimize disruption of services. Spare computers and network equipment are available for quick replacement, if necessary. Manufacturer warranty service and technical support service is used, as needed, to assist in researching and resolving hardware and software issues.

Software expert users, ancillary extracts, and data retrieval tools are used to provide a useful and reliable format for user functionality.

Examples include pivot table ad-hoc research tools driven from system extracts of future sales backlog data,

sales, and other historical data. Special emphasis is made to provide training and enhanced utilization of the software products.

### **4.2b(2) Keeping hardware/software**

**current:** Hardware and software systems are kept current with business needs and directions through the Technology Planning process which evaluates business needs and plans for upgrades and replacements, as appropriate. Software upgrades and improvements are evaluated and implemented as they become available.

Due to continued growth and globalization of the business, the capability of software and hardware systems must be able to support the current and future strategic direction. To address this, an Integrated Systems Strategic Plan (ISSP) is being developed as part of the 2002 Corporate Strategic Objectives. The plan objectives are to: 1) understand where TNG is today relative to information technology, 2) align information technology with the overall business strategy, 3) develop a blueprint for organizing information systems for the future, 4) identify business efficiency gains and opportunities, and 5) understand the need to accept and manage significant change. Plan deliverables include a current state assessment of the "As-Is" environment and a road map of the "To-Be" vision. The roadmap includes the prioritization of projects to be implemented during the next three to five years. Deployment of the plan is expected to begin in 3rd quarter of 2002 with two projects identified in the plan substantially completed by year-end 2002.