

A Quality Organization for the Systems Enterprise

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A. E. (Andy) Moysenko

ADVYSE

+1-978-251-0906

Andy.Moysenko@advyse.com



Greetings and Introduction

Overview

GOAL:

Share a few Lessons Learned in establishing a Quality Organization for a Systems Enterprise

TOPICS:

- The Story
 - The Environment
 - The Need(s)
 - The Structure
 - The Operation
 - The Results

The Story

Once upon a time, there was a Systems Organization poised for rapid growth...

- **Imminent acquisition of a significantly larger organization**
- **Need for a flexible and scalable Quality Organization**
 - **Attuned to Business Needs**
 - **A key player in integration of the growing organization**
 - **Dedicated to Customer Advocacy**
- **Senior Management Vision:**
An Organization that is accountable for ‘Quality and then some...’

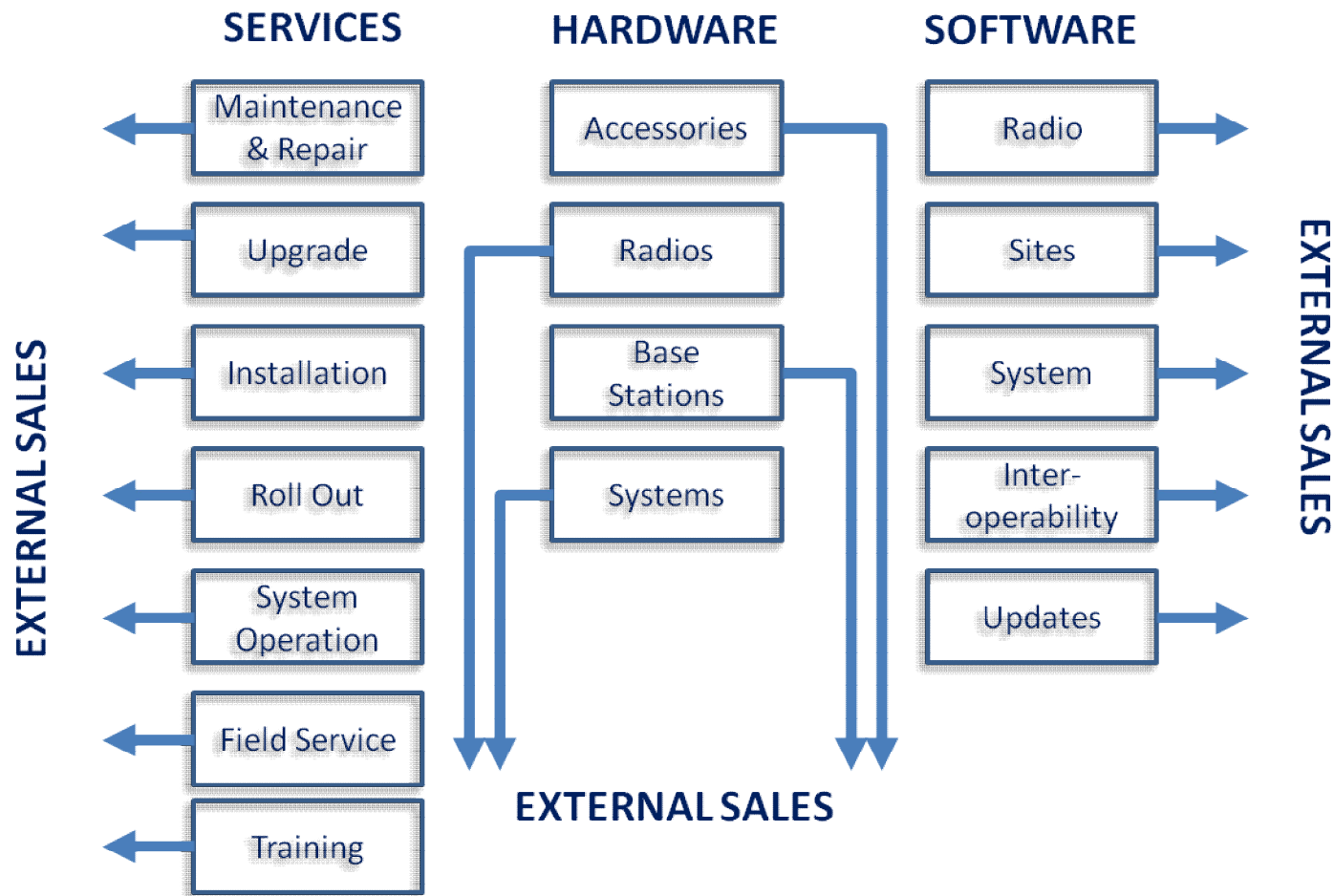
The Business Environment

The Business:

Mission Critical Wireless Telecommunications

- **Public Safety, Transportation, Transport, Security**
- **National, State, and Local Governments and DoD**
- **Products, Services, Software, Systems**
- **Small installations through major, multi-year roll out projects**
- **Global footprint**
- **Significant regulatory agency interaction (Domestic and Foreign)**

The Business Environment (*continued*)



Products and services are both internally integrated, and are also offered for external sale

The Organizational Environment

- **Business Segment of a Larger Parent Corporation:**
 - Traditional Manufacturing
 - “Close oversight” of Segment operations
- **Cultural differences among sites:**
 - Regional / Global
 - Manufacturing and Production / Development and Engineering
- **Many heritage practices imbedded in the organizational structure**

Overall Approach to Organizational Design

- **Opportunity to evaluate the Business needs that the Quality Organization must fill**
- **Complex Business & Organizational Environment**
- **Requirement for flexibility for future growth**

Use some Systems Thinking:

- **Assess validity of current mental models**
- **Go back to basics to establish essential requirements**
- **Focus on relationships among functions**
- **Envision outcomes**

What are the Business Needs ??

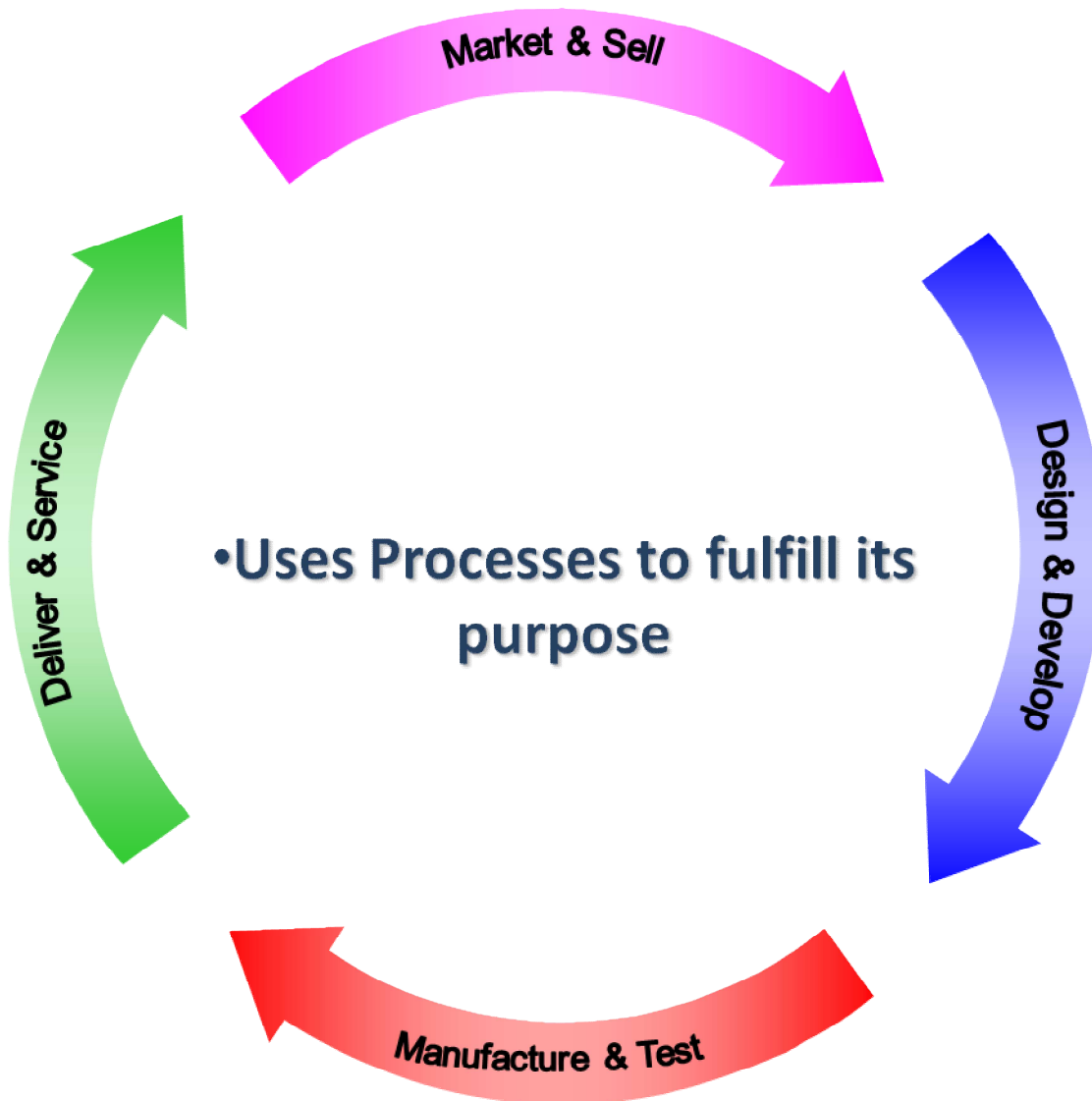
**A Business exists to make a profit
by satisfying Customer needs.**

And Customer Needs are Satisfied by Products

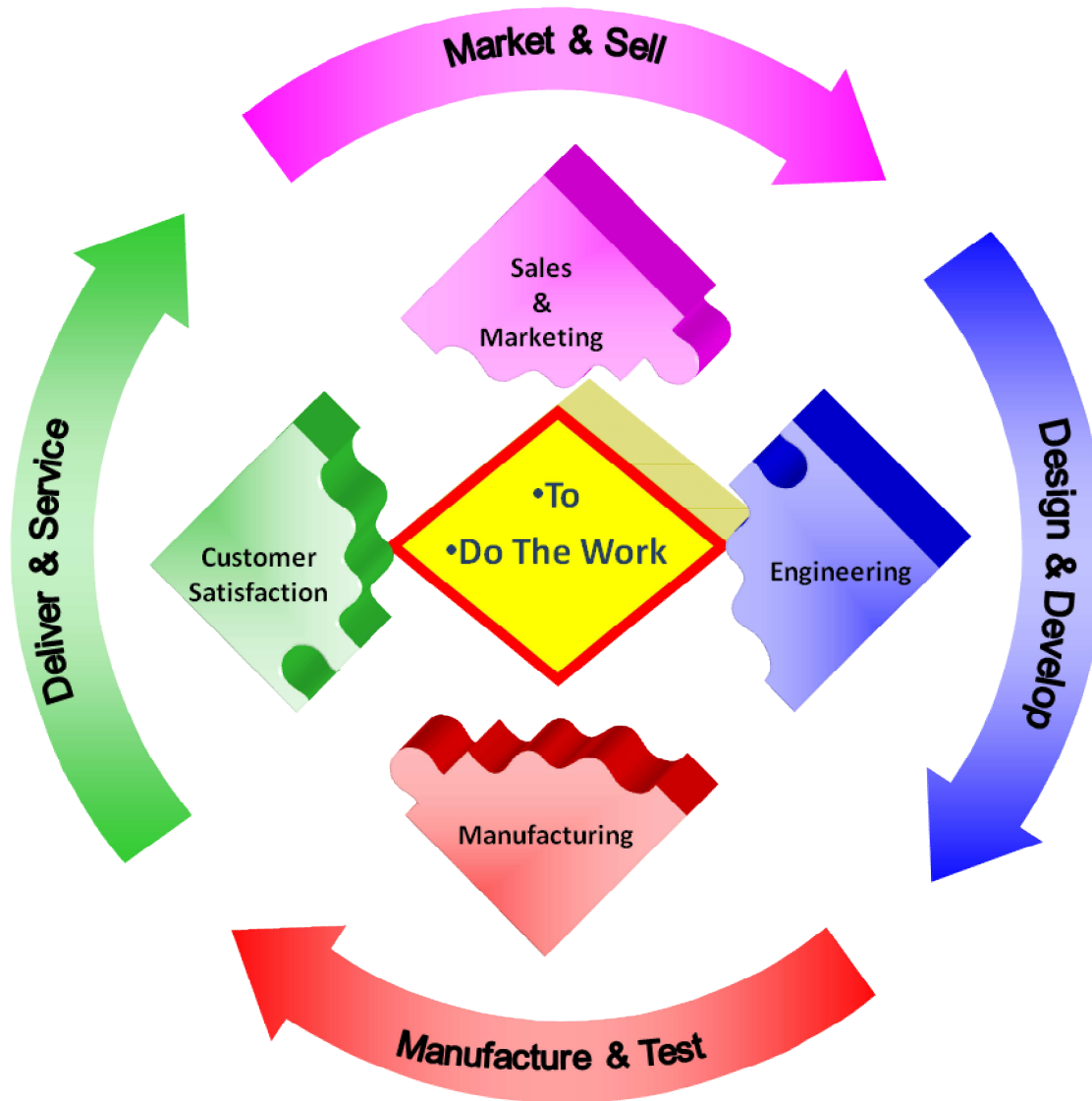
- For every Product sold, there are at least two customers:
 - The External Customer who expects:
 - Capability, dependability, suitability
 - Supportability, consistency
 - On-time delivery
 - The Internal Customer who expects:
 - OI & Cash
 - On-time delivery of OI & Cash

Product Integrity refers to the product's ability to fulfill customer expectations on all levels. (K. B. Clark, Harvard)

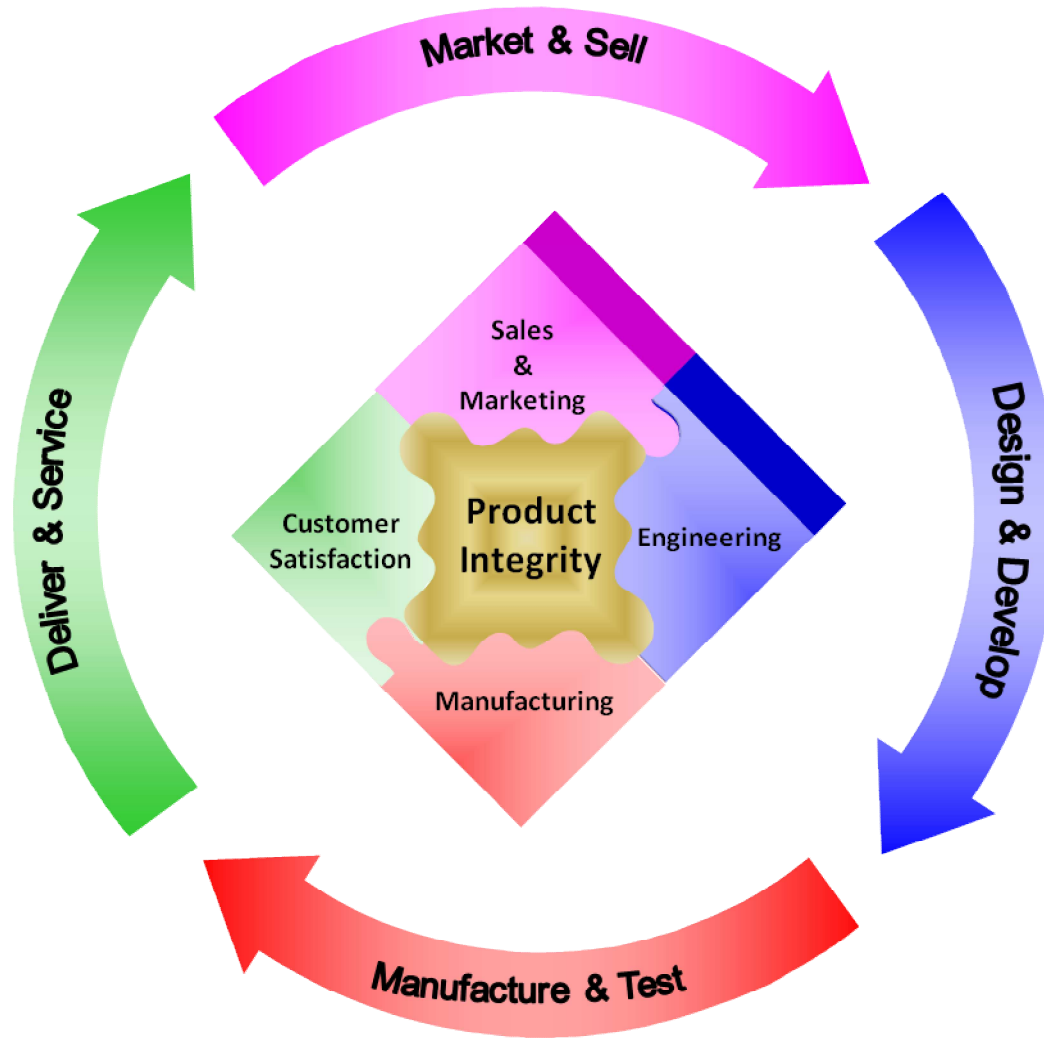
An Effective Business...



And Builds Functional Organizations...



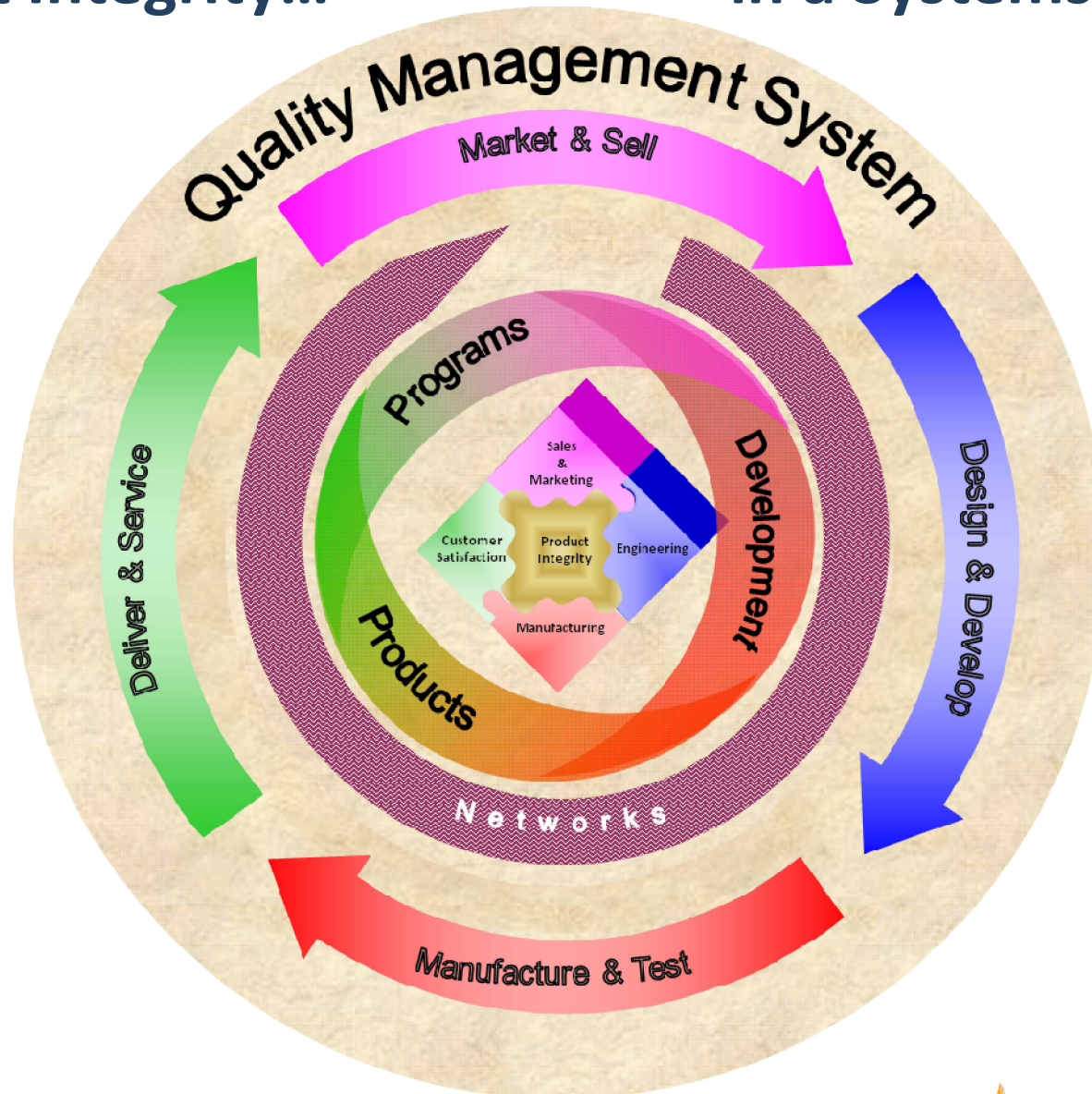
But something's gotta....



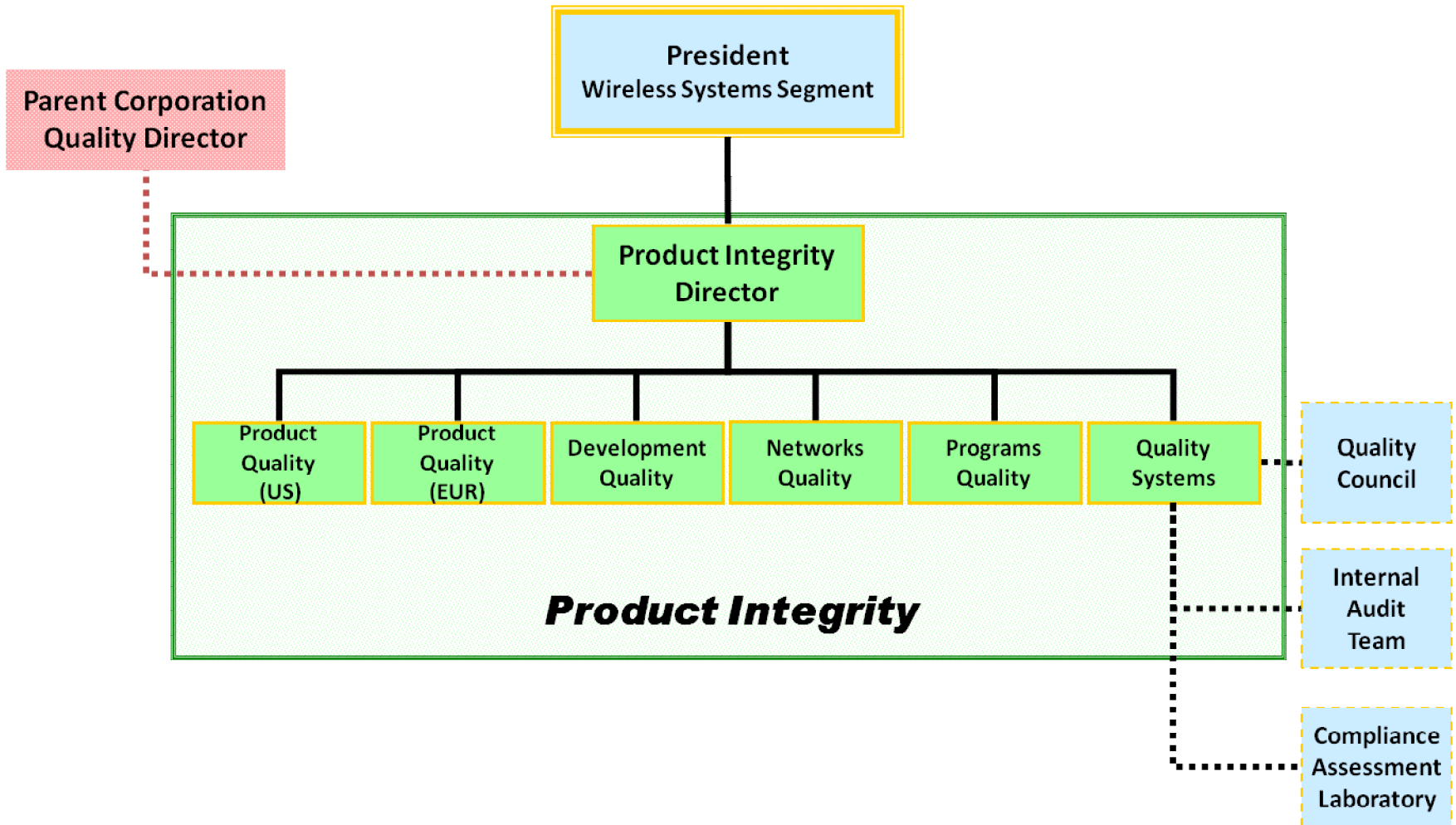
Pull it all together !!!

Product Integrity...

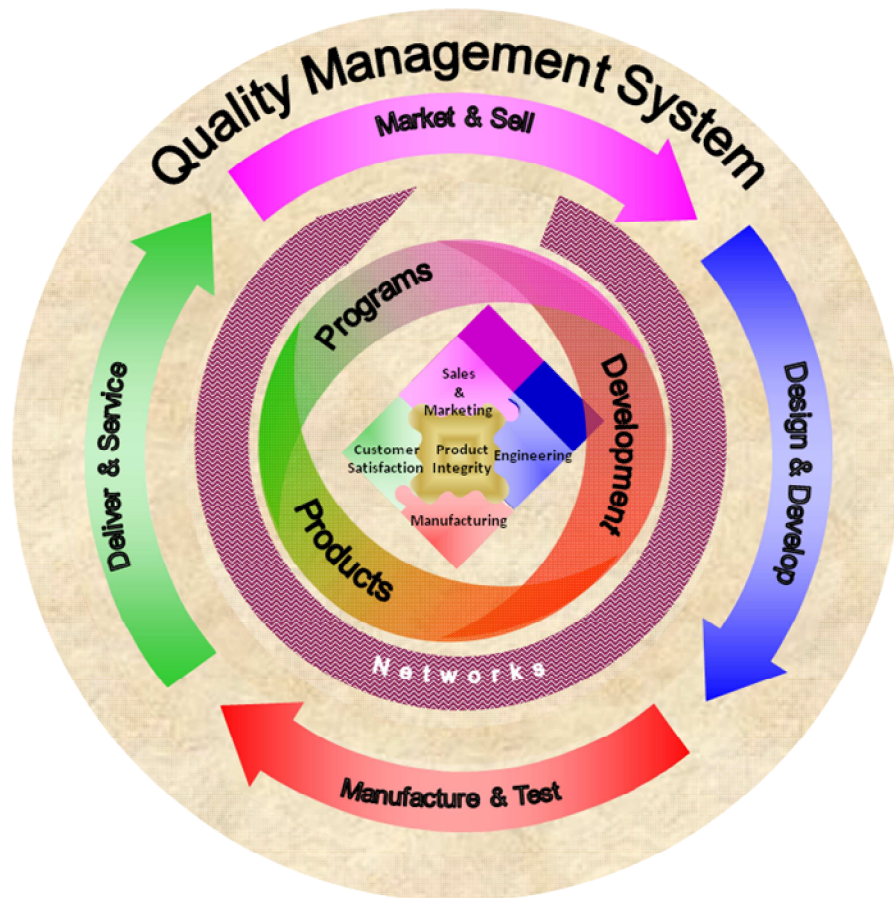
in a Systems World



Product Integrity Organization



Product Integrity in a Systems World



Development Quality:

- Hardware Development
- Software Development
- System Development

Products Quality:

- Subscriber Equipment (Radios, etc.)
- Infrastructure (Basestations, etc.)
- System Assembly, Integration and Test
- Deployment and Acceptance Testing

Programs Quality:

- Strategic Program Quality Planning
- Programmatic Quality

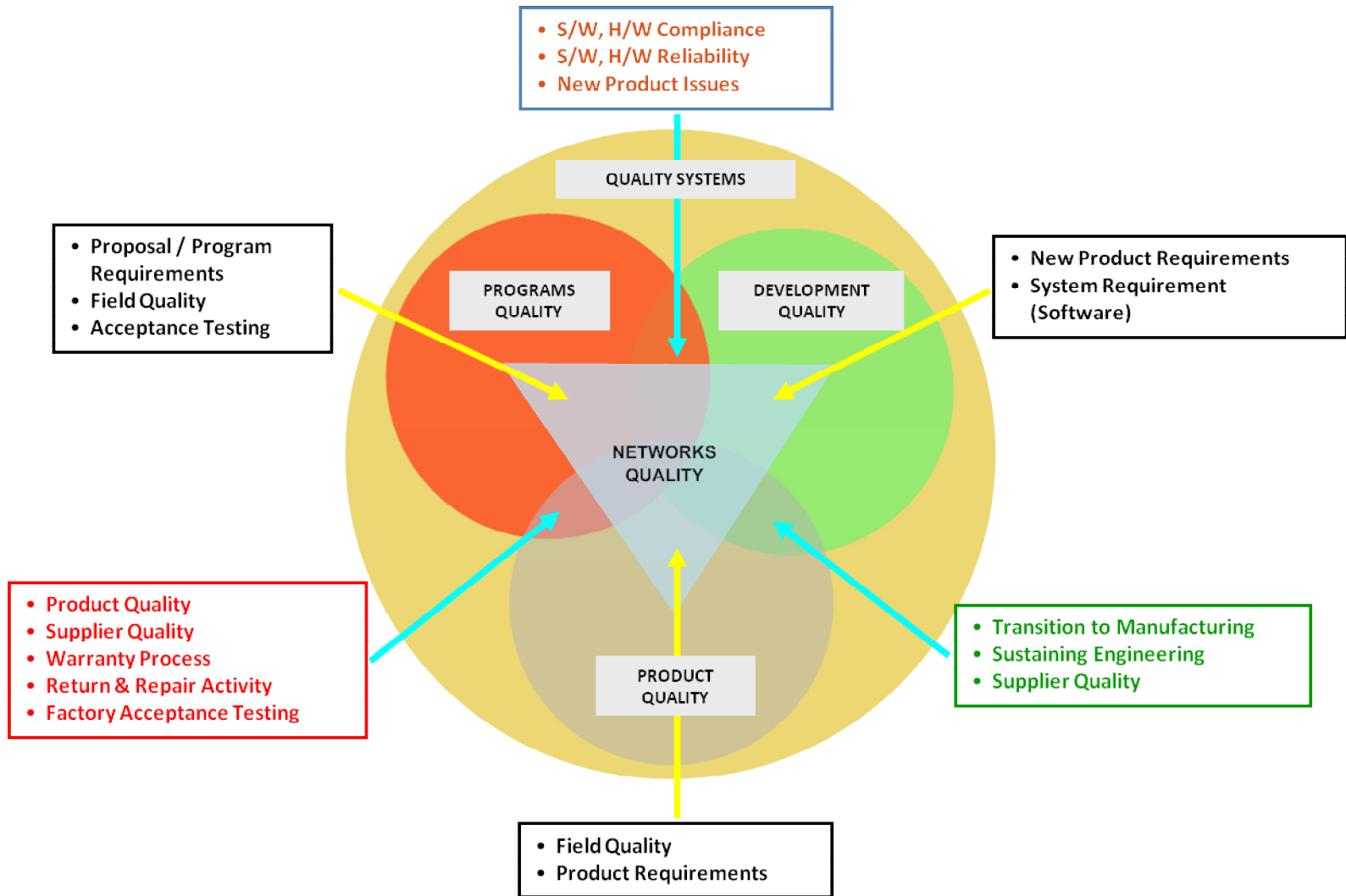
Quality Management System:

- ISO 9001:2000 Compliance
- Standards Compliance
- Quality Council Leadership
- Regulatory Compliance Oversight

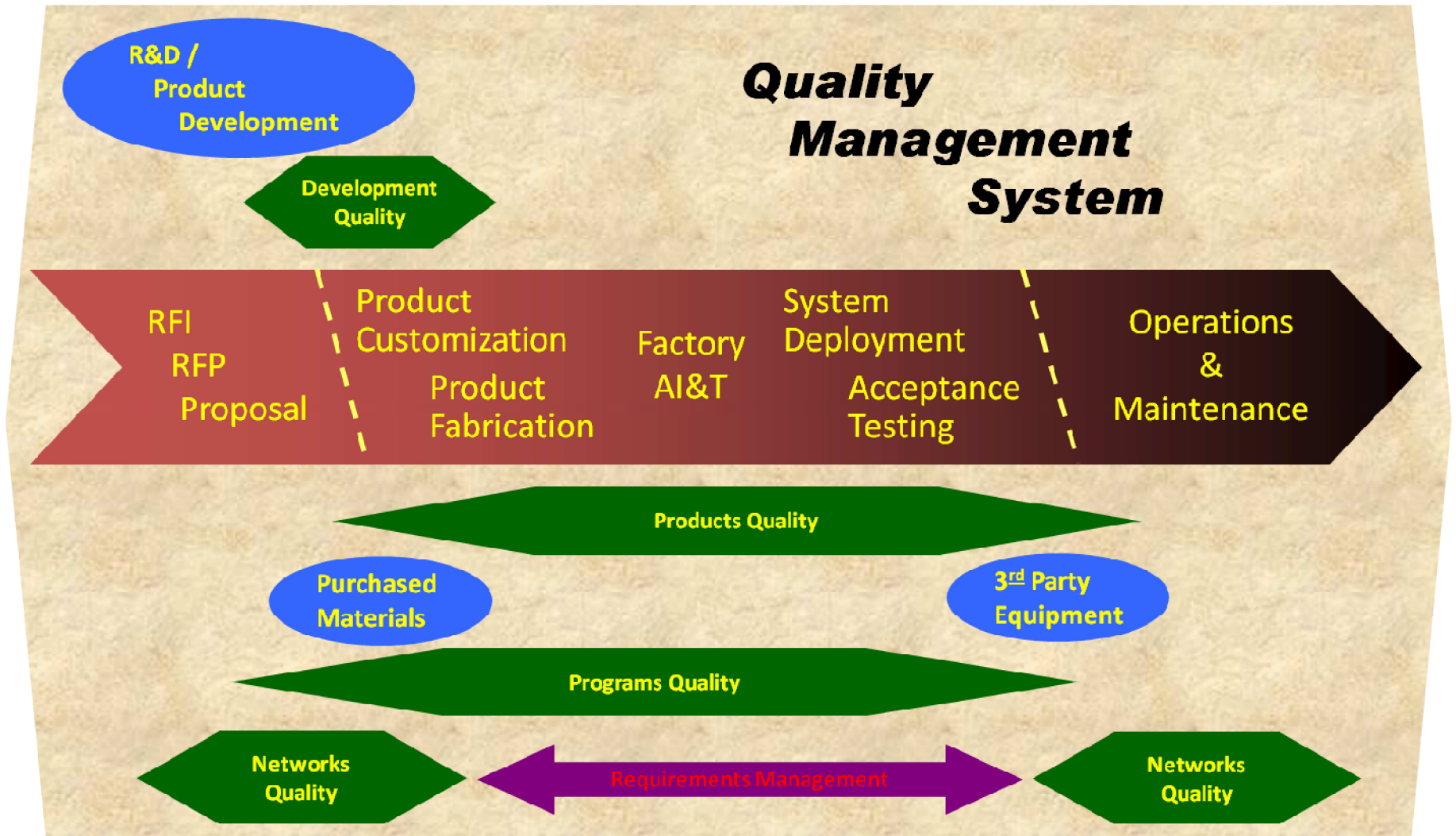
Networks Quality

- Requirements Management
- Systems / Networks Proposals
- Systems / Networks Operations and Maintenance

Product Integrity Has Overlapping Accountabilities

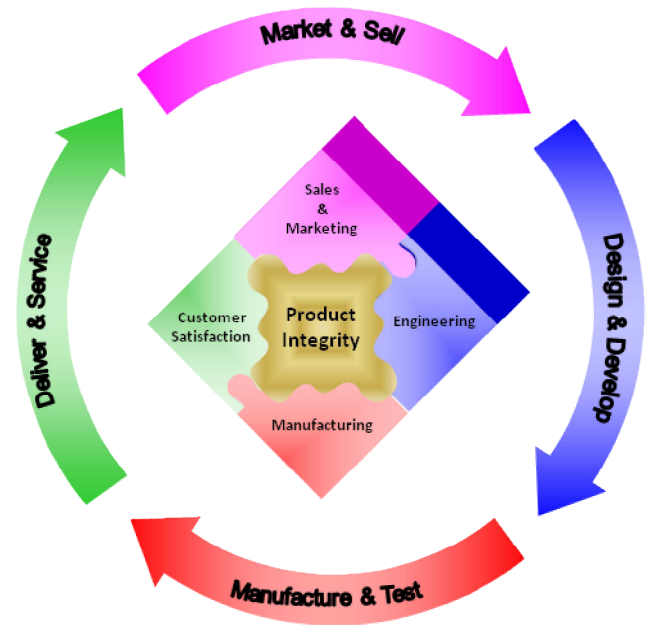


Product Integrity and the Systems Business



Product Integrity Vision

WSS Product Integrity is the source for process methods, tools, guidance, and oversight for achieving customer delight with increasing profitability.



Or to put it another way:

We are the key resource for Wireless Systems to provide its customers with better products, cheaper, and faster !!!

“Better, Cheaper, Faster...”

	MEASURE	PRIMARY CUSTOMER
Better	Increased Sales	External
“Cheaper”	Increased EBIT	Internal
Faster	On-Time Delivery Increased Cash	External Internal

Product Integrity Mission

- **IDENTIFY**
Defects
Opportunities for Improvement
- **CLARIFY**
Issues
Requirements
Objectives
- **SIMPLIFY**
Plans
Documentation
Solutions
- **RECTIFY**
Corrective actions
Process Improvements
Defect Avoidance Measures

***Our role is to make it easier for everyone
to do things the right way***

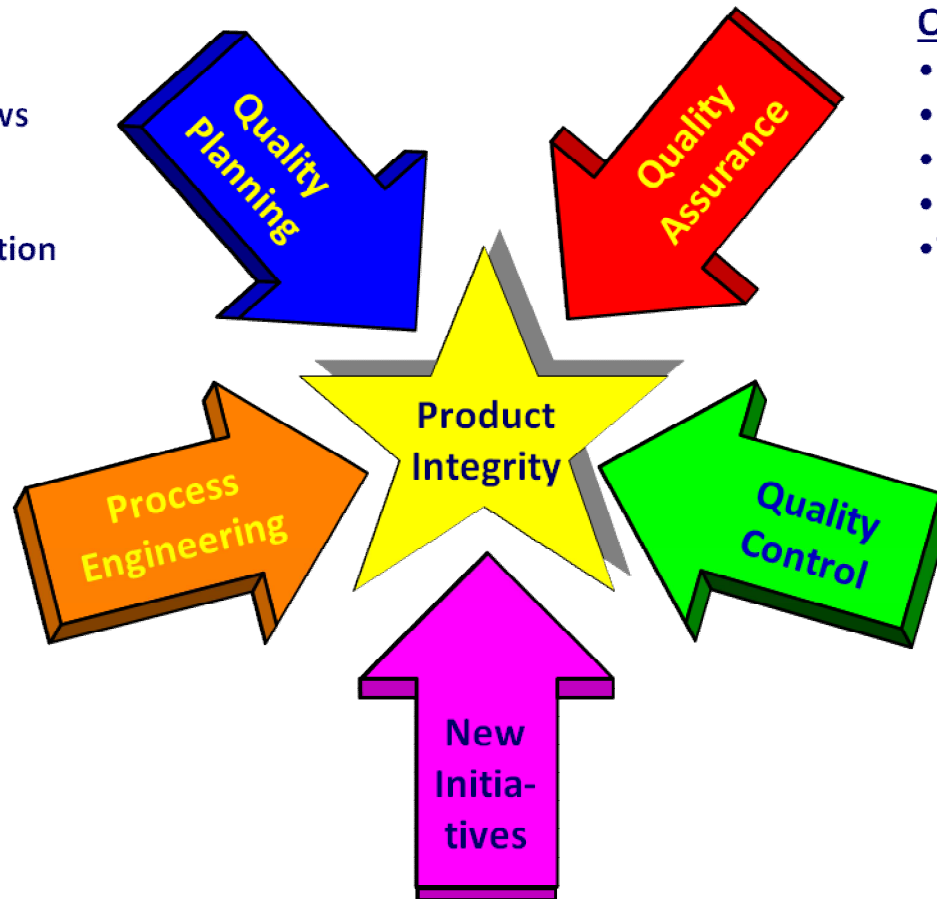
Product Integrity & “Classical” Quality Functions

Quality Planning

- Requirements Reviews
- Regulatory Agency Reviews
- Quality Plans
- Quality Policy Reviews
- Quality Policy Administration

Quality Assurance

- Process Audits
- Design Reviews
- ISO 9001
- ISO 14001
- TL 9000



Process Engineering

- Process Modeling
- Process Definition
- Process integration

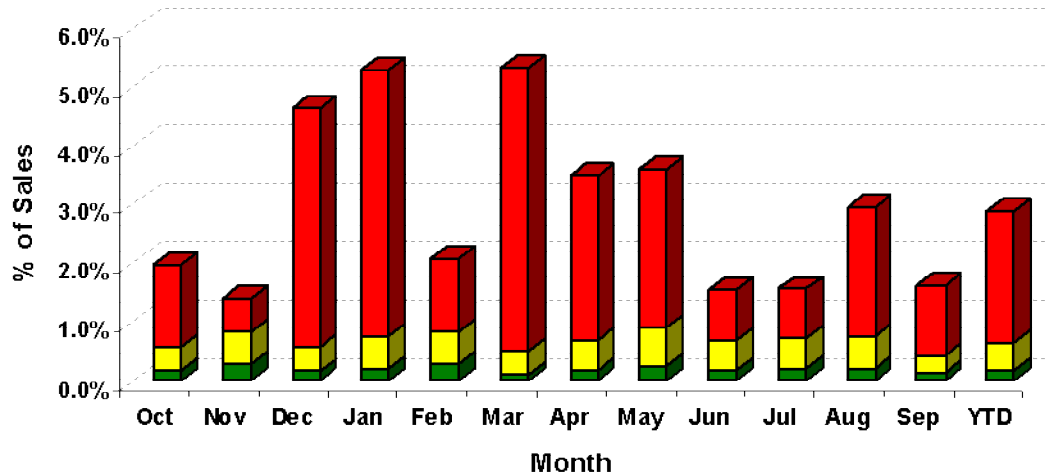
Quality Control

- Inspection & Test
- Tool & Gauge
- Manufacturing Process Control

New Initiatives

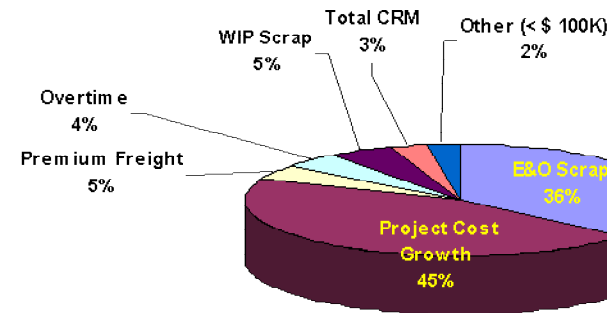
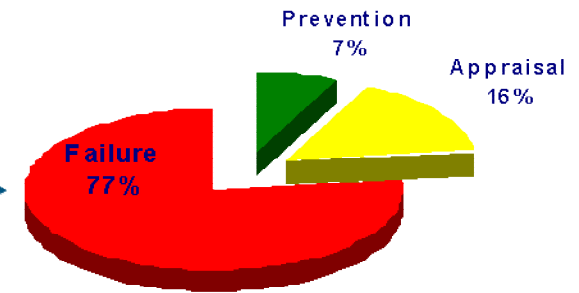
- Six Sigma (LEAN/DFSS)
- Quality Data Consolidation
- Requirements Management
- Etc., Etc., Etc...

Cost of Poor Quality (CoPQ)



CoPQ as a % of Sales

CoPQ Components

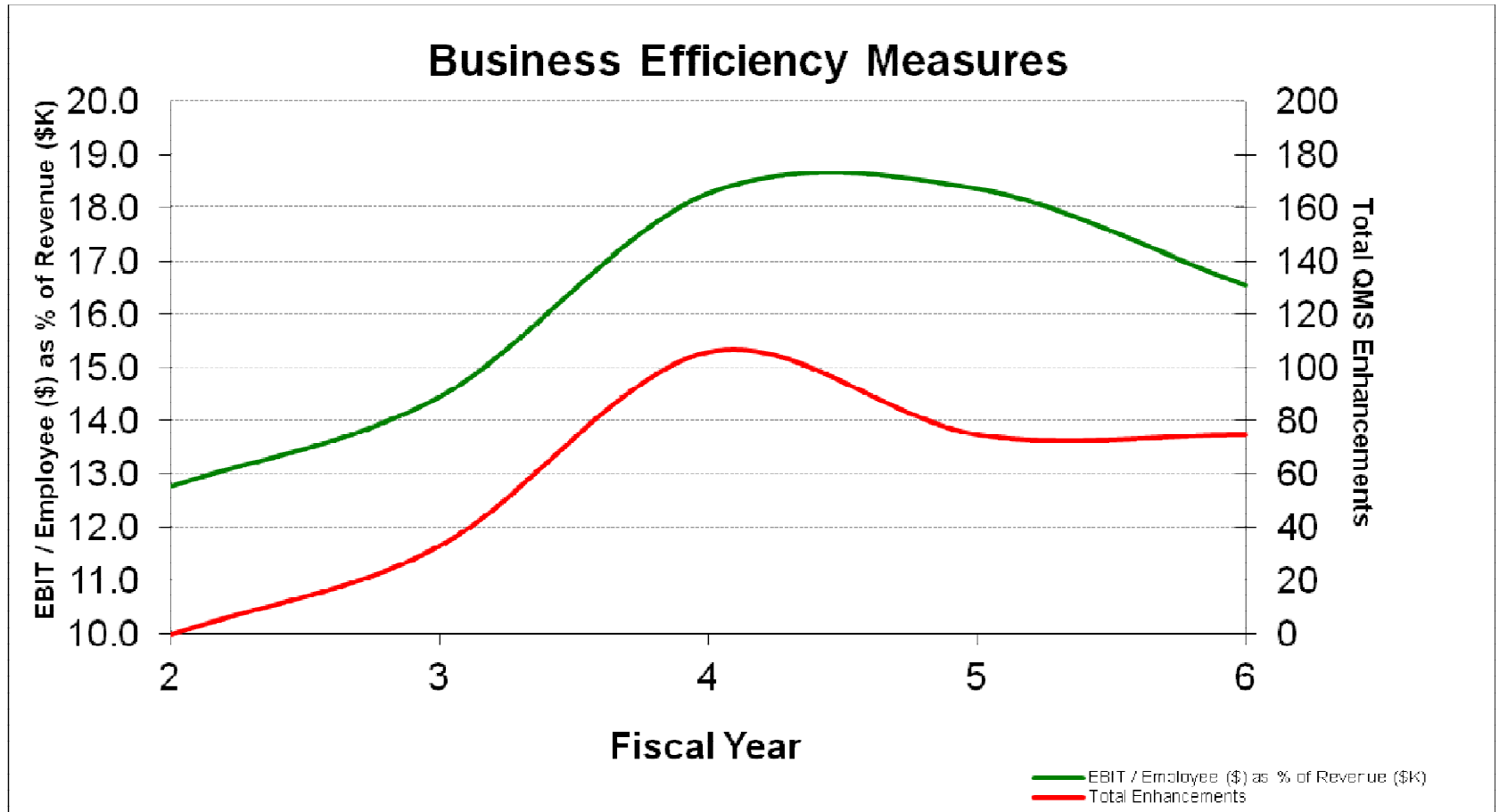


CoPQ Failure Components

- **CoPQ YTD:** 2.9 % of Sales
 - Prevention: 0.2 % of Sales
 - Appraisal: 0.5 % of Sales
 - Failure: 2.2 % of Sales

- **CoPQ Definition:** Those costs created by the imperfection of our products and services

Overall Business Improvement Measures



Summary

The Product Integrity Organization:

- Met the Quality needs of a growing Systems Business while supporting an existing Products Business
- Drove continual improvement in Profitability and Customer Satisfaction
- Provided “Classical” Quality support
- Permitted integration of Global facilities under a single ISO 9001 certified Quality Management System
- Became a contributing member of the Senior Management by establishing Business related metrics
- And.....Made it easier to do things right

Questions

