IPPS Netherlands 2017

Nursery Building Blocks

MISSISSIPPI STATE UNIVERSITY

MS AGRICULTURAL AND FORESTRY EXPERIMENT STATION

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Presentation Overview

Mindset
How I See A Nursery Process
Building Blocks
Techniques
Summary

A Brain Exercise ??

- How are the following numbers ordered??

8 5 4 9 1 7 6 3 2 0

Eight, Five, Four, Nine, One, Seven, Six, Three, Two, Zero

Alphabetical order

- Sometimes you must look at problems from a different perspective…

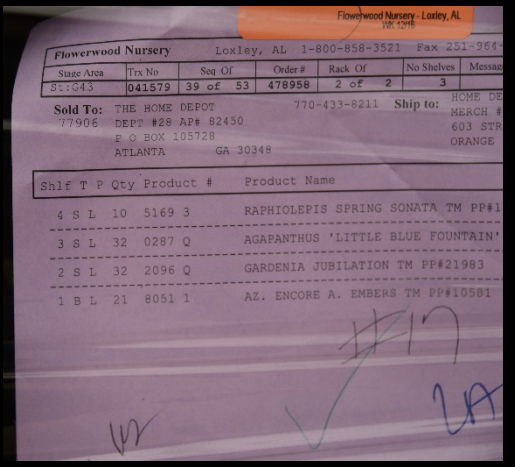
A System

- An assemblage or combination of elements or parts forming a complex unitary whole. A coordinated body of methods or a detailed scheme or plan of procedure; such as a management philosophy or process.

A Process Defined

Nursery

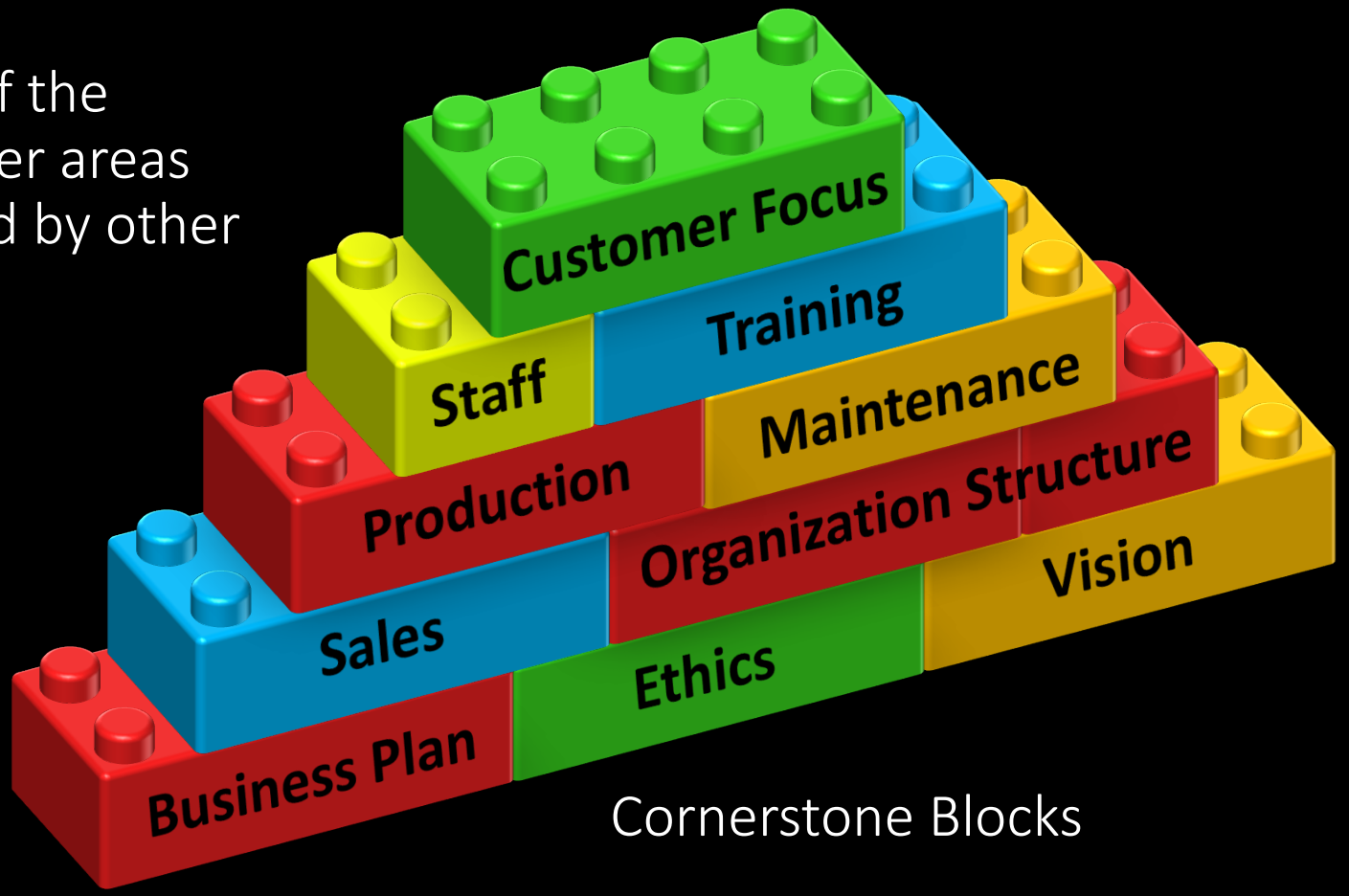
- Typical manufactured item characteristics
  - Customer order driven
  - Orders drive inventory
  - Raw materials
  - Labor component / Processing time
  - Main concerns include cycle time and quality
  - Time sensitive shipping / delivery
  - Customer satisfaction feedback loop



Building ‘Blocks’

Nursery ‘Blocks’

Process based sections of the organization support other areas and are in turn supported by other areas



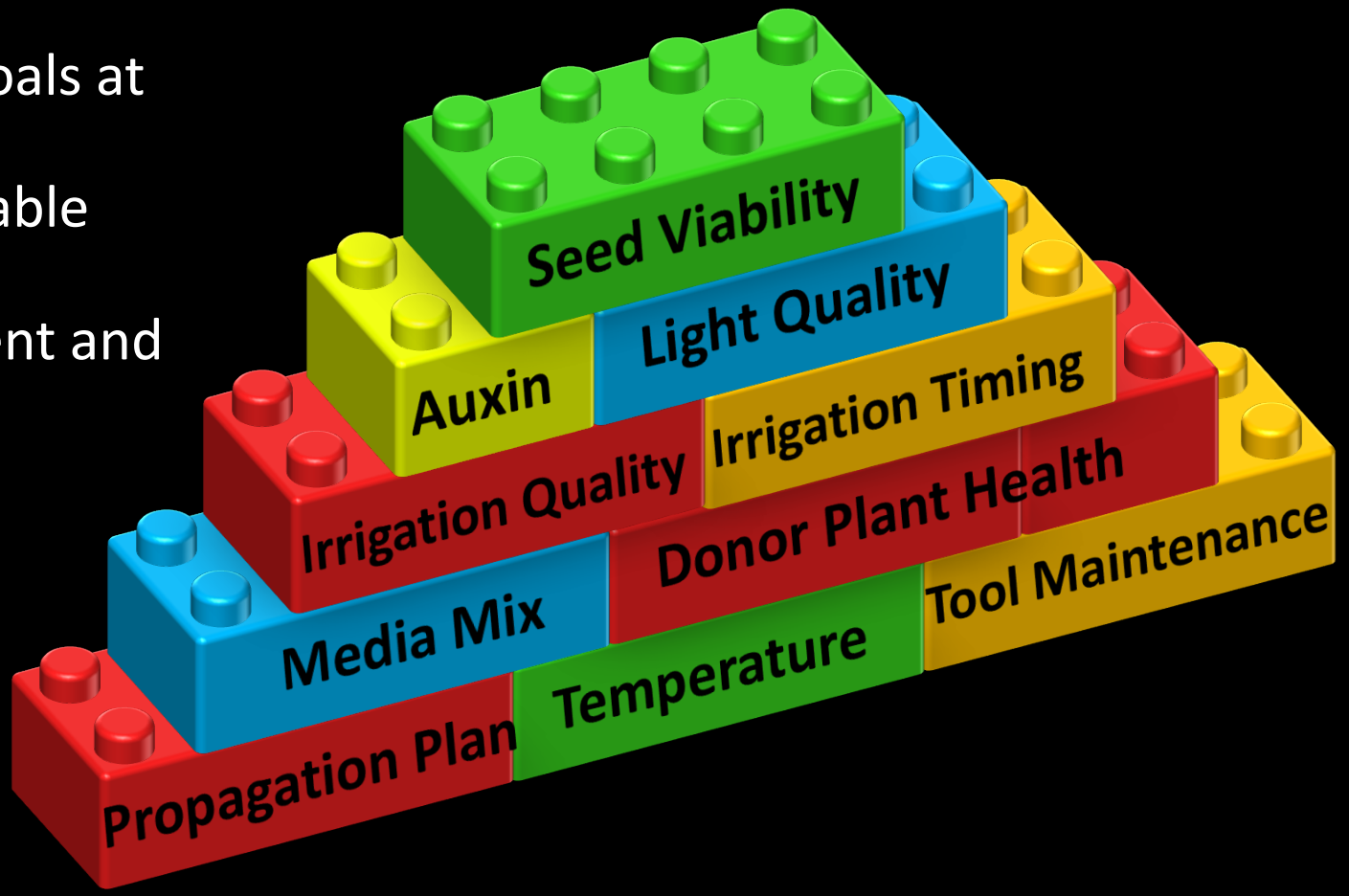
Cornerstone Blocks

Process Building ‘Blocks’

- Expectations and Process Tolerance
- Organizational Culture
- Lean Theory

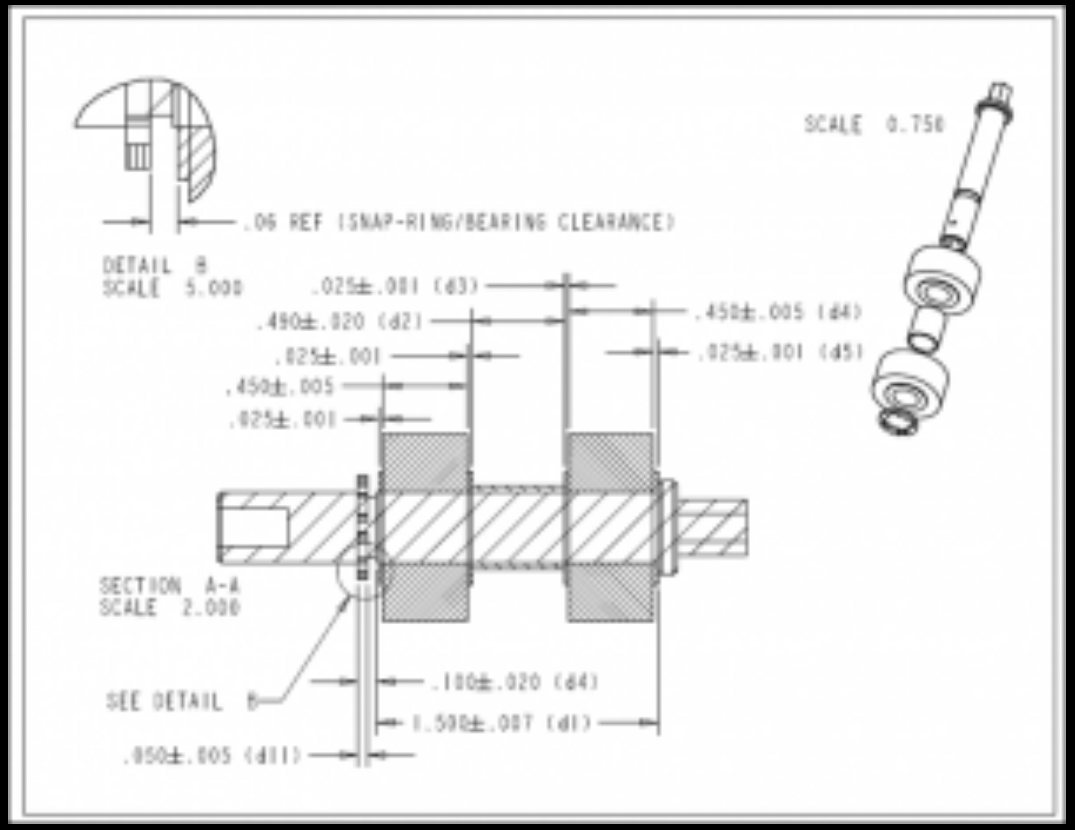
Propagation ‘Blocks’

- Quality expectations/goals at each process step
- With a range of acceptable outputs
- Typically set independent and exclusive other goals



Expectations and Tolerance

- Tolerance Stack-up
- In many cases is additive
- Easier to accept process quality that 'almost' meets your expectations

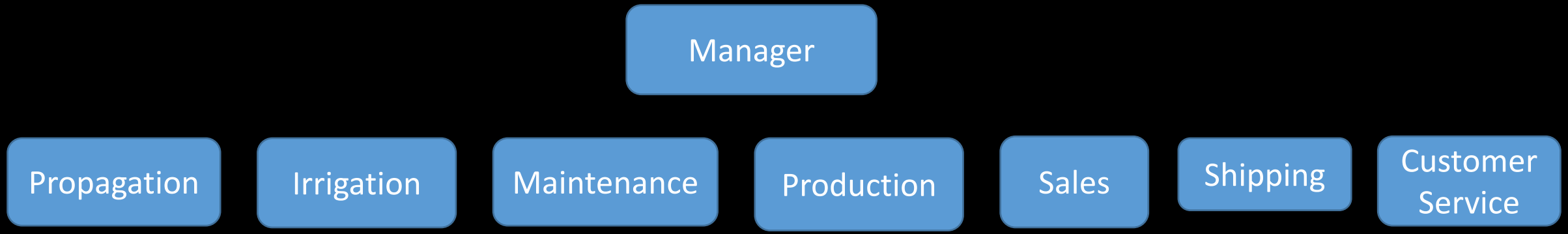


Overall Process Quality

- Quality level accepted at each step of the process drives overall success
- Improvement can be found by tightening your tolerance

Organization Culture

A Growing Concern Nursery



Organization Structure

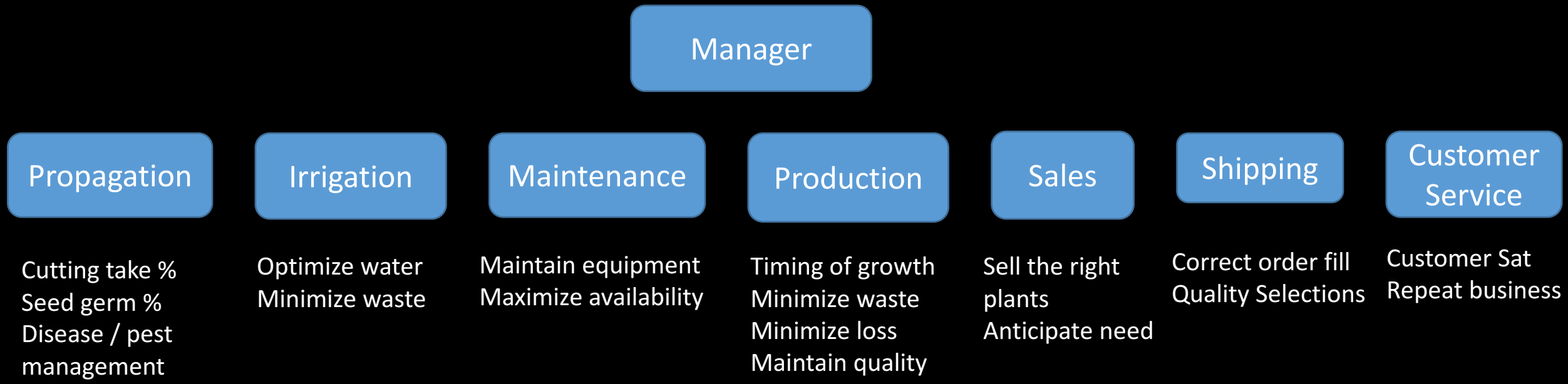
A Growing Concern Nursery

Manager

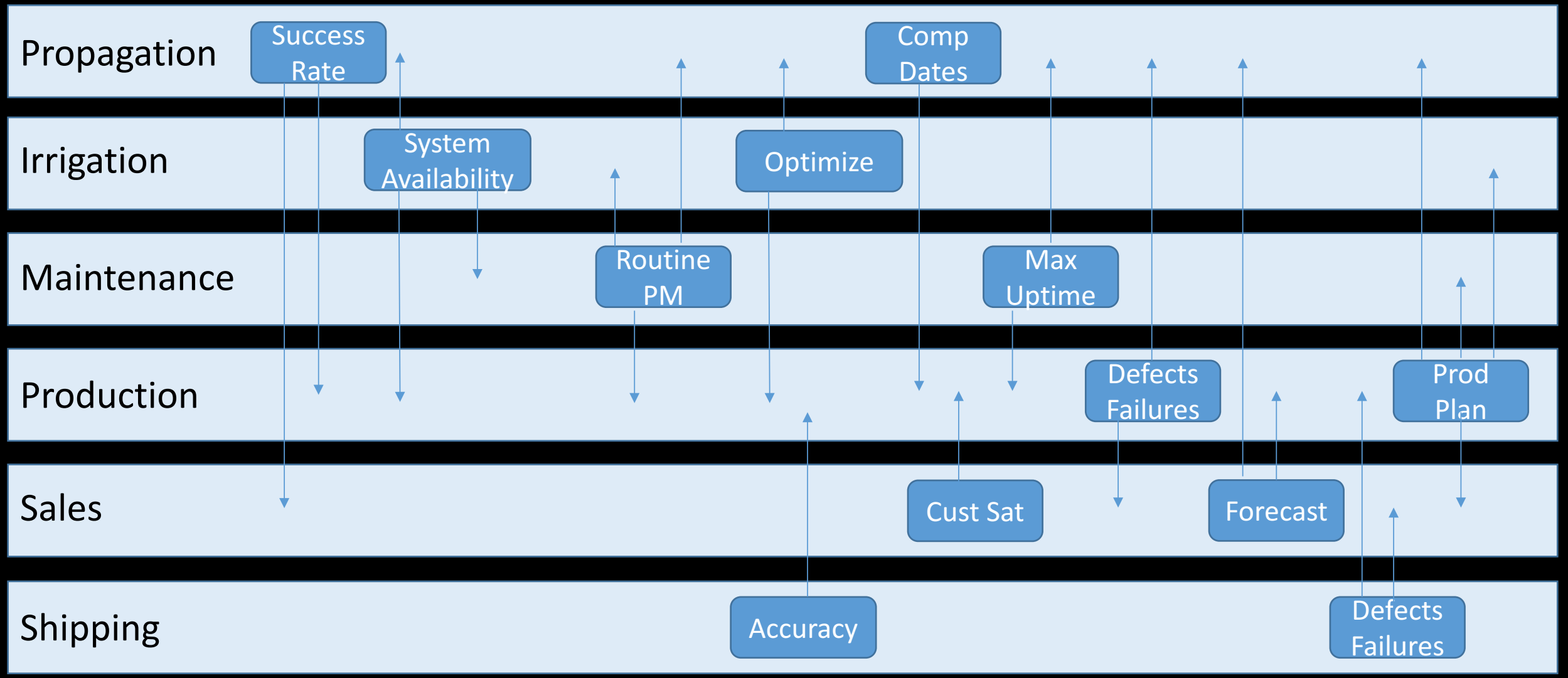
Propagation	Irrigation	Maintenance	Production	Sales	Shipping	Customer Service
Cutting take % Seed germ % Disease / pest management	Optimize water Minimize waste	Maintain equipment Maximize availability	Timing of growth Minimize waste Minimize loss Maintain quality	Sell the right plants Anticipate need	Correct order fill Quality Selections	Customer Sat Repeat business

Organization Structure

A Growing Concern Nursery



- The organization should align both Horizontally and Vertically.
- Activity goals must relate to process goals and derived from strategic goals
- Processes must be integrated wholly, with goals, measures AND a management system that uses these goals and measures to run smoothly (and improve when needed)


Propagation
Success Rate
Comp Dates
Irrigation
System Availability
Optimize
Maintenance
Routine PM
Max Uptime
Production
Defects Failures
Prod Plan
Sales
Cust Sat
Forecast
Shipping
Accuracy
Defects Failures

Lean Theory

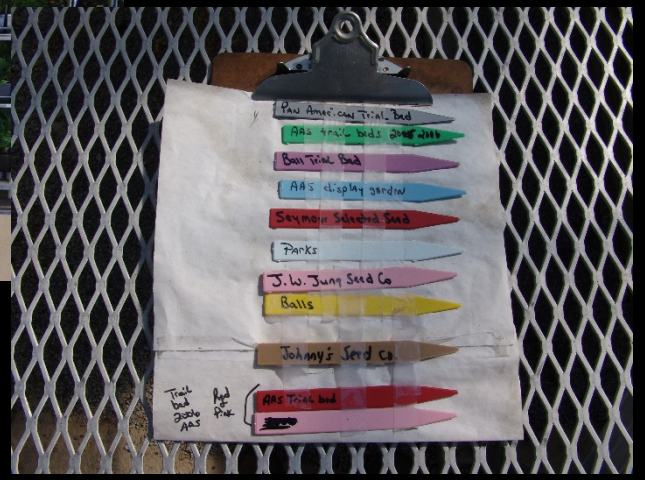
- Doing more with less
- Focuses on satisfying the customer
  - Value through Quality, Cost and Delivery
- Waste reduction
- Structured approach to improvement

Lean Components

- Lean Terminology
  - 5S's
  - Kaizen
  - Wastes (Muda, Muri, Mura)
  - Jidoka / Autonomation
  - Kanban
  - Poka Yoke

5 S's

- Sort
  - Separating the necessary from the unnecessary
- Set in order
  - Arranging needed items in an orderly fashion
- Shine
  - Keeping work places clean
- Standardize
  - Where possible, develop (and follow) standard procedures
- Sustain
  - Develop a shared set of values among the entire team



Waste

Typically thought of as…

- Product not sold
- Un-sellable product
- Damaged plants
- That dump out back

Waste defined in ‘Lean’

- Any non value-added process within your operation
- Muda
- 7 Wastes
  - Waiting
  - Transport
  - Motion

Waiting

Waiting can be….

- Waiting on supplies
- Waiting on product from a prior process
- Waiting on sufficient instruction / training

Transport

Movement of product through your operation

- Trailer/Wagons
- Conveyors
- Human transport

Motion

Movements of your most valuable resource

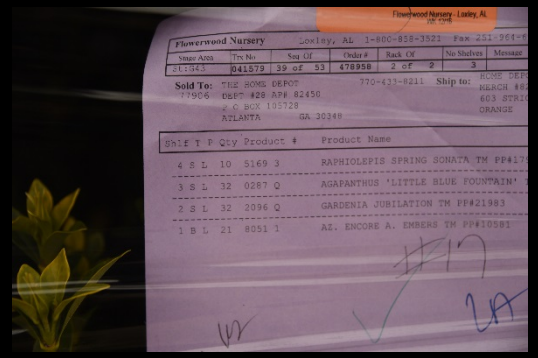
- Placement of items and proximity to workers
- Excessive movement
- Pacing
- Reaching / twisting
- Transfer of items in hands
- Safe moves

Autonomation

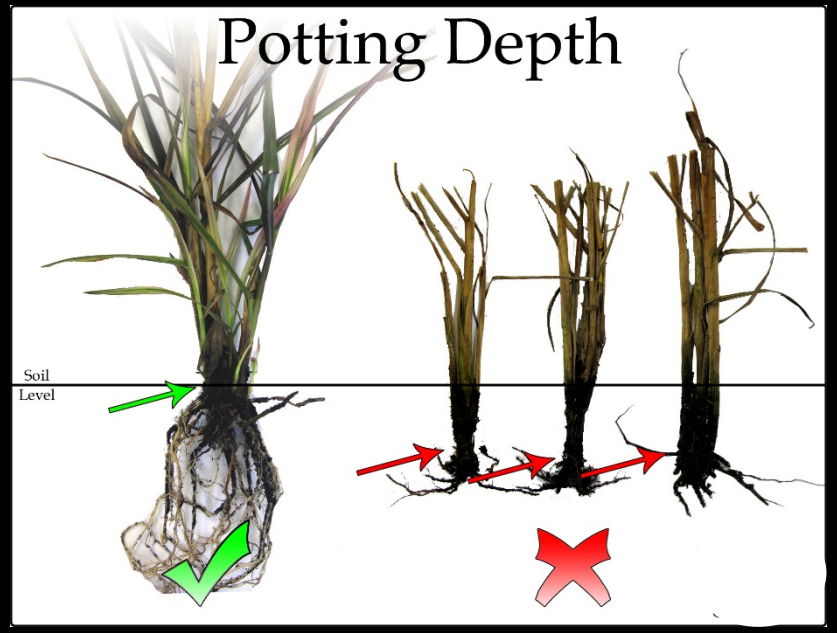
- Recognize that integration of equipment / mechanization requires that the operator and machine become ‘one’
  - Proper training
  - Machine feedback
  - Employee understanding and buy-in
  - Only add equipment to optimized processes

Poka Yoke

- Mistake-Proofing
- Understanding the difference between mistakes vs defects
- Recognize that inspection is never 100% effective
- Purpose of Poka Yoke
  - Do not accept a defect
  - Do not create a defect
  - Do not allow a defect from passing on to the next process step
- When do you need it?



Poka Yoke



Lean Management

- Number one reason why lean projects fail is management related
- Managers must evolve their management style
- Focus needs to be on continuous improvement
- Focus on the long term
- Entire organization must share in problem resolution

Building Block Principles

Principle #1

$$\sum_{i=1}^{n} (Process\ Step\ Output\ Quality) = Overall\ Quality$$

Building Block Principles

Principle #2

Order will drive efficiency

Building Block Principles

Principle #3

Movement ≠ Work

Building Block Principles

Principle #4

Management style drives culture

Building Block Principles

Principle #5

Don’t pave over old cow paths

Building Block Principles

Principle #6

Other than the cornerstone, the most important nursery building block is ….

Irrelevant

Building Block Principles

Principle #7

Don’t define yourself by what you grow today

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Thanks!!

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