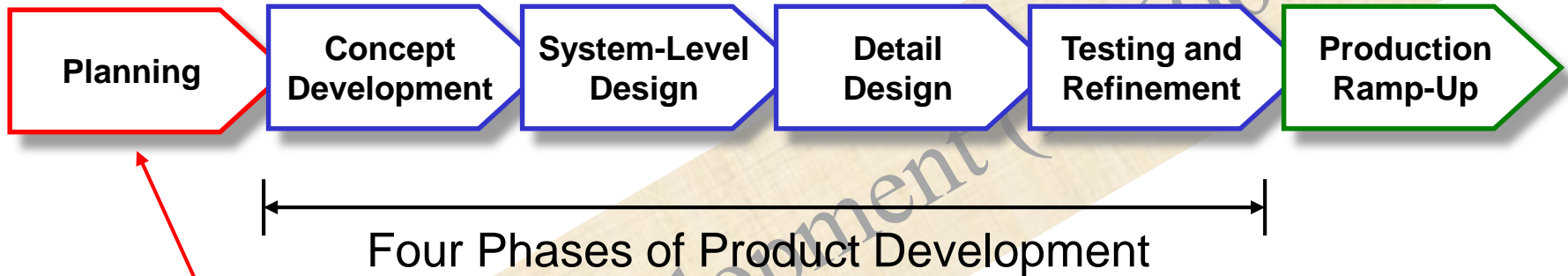


# Product Planning

Product Development (EP60003)

# Product Development Process



The product planning phase precedes the product development process.

# PP addresses these questions

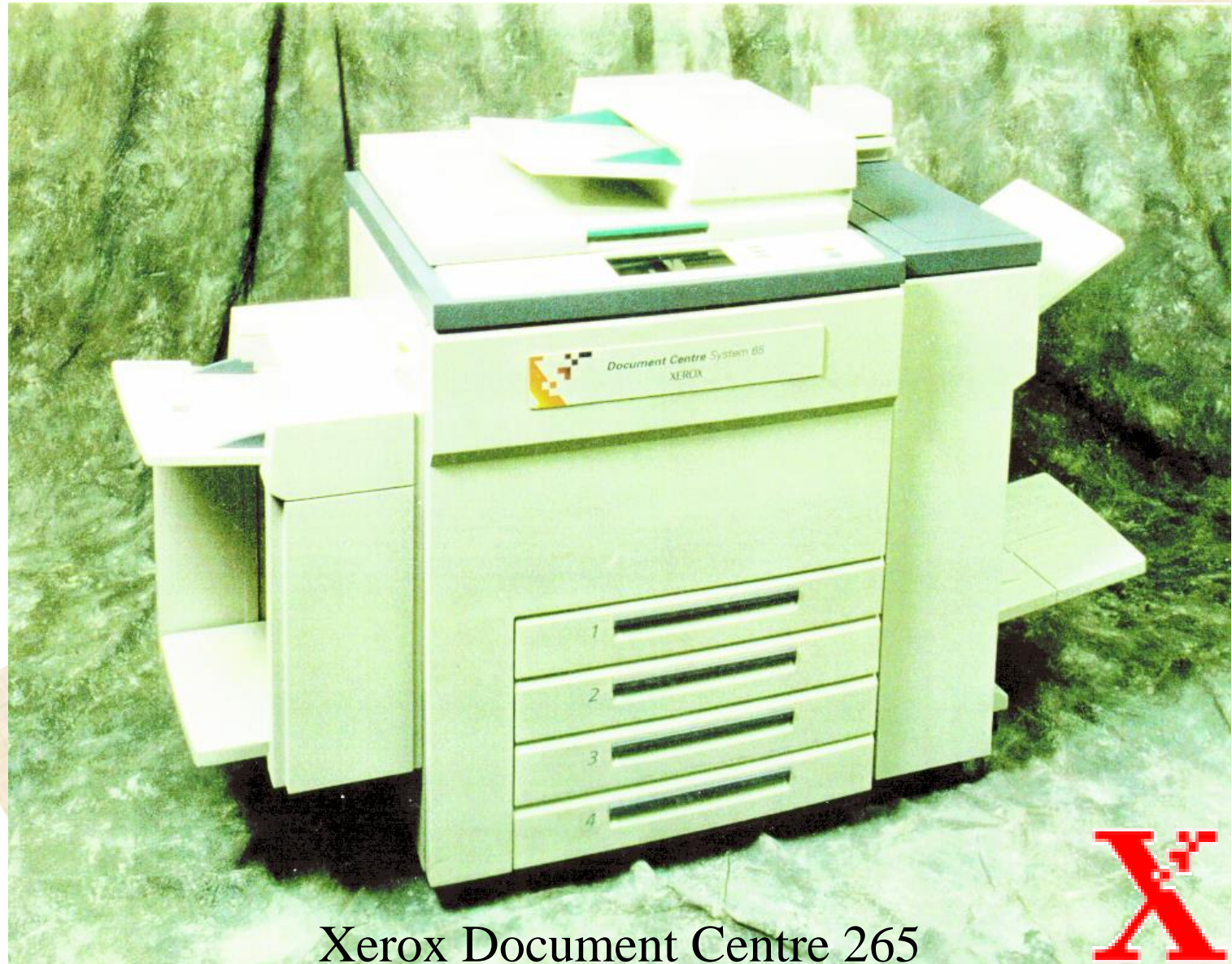
- What Product Dev. Projects will be undertaken?
- What mix of fundamentally new products, platforms & derivative products should be pursued?
- How do the various projects relate to each other as a portfolio?
- What will be the & sequence of the projects?

# Questions included in the mission statement

- What market segments should be considered in designing the product & developing its features?
- What new technologies (if any) should be incorporated into the new product?
- What are the manufacturing & service goals & constraints?
- What are the financial targets for the project?
- What are the budget & time frame for the project?

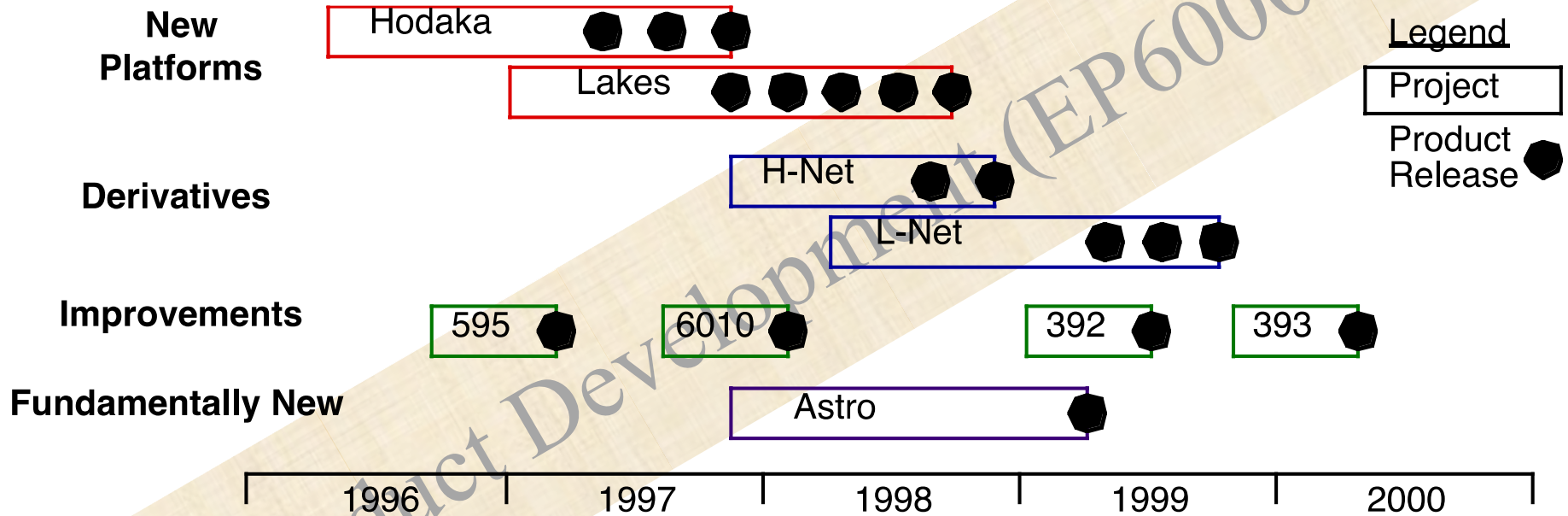


# Xerox Lakes Project Example



Xerox Document Centre 265

# A Product Plan

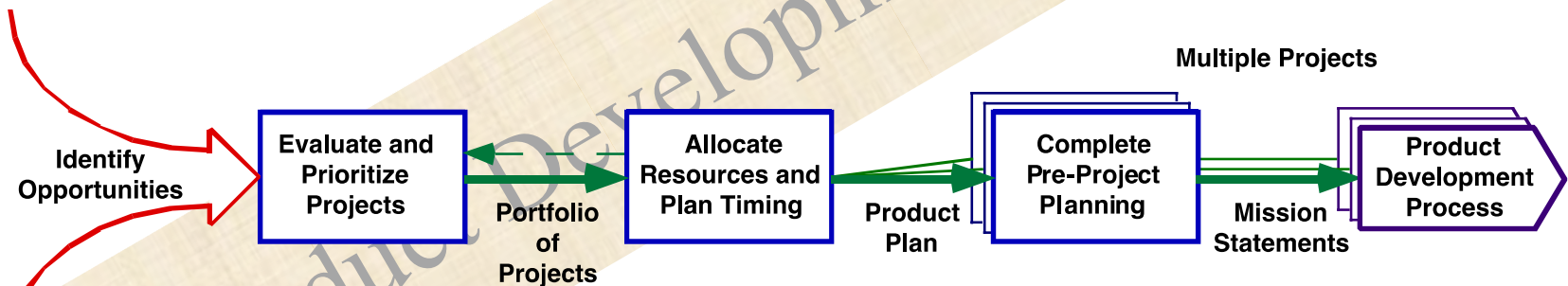


## Lack of planning the portfolio of development projects results in:

- Inadequate coverage of target markets with competitive products
- Poor timing of market introduction of products
- Mismatches between aggregate development capacity & the number of projects pursued
- Poor distribution of resources, with some projects overstaffed & others understaffed
- Initiation & subsequent cancellation of ill-conceived projects
- Frequent changes in the directions of projects

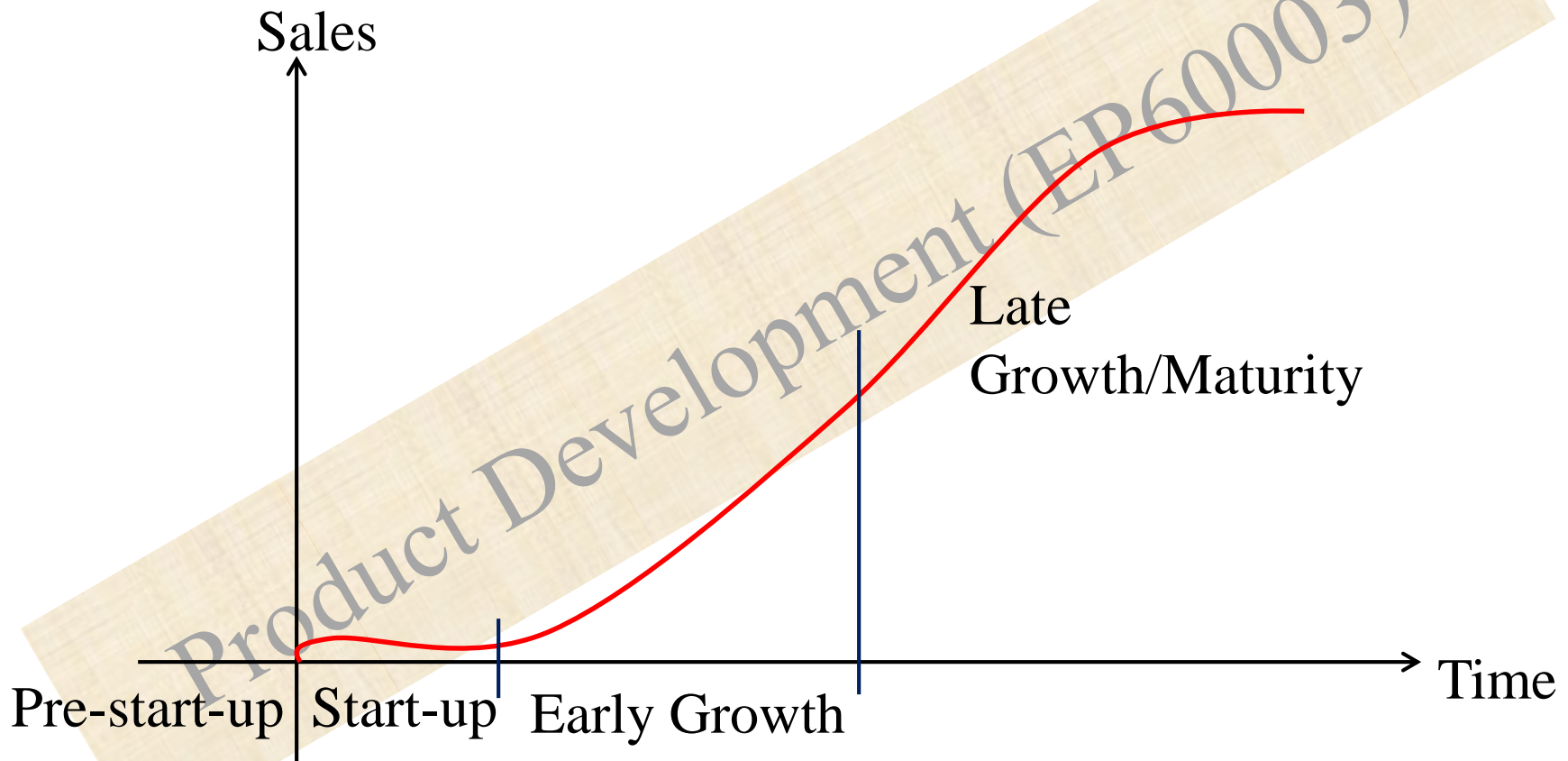
# The Product Planning Process

## The Process



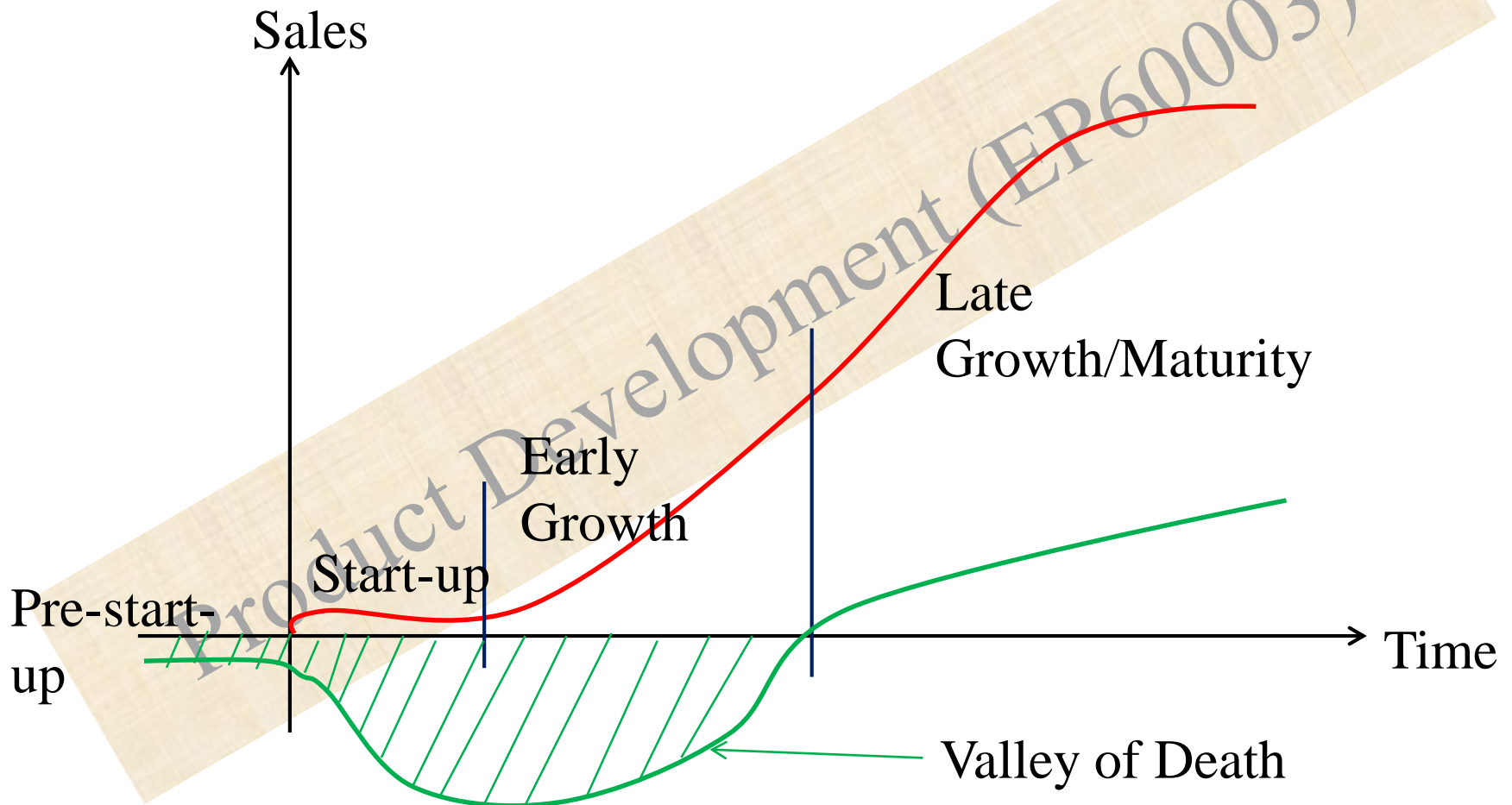


# Life Cycle of a Typical Business Venture



# Start-Up Phase

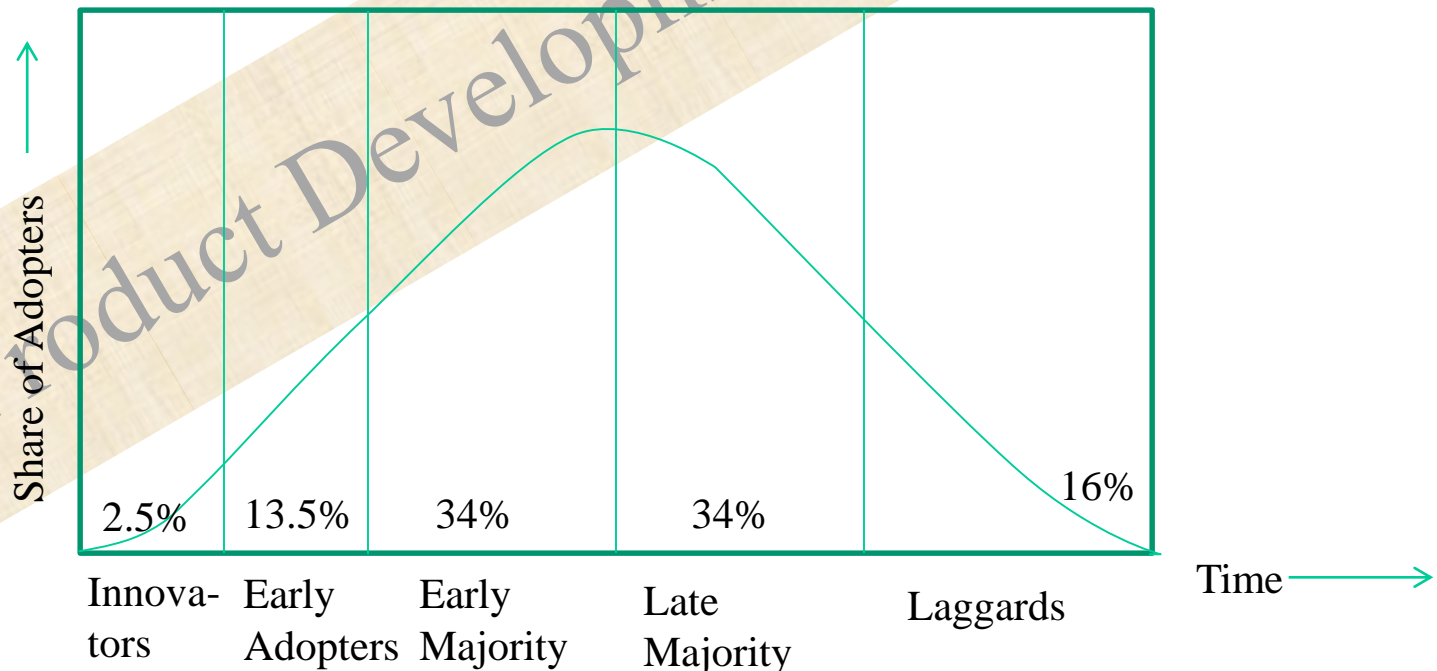
*The Survival Factor*



# Start-Up Phase

## *Getting the first customer:*

- People differ in their adoption of new ideas
- Only ~ 16% of the customers want to try out new ideas at some risk and the rest adopt
- Entrepreneurs should study the characteristics of innovators & early adopters & target them for initial market entry



## Five Step Process:

1. Identify opportunities
2. Evaluate & prioritize projects
3. Allocate resources & plan timing
4. Complete pre-project planning
5. Reflect on the results & the processes

Product Development (EP60003)

# 1. Identify Opportunities

***Funneling Opportunities from sources like:***

- Marketing & Sales Personnel
- Research & Technology Development Organizations
- Current Product Development Teams
- Manufacturing & Operations Organizations
- Current or Potential Customers
- Third Parties such as Suppliers, Inventors & Business Partners



# 1. Identify Opportunities

## *Approach to identify PD opportunities:*

- Document frustrations & complaints that current customers experience with existing products
- Interview lead users, with attention devoted to innovations by these users & modifications these users may have made to the existing products
- Consider implications of trends in life styles, demographics & technology for existing product categories & for opportunities for new product categories
- Systematically gather suggestions of current customers, perhaps through the sales force or customer service system
- Carefully study competitors' products on an ongoing basis
- Track the status of engineering technologies to facilitate transfer of the appropriate technologies from basic research & technology development into Product Development

# 1. Identify Opportunities

## ***At XEROX:***

### **❑ Opportunity Statements:**

- Create a document distribution statement in which a networked printing device resides on each office worker's desk & automatically delivers mail & other documents
- Create document delivery software that allows the digital delivery & storage of most intra-organizational documents via a worker's PC

### **❑ Lakes Project Statement:**

Develop a new B&W, digital, networkable, document center platform for the office market, including scanning, storage, fax, distribution & printing capabilities

## 2. Evaluate & Prioritize Projects

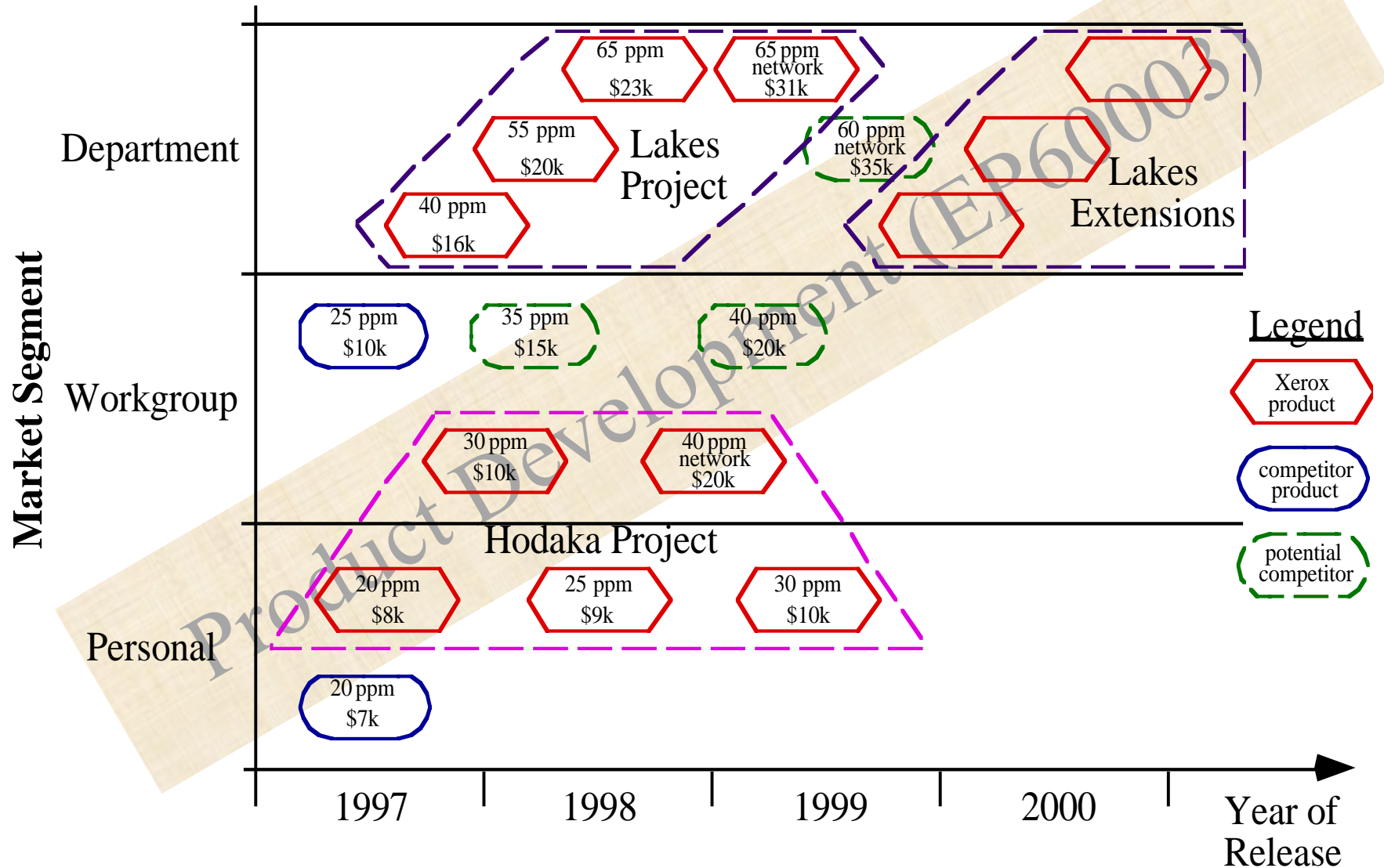
### ***Competitive Strategy:***

- Technology Leadership
- Cost Leadership
- Customer Focus
- Imitative

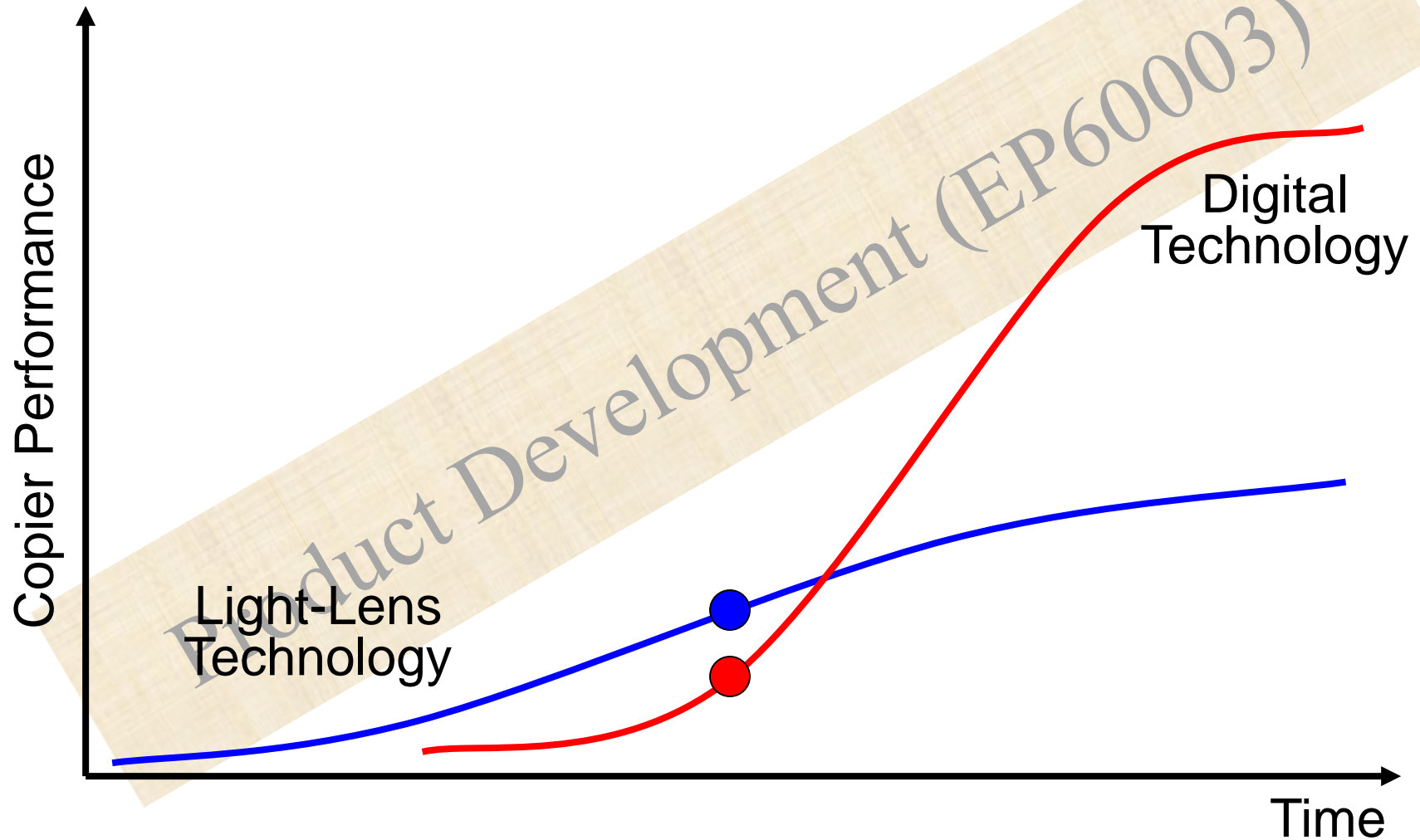
### ***At Xerox:***

“Print & then distribute” *transforms to* “Distribute & then Print”

# Market Segment Map



# Technology S-Curves



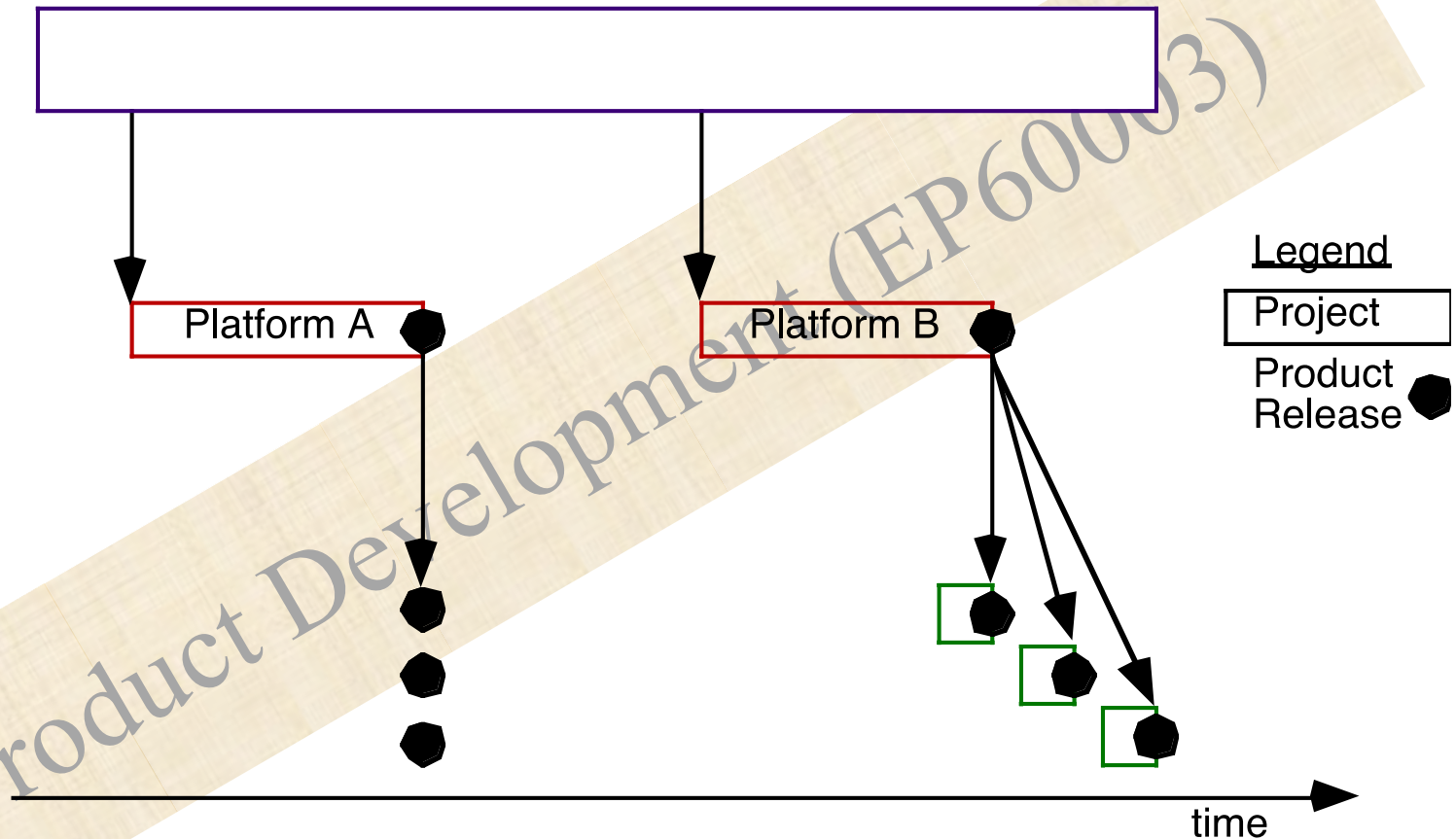


# Platforms vs. Derivatives

**Research and  
Technology  
Development**

**Platform  
Product  
Development**

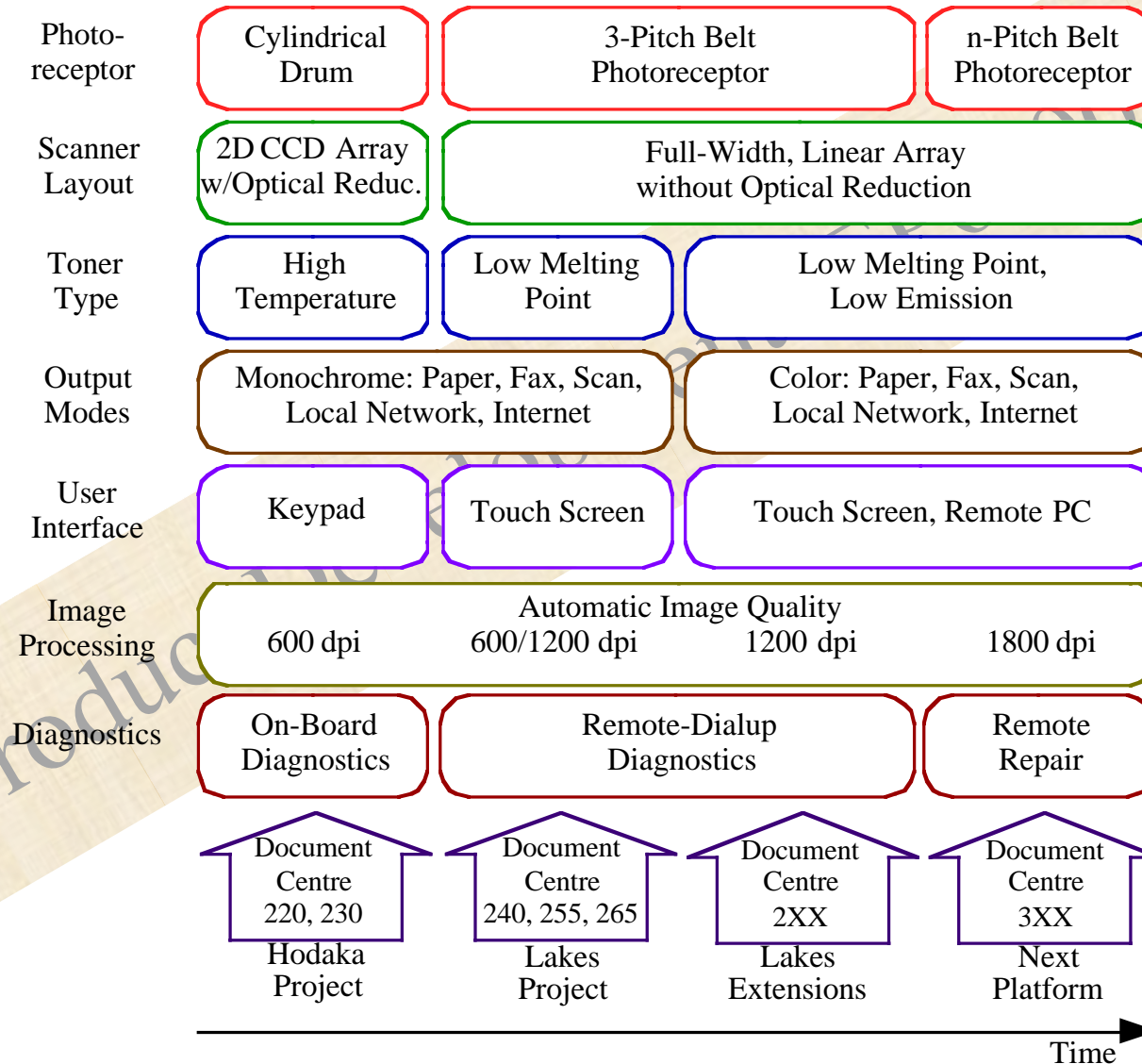
**Derivative  
Product  
Development**



# Technology Roadmap

## Functional Elements

## Technologies

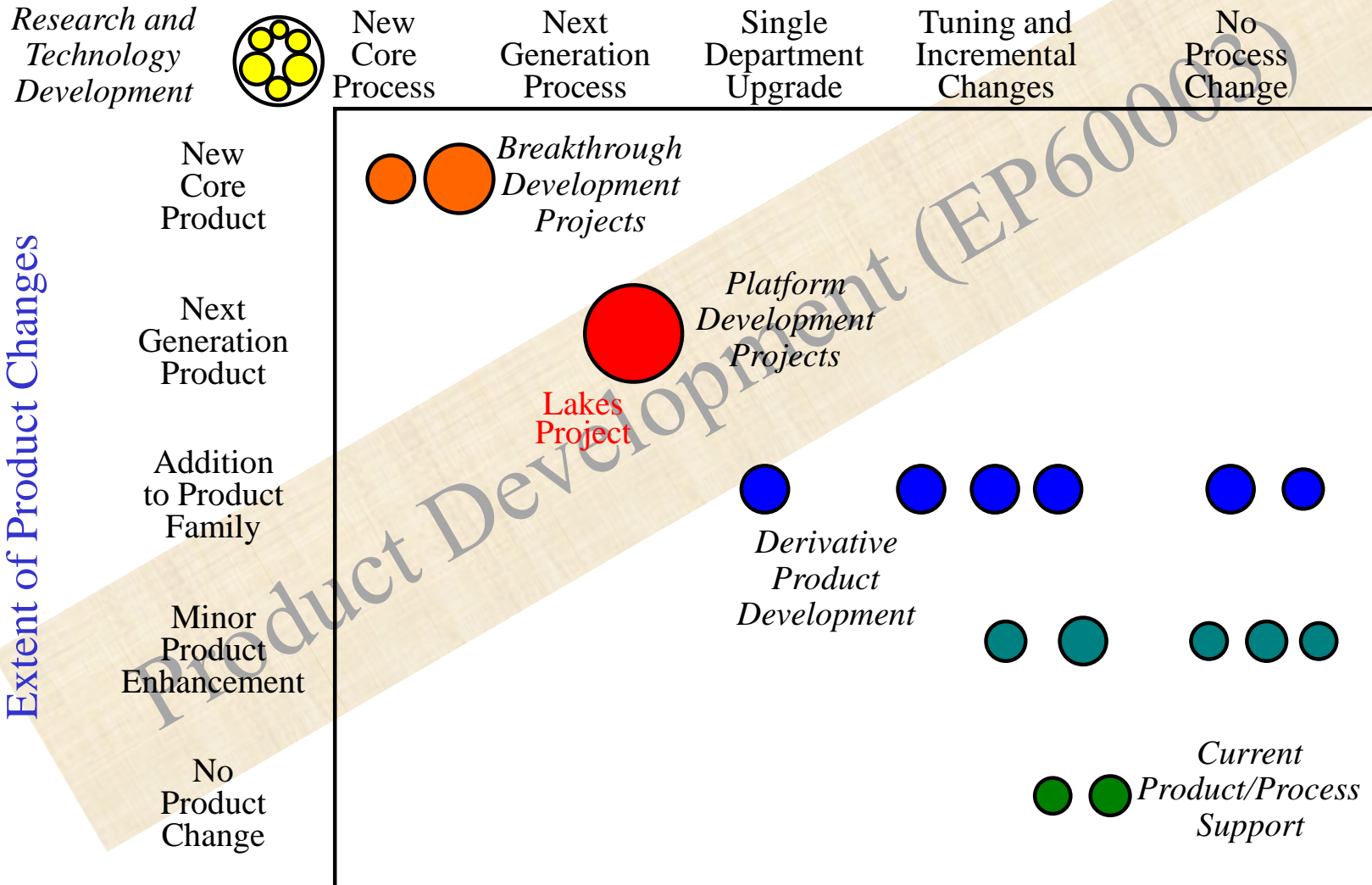


# Criteria for evaluating fundamentally new product opportunities:

- Market size (units/year x average price)
- Market growth (% per year)
- Competitive intensity (No. of competitors & their strengths)
- Depth of the firm's existing knowledge of the market
- Depth of the firm's existing knowledge of the technology
- Fit with the firm's other products
- Fit with the firm's capabilities
- Potential for patents, trade secrets or other barriers to competition
- Existence of a product champion within the firm

# Product-Process Change Matrix

Extent of Production Process Changes



### 3. Allocate Resources & Plan Timing

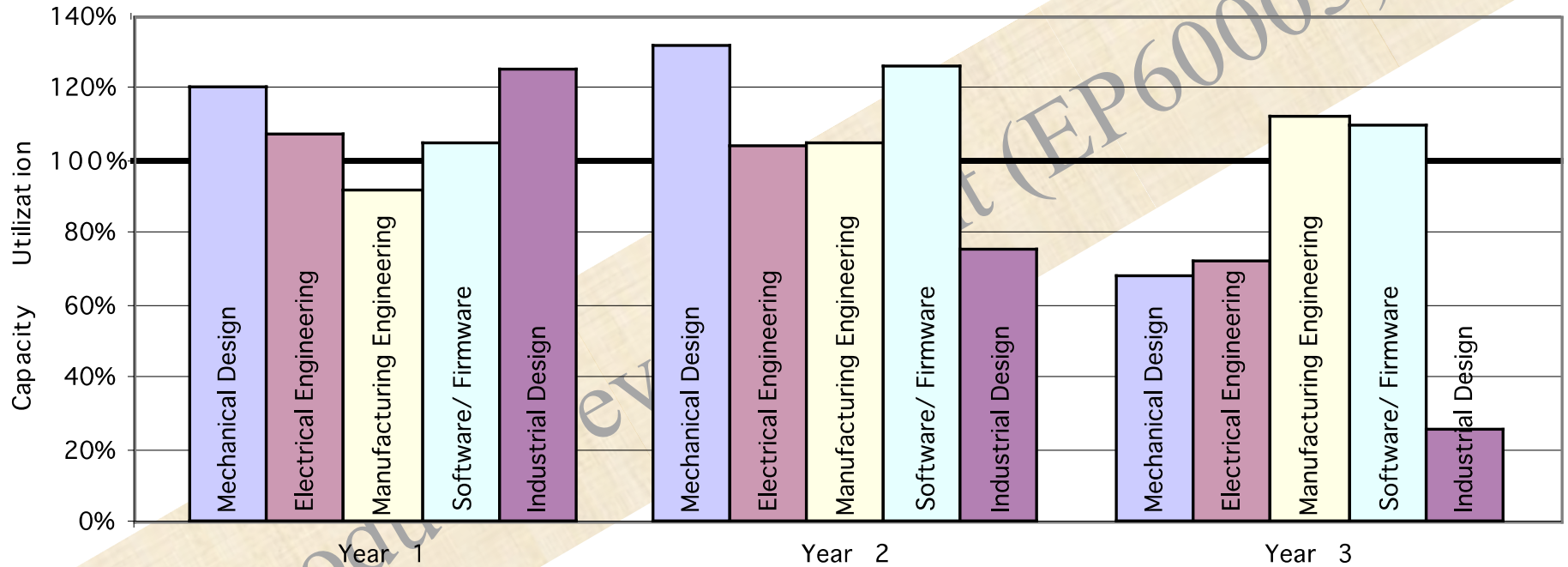
#### ***Project Timing:***

- Timing of product introductions
- Technology readiness
- Market readiness
- Competition

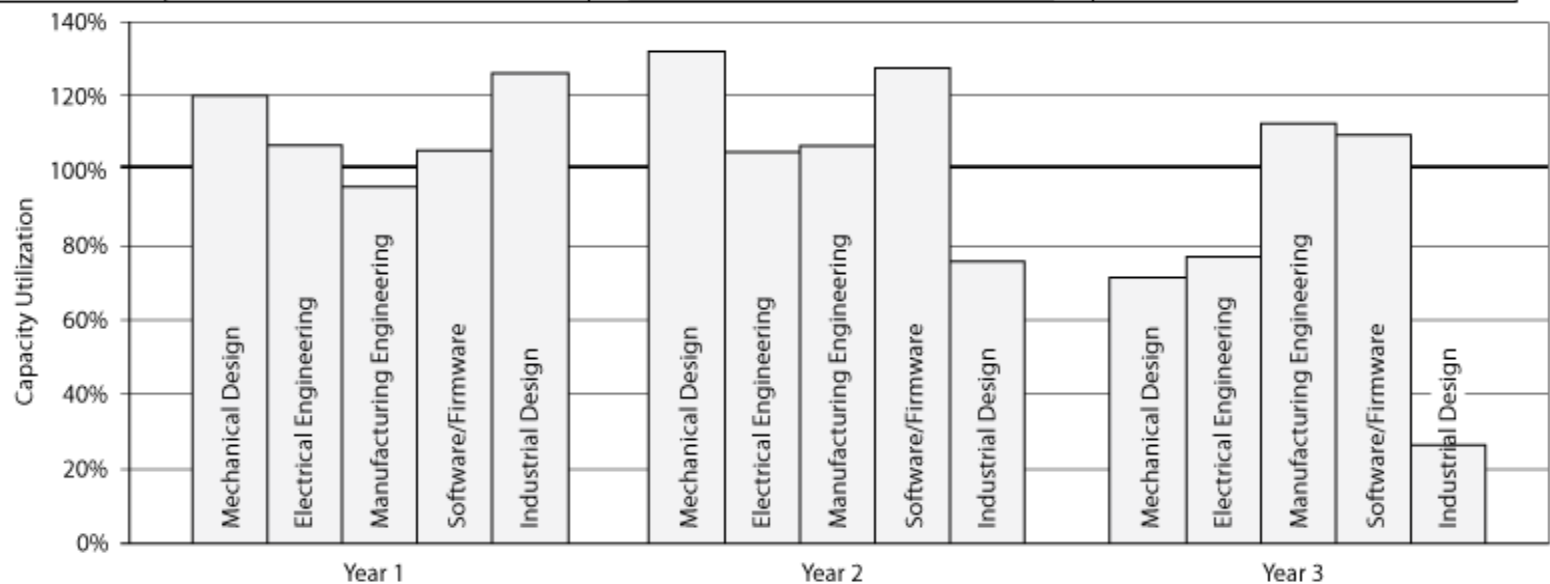
Product Development (EP600003)



# Aggregate Resource Planning



	Year 1					Year 2					Year 3				
	Mechanical Design	Electrical Engineering	Manufacturing Engineering	Software/Firmware	Industrial Design	Mechanical Design	Electrical Engineering	Manufacturing Engineering	Software/Firmware	Industrial Design	Mechanical Design	Electrical Engineering	Manufacturing Engineering	Software/Firmware	Industrial Design
Lakes Project	155	160	105	75	7	210	160	140	80	4	125	140	160	90	2
6010 Project	30	25	10	5	1	25	20	5	6				5		
595 Project	60	24	25			20	15	15							
Astro Project	55	60	44	25	2	75	65	50	40	2	45	40	60	20	
Resource Demand	300	269	184	105	10	330	260	210	126	6	170	180	225	110	2
Resource Capacity	250	250	200	100	8	250	250	200	100	8	250	250	200	100	8
Capacity Utilization	120%	108%	92%	105%	125%	132%	104%	105%	126%	75%	68%	72%	113%	110%	25%



## 4. Complete pre-project planning

### Initial Vision Statement of 'Lakes':

*'Develop a networked, mid-range, digital platform for imaging, marking & finishing'*

### **Mission Statements:**

- **Brief one sentence description of the product**
- **Benefit proposition**
- **Key business goals**
- **Target market(s) for the product**
- **Assumptions & constraints that guide the development effort**
- **Stakeholders**

# Lakes Project Mission Statement

## **Product Description**

- Networkable, digital machine with copy, print, fax, and scan functions

## **Key Business Goals**

- Support Xerox strategy of leadership in digital office equipment
- Serve as platform for all future B&W digital products and solutions
- Capture 50% of digital product sales in primary market
- Environmentally friendly
- First product introduction 4thQ 1997

## **Primary Market**

- Office departments, mid-volume (40-65 ppm, above 42,000 avg. copies/mo.)

## **Secondary Markets**

- Quick-print market
- Small 'satellite' operations

## **Assumptions and Constraints**

- New product platform
- Digital imaging technology
- Compatible with CentreWare software
- Input devices manufactured in Canada
- Output devices manufactured in Brazil
- Image processing engine manufactured in both USA and Europe

## **Stakeholders**

- Purchasers and Users
- Manufacturing Operations
- Service Operations
- Distributors and Resellers

# 5. Reflect on the results & the process

## *Questionnaire:*

- Is the opportunity funnel collecting an exciting & diverse set of product opportunities?
- Does the product plan support the competitive strategy of the firm?
- Does the product plan address the most important current opportunities facing the firm?
- Are the total resources allocated to the PD sufficient to pursue the firm's competitive strategy?
- Have creative ways of leveraging finite resources been considered?
- Does the core team accept the challenges of the resulting mission statement?
- Are the elements of the mission statement consistent?
- Are the assumptions listed in the mission statement really necessary or is the project over constrained?
- How can the PP process be improved?