

Speed to Market through Program Management

Presented by

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The Question to Answer this morning:

How can we most effectively and efficiently bring a successful product to market?

The short answer:

Use a well developed process and use this process to constantly and relentlessly move forward. Typically this will involve more resources on the front end, during the planning portions of the project, than are typically allocated.

Product Design Process

- Phase 1 - Concept
- Phase 2 - Feasibility
- Phase 3 - Development and Design
- Phase 4 - Introduction
- Phase 5 - Standardization
- Phase 6 - Withdrawal

Define Terms

- Proof of Concept
- Alpha Prototype
- Beta Prototype
- Pre-Production Prototype
- First Run Production
- Production

Phase 1 - Concept

- Product Specifications
- Design Concept
- Comparison of Specifications and Concepts to market needs and approximate price points.

Phase 2 - Feasibility

- Proof-of-concept prototype
- Alpha prototype
- Review price and performance against market needs.

Phase 3 - Development and Design

- Beta Prototype
- Pre-Production

Phase 4 - Introduction

- Marketing evaluation
- Production evaluation

Phase 5 - Standardization

- Accessorize and add to product's selling potential
- Reduce manufacturing costs

Phase 6 - Withdrawal

- Plan for product withdrawal and replacement

Example of how we can successfully
use this methodology in the real
world

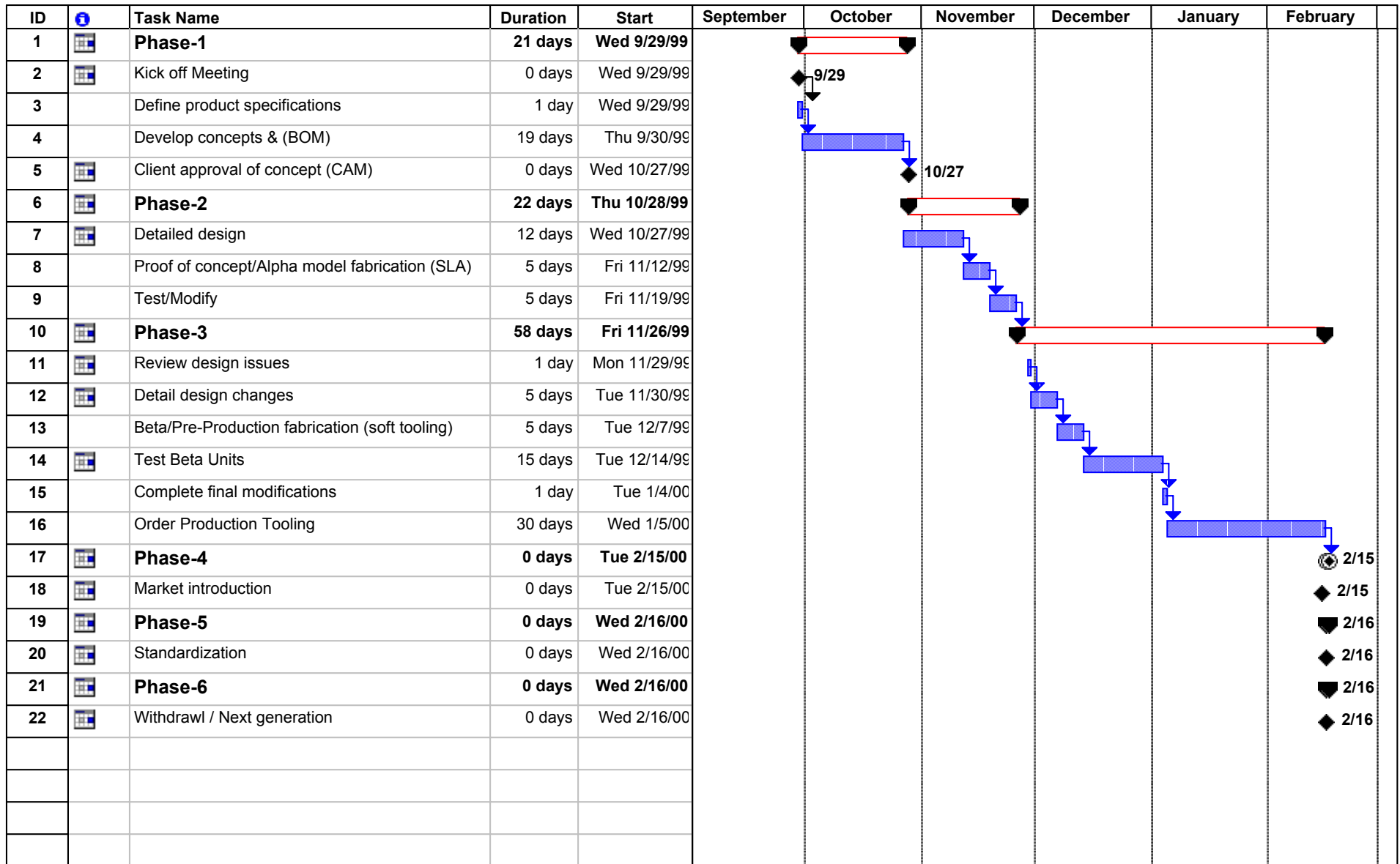
Princeton Tec Pulsar

The Challenge

- Bring new product to market from initial concept to production in less than four months

Background

- Last product had taken over 18 months to bring from concept through production
- Internal costs on last product had been excessive
- Major trade show scheduled for end of January 2000, project had to be completed for the show.
- Company needed to be able to accept orders at the show and deliver in a timely manner afterwards.



Princeton Tech - LED Keychain Specification

<u>Description</u>	<u>Objective</u>
Housing Material	Xenoy-Injection Molded
Lamp	LED - Nichia part # NSPW 500S (Bright White) or equivalent
Power Supply	6 V DC coin cells #CR2016
Means for attachment	Metal ring
Housing Assembly	Max. 1 screw
Size of product	Min. Photon Size (Dim.) Max. Sapphire Size (Dim.)
Replaceable Battery	Replaceable
Continuous Lamp On Switch	No
Projected Volume	75,000 sales 1 st year
Target Market	Outdoor enthusiasts
Target Manufacturing Cost	\$XXX
Target Wholesale	\$YYY
Target Retail	\$ZZZ (critical cost)
Cost Ratio	Retail to Wholesale to Cost
	A:1 B:1 C:1

<u>Description</u>	<u>Future possibilities</u>
Housing Material	Explore other materials
Lamp	Explore other possibilities
Power Supply	Explore other possibilities
Means for attachment	Latch/Belt loop/Pack Loop
Housing Assembly	Eliminate all fasteners
Size of product	Change to meet market demand
Replaceable Battery	Non replaceable, mass produced disposable item
Continuous Lamp On Switch	Yes
Projected Volume	100,000 + future years
Target Market	Mass Merchant
Target Manufacturing Cost	Decrease cost
Target Wholesale	Increase/Decrease
Target Retail	Increase/Decrease

Concept Ratings Sheet

1. Will it appeal to your customer (Aesthetics)? 1=Best

1 2 3 4

2. Will it appeal to your customer (Function)? 1=Best

1 2 3 4

3. What do you like most about it?

4. What do you like least about it?

5. Will it sell? 1=Best

1 2 3 4

<u>Description</u>	<u>Cost</u>	<u>Assumptions</u>	<u>Origin</u>
LED Lamp & Assembly Qty 100,000	\$XXXea	SXX LED Lamp cost Bend and cut leads SXX.00 per hour labor rate 2 LED's cut and bent per minute 120 LED's cut and bent per hour SXX per cut and bent LED	Bob of P-Tec supplied info 10/8/99 operation Jeff of P-Tec supplied info 10/8/99 Jeff of P-Tec supplied info 10/8/99 <i>Advent calculation based on above assumption</i> <i>Advent calculation based on above assumption</i>
Power Qty 200,000	\$XXea	SXX (2 batteries per unit)	Bob of P-Tec supplied info 10/27/99
Metal ring Qty 100,000	\$XXea	SXX (1 ring per unit)	Mike of P-Tec supplied info 10/8/99
Packaging Qty 100,000	\$XXea	SXX Plastic Case cost SXX Printed Graphic cost SXX Product Guide cost Load housing unit into plastic case Load ring into plastic case Load printed graphic into plastic case Load product guide into plastic case Close plastic case SXX.00 per hour labor rate 1 case loaded every 30 seconds 120 cases loaded per hour SXX per loaded case	Mike of P-Tec supplied info 10/8/99 Mike of P-Tec supplied info 10/8/99 Jeff of P-Tec supplied info 10/28/99 operation operation operation operation operation Jeff of P-Tec supplied info 10/8/99 Jeff/Mike/Bob of P-Tec supplied info 10/8/99 <i>Advent calculation based on above assumption</i> <i>Advent calculation based on above assumption</i>
<u>TOTAL COST PER COMPLETE UNIT \$XXXX</u>			

Rev F. 11-02-99

ID	Task Name	Duration	Start	October					November				December				January				Februa							
				26	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	30	6	13				
1	Phase-1	25 days	Wed 9/29/99																									
2	Project Meeting	0 days	Wed 9/29/99																									
3	Define product specifications	1 day	Tue 10/5/99																									
4	Develop concepts & (BOM)	19 days	Thu 10/7/99																									
5	Client approval of concept (CAM)	0 days	Tue 11/2/99																									
6	Phase-2	16 days	Wed 11/3/99																									
7	Detailed design	7 days	Tue 11/2/99																									
8	Proof of concept/Alpha model fabrication (SLA)	5 days	Thu 11/11/99																									
9	Test/Modify	4 days	Thu 11/18/99																									
10	Client approval of Alpha model	0 days	Tue 11/23/99																									
11	Order Packaging (need SW model)	42 days	Tue 11/23/99																									
12	Order LED's	45 days	Tue 11/23/99																									
13	Order Shipping boxes/crates	42 days	Tue 11/23/99																									
14	Order Batteries	42 days	Tue 11/23/99																									
15	Phase-3	43 days	Wed 11/24/99																									
16	Review design issues	1 day	Wed 11/24/99																									
17	Detail design changes	5 days	Thu 11/25/99																									
18	Order Production Tooling	30 days	Thu 12/2/99																									
19	Assembly/ First Run Production / Line set up	5 days	Thu 1/6/00																									
20	Test Beta Units	5 days	Thu 1/13/00																									
21	Complete final modifications	1 day	Thu 1/20/00																									
22	Introduce product to market	1 day	Fri 1/21/00																									
23	Phase-4	0 days	Sat 1/22/00																									
24	Market introduction / Ship 1st product	0 days	Sat 1/22/00																									
25	Phase-5	0 days	Sat 1/22/00																									
26	Standardization	0 days	Sat 1/22/00																									

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<u>Description</u>	<u>Objective</u>
Housing Material	Xenoy-Injection Molded
Lamp	LED - Nichia part # NSPW 500S (Bright White) or equivalent
Power Supply	6 V DC coin cells #CR2016
Means for attachment	Metal ring (customer assy.)
Housing Assembly	No mechanical fasteners
Size of product	Min. Photon Size (Dim.) Max. Slightly larger than Photon (Dim.)
Replaceable Battery	Non Replaceable
Continuous Lamp On Switch	No
Projected Volume	75,000 sales 1 st year
Target Market	Outdoor enthusiasts
Target Manufacturing Cost	\$XXX
Target Wholesale	\$YYY

QTY Levels _____ BASE 24+ Lev.1 Lev.2 Lev.3 Lev.4
 Princeton Tech _____
 Selling Price _____

Target Retail \$ZZZ (critical cost)
 Cost Ratio Retail to Wholesale to Cost
 3.33:1 2:1 1:1
Button Force Photon force or less

<u>Description</u>	<u>Future possibilities</u>
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Housing Material	Explore other materials
On-Off Button	Soft touch
Lamp	Explore other possibilities/colors
Power Supply	Explore other possibilities
Means for attachment	Latch/Belt loop/Pack Loop
Housing Assembly	Eliminate all fasteners
Size of product	Change to meet market demand
Replaceable Battery	Yes
Continuous Lamp On Switch	Yes
Projected Volume	100,000 + future years
Target Market	Mass Merchant
Target Manufacturing Cost	Decrease cost
Target Wholesale	Increase/Decrease
Target Retail	Increase/Decrease
<i>Anticipated Cycle Life</i>	<i>5-7 years</i>
<i>Anticipated Sales Growth</i>	<i>3 years</i>

Results

- Fastest, most successful product launch in the company's history.
- Largest single product ever in the company's history (volume and dollar).
- Invitation to return and run all product development for this company.