



PROJECT PROPOSAL: “PROJECT BLUE ZUMA”

To: Dr. Edward J Glantz
From: Alex Bok (ayb5041@psu.edu)
CC: Mark Randall
Date: February 28th, 2008

The following documents are detailed reports on our project proposal entitled “Project Blue Zuma.” If you have any questions regarding “Project Blue Zuma” please to not hesitate to contact Alex Bok (ayb5041@psu.edu)

Attachments:

Zuma Project 1: Schedule Table, Gantt Chart, Network Diagram

Zuma Project 2a: Schedule Table, Gantt Chart

Zuma Project 3: Schedule Table, Gantt Chart

Zuma Project 4: Zuma Budget Report, Zuma Monthly Cash Flow Report (2 pages)

Blue Zuma Memorandum**To:** Edward Glantz, Professor**From:** Alex Bok**Date:** February 28, 2008**Subject:** Zuma Part 1 Memo**CC:** Mark Randall, TA

We are writing for your approval for the Zuma project. This project is important because it will result in the creation of one of the greatest scooters of this generation. According to our studies the scooter will hit a wide demographic and will be a huge success at possible X-games events. It is a fun product for children of all ages. The project will only take duration of 250 days. The total cost for the project is only \$ 1,265,556.20. It is also estimated that the project will increase revenue for the company by 10-12%. The creation of this new razer scooter also reflects our company strategy, “to make products for the benefit of children everywhere”.

In this memo we have enclosed a timeline for the project’s completion and the critical path. We determine which activity has the greatest amount of slack, describe the sensitivity of the network, explain where the milestones are, and compare and contrast a Gantt chart versus a network diagram versus a schedule table.”

Estimation of Project Timeline and Completion Date

We estimate that the project will have a start date of January 2nd, 2008 and be completed on December 22, 2008. The duration of the project will be 250 days.

Discussion of Critical path

The critical path consists of the following activities: Market analysis, Product design, Product design selection, and Detailed Product design, Test prototype, Finalized product design, Order production equipment, Install production equipment, and celebrate.

Activity with Greatest Slack Time

The activity with the greatest amount of slack is the detailed marketing plan with 159 days.

Discussion of Network Sensitivity

Sensitivity is defined as the likelihood that the critical-path will remain stable during the completion of the project. It is a function of the amount of slack non-critical activities has as well as the number of different critical paths.

The network is not very sensitive. There is only one critical path and free slack ranges from 20 days to 159 days.

Project milestones

The milestones of the project are product design selection and Finalized product design. The Product design selection is a milestone because it has multiple predecessors and multiple successors. The Finalized product design is a milestone because it has multiple predecessors and

Attachments:

Attachment 1: Schedule Table

Attachment 2: Gantt Chart

Attachment 3: Network Diagram

multiple successors. The project design selection is where we narrow down the options to pursue a single project to work on.

Comparison of Advantages and Disadvantages of Gantt Chart Network Diagram and Schedule Table.

The schedule table is located in Attachment #1.

An advantage of the schedule table is that it clearly shows the amount of time that it is going to take to complete the project. It also includes the late start, late finish and free slack of each activity.

A disadvantage of the schedule table is that it does not include the predecessors or the amount of resources needed to complete each activity.

Attachment #2 contains both a work breakdown structure and a Gantt Chart.

An advantage of the Gantt chart layout is that it clearly shows the activities of a project's work breakdown structure. Also, it shows the duration of each event and the start and end dates. The Gantt chart can also be understood by a wide audience because of its simplicity and use of visuals.

A disadvantage of the Gantt chart is that it does not clearly show the critical path for the project. Also the predecessors are difficult to visualize as well as the project flow and slack.

We also included a Network Diagram. It is located in Attachment #3.

An advantage of the Network Diagram is that it clearly shows the critical path as well as ES, EF, LS, LF of the project in a format that is easy to understand and look at.

A disadvantage of the Network Diagram is that it does not show resource allocation. Also it seems to show the project in a much more simplistic way than it actually is.

Attachments:

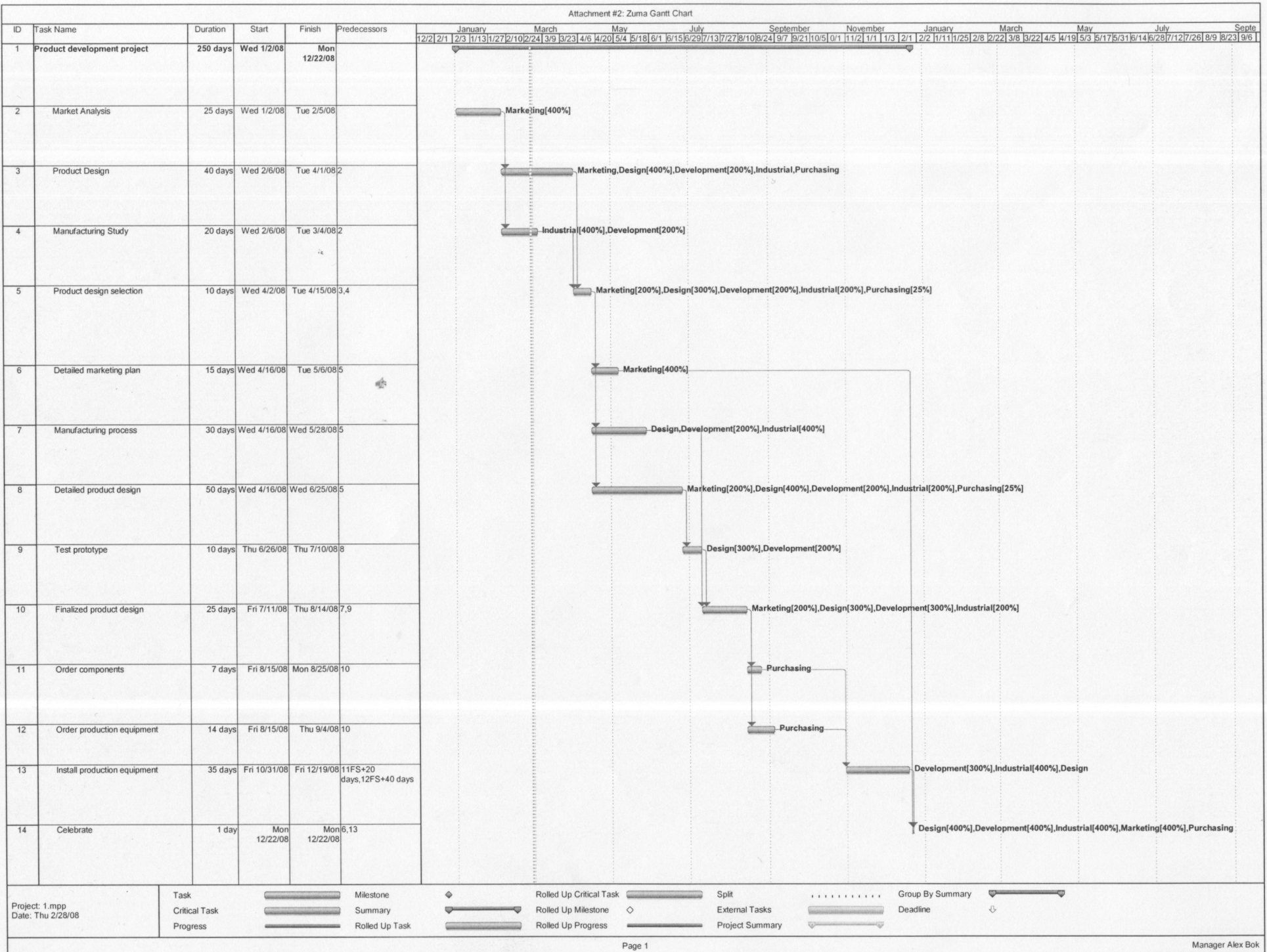
Attachment 1: Schedule Table

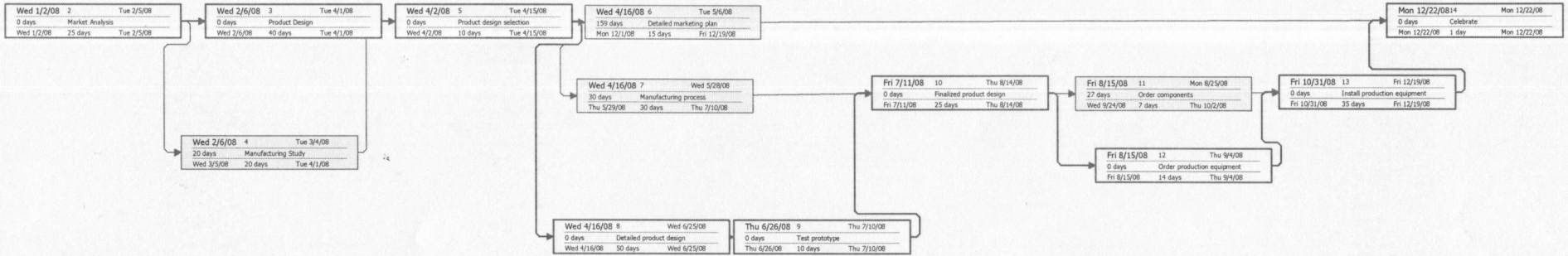
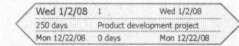
Attachment 2: Gantt Chart

Attachment 3: Network Diagram

Attachment #1: Zuma Project Schedule Table

ID	Task Name	Start	Finish	Late Start	Late Finish	Free Slack
1	Product development project	Wed 1/2/08	Wed 1/2/08	Mon 12/22/08	Mon 12/22/08	250 days
2	Market Analysis	Wed 1/2/08	Tue 2/5/08	Wed 1/2/08	Tue 2/5/08	0 days
3	Product Design	Wed 2/6/08	Tue 4/1/08	Wed 2/6/08	Tue 4/1/08	0 days
4	Manufacturing Study	Wed 2/6/08	Tue 3/4/08	Wed 3/5/08	Tue 4/1/08	20 days
5	Product design selection	Wed 4/2/08	Tue 4/15/08	Wed 4/2/08	Tue 4/15/08	0 days
6	Detailed marketing plan	Wed 4/16/08	Tue 5/6/08	Mon 12/1/08	Fri 12/19/08	159 days
7	Manufacturing process	Wed 4/16/08	Wed 5/28/08	Thu 5/29/08	Thu 7/10/08	30 days
8	Detailed product design	Wed 4/16/08	Wed 6/25/08	Wed 4/16/08	Wed 6/25/08	0 days
9	Test prototype	Thu 6/26/08	Thu 7/10/08	Thu 6/26/08	Thu 7/10/08	0 days
10	Finalized product design	Fri 7/11/08	Thu 8/14/08	Fri 7/11/08	Thu 8/14/08	0 days
11	Order components	Fri 8/15/08	Mon 8/25/08	Wed 9/24/08	Thu 10/2/08	27 days
12	Order production equipment	Fri 8/15/08	Thu 9/4/08	Fri 8/15/08	Thu 9/4/08	0 days
13	Install production equipment	Fri 10/31/08	Fri 12/19/08	Fri 10/31/08	Fri 12/19/08	0 days
14	Celebrate	Mon 12/22/08	Mon 12/22/08	Mon 12/22/08	Mon 12/22/08	0 days





Blue Zuma Memorandum**To:** Edward Glantz, Professor**From:** Alex Bok**Date:** 2/28/08**Subject:** Zuma Part 2A Memo**CC:** Mark Randall, TA

We are writing for your approval for the Zuma project. This project is important because it will result in the creation of one of the greatest scooters of this generation. According to our studies the scooter will hit a wide demographic and will be a huge success at possible X-games events. It is a fun product for children of all ages. The project will only take duration of 250 days. The total cost for the project is only \$ 1,265,556.20. It is also estimated that the project will increase revenue for the company by 10-12%. The creation of this new razer scooter also reflects our company strategy, "to make products for the benefit of children everywhere".

In this memo we have enclosed resources being added onto the project. We will disclose information about how resources are used and whether they are allocated or over allocated. A Gantt chart and a Schedule table will be presented with leveling within slack.

Which if any of the resources are over allocated?

Four of the resources are over allocated, marketing, design, industrial, and purchasing.

Which of the activities involve over allocated resources?

By looking at the resource usage and checking back with the Gantt chart it looks like the Some of the activities that are over allocated are activities such as Detailed marketing plan, detailed product design, and install production equipment.

Try to solve the problem by leveling within slack, what happens?

After you level within slack you find that two of the over allocated resources have been fixed. However, design and industrial were still over allocated. This shows how much resources matter for the project completion. Resources are something you need to manage very carefully

What is the impact of leveling within slack on sensitivity of network?

Leveling within slack can affect the network greatly. After you level within slack some over allocated resources can now be allocated. Like resource-constrained schedules, leveling caused complexity to be increased because the resource constrains are added to the technical constrains and the critical path can be affect because of leveling within slack. Leveling with slack would increase the chances that a different critical path with occur because slack can play a huge role on schedules.

Attachments

Attachment 1: Schedule Table

Attachment 2: Gantt Chart

Blue Zuma Memorandum**To:** Edward Glantz, Professor**From:** Alex Bok**Date:** 2/28/08**Subject:** Zuma Part 2B Memo**CC:** Mark Randall, TA

We are writing for your approval for the Zuma project. This project is important because it will result in the creation of one of the greatest scooters of this generation. According to our studies the scooter will hit a wide demographic and will be a huge success at possible X-games events. It is a fun product for children of all ages. The project will only take duration of 250 days. The total cost for the project is only \$ 1,265,556.20. It is also estimated that the project will increase revenue for the company by 10-12%. The creation of this new razer scooter also reflects our company strategy, “to make products for the benefit of children everywhere”.

In this memo the project is evaluated based on how the resources are constrained and the length of the project. The duration will be compared to what it had been previously before resources were allocated.

How long does project take given resources assigned?

After the resources are assigned, the project now takes 290 days.

How does new duration compare with estimated completion date?

Before resources were assigned, it was 250 days and now it is 290 days, so the duration date is now pushed back 40 days since after we assigned resources, we found out that we didn't have enough.

Attachments

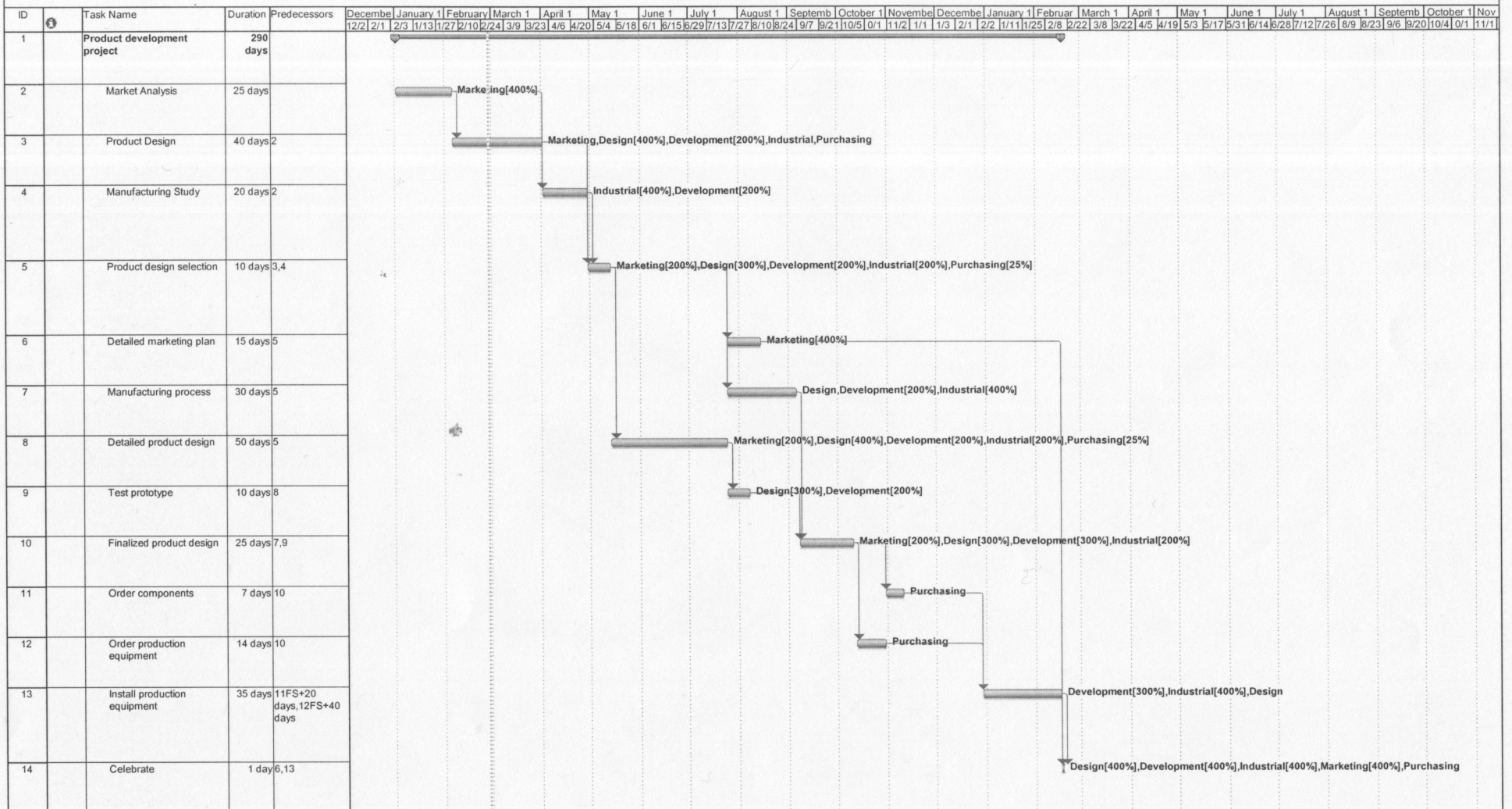
Attachment 1: Schedule Table

Attachment 2: Gantt Chart

Attachment #1 Zuma Schedule Table

ID	Task Name	Start	Finish	Late Start	Late Finish	Free Slack
1	Product development project	Wed 1/2/08	Tue 2/17/09	Wed 1/2/08	Tue 2/17/09	0 days
2	Market Analysis	Wed 1/2/08	Tue 2/5/08	Wed 1/2/08	Tue 2/5/08	0 days
3	Product Design	Wed 2/6/08	Tue 4/1/08	Wed 3/5/08	Tue 4/29/08	20 days
4	Manufacturing Study	Wed 4/2/08	Tue 4/29/08	Wed 4/2/08	Tue 4/29/08	0 days
5	Product design selection	Wed 4/30/08	Tue 5/13/08	Wed 4/30/08	Tue 5/13/08	0 days
6	Detailed marketing plan	Fri 7/25/08	Thu 8/14/08	Tue 1/27/09	Mon 2/16/09	129 days
7	Manufacturing process	Fri 7/25/08	Fri 9/5/08	Fri 7/25/08	Fri 9/5/08	0 days
8	Detailed product design	Wed 5/14/08	Thu 7/24/08	Thu 6/12/08	Thu 8/21/08	0 days
9	Test prototype	Fri 7/25/08	Thu 8/7/08	Fri 8/22/08	Fri 9/5/08	20 days
10	Finalized product design	Mon 9/8/08	Fri 10/10/08	Mon 9/8/08	Fri 10/10/08	0 days
11	Order components	Fri 10/31/08	Mon 11/10/08	Wed 11/19/08	Fri 11/28/08	13 days
12	Order production equipment	Mon 10/13/08	Thu 10/30/08	Mon 10/13/08	Thu 10/30/08	0 days
13	Install production equipment	Tue 12/30/08	Mon 2/16/09	Tue 12/30/08	Mon 2/16/09	0 days
14	Celebrate	Tue 2/17/09	Tue 2/17/09	Tue 2/17/09	Tue 2/17/09	0 days

Attachment #2 Zuma Schedule Table

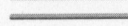


Project: 3.mpp
Date: Thu 2/28/08

Task

Critical Task

Progress



Milestone

Summary

Rolled Up Task



Rolled Up Critical Task

Rolled Up Milestone

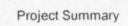
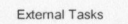
Rolled Up Progress



Split

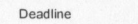
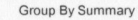
External Tasks

Project Summary



Group By Summary

Deadline



Blue Zuma Memorandum**To:** Edward Glantz, Professor**From:** Alex Bok**Date:** 2/28/08**Subject:** Zuma Part 3 Memo**CC:** Mark Randall, TA

We are writing for your approval for the Zuma project. This project is important because it will result in the creation of one of the greatest scooters of this generation. According to our studies the scooter will hit a wide demographic and will be a huge success at possible X-games events. It is a fun product for children of all ages. The project will only take duration of 250 days. The total cost for the project is only \$ 1,265,556.20. It is also estimated that the project will increase revenue for the company by 10-12%. The creation of this new razer scooter also reflects our company strategy, "to make products for the benefit of children everywhere".

In this memo we have adjusted project Zuma based on its Crashing Options. There have been additional resources given to us by Dewey Martin personnel at ARC. The additional resources have been implemented and the project had made some adjustments.

Which additional personnel assignment would you choose for the project?

I would choose another marketing specialist for the job. Because if you look on the resource sheet it shows that marketing specialist is still over allocated but the other resources seem to be allocated for now. So that is why I would add another marketing specialist for the job. Also as discussed in class having more workers never hurt but you get to the point where having too many workers becomes unproductive. Also in this project, cost is something that we accept so if needed to finish the project earlier we could always hire more workers.

How have these changes affected the sensitivity of the network?

After the changes were put in place, the duration of the project changed from 290 days to 274. 84 days, this is a big improvement in reducing project time. Sensitivity of a network is by which a project's critical path has changed. From what I have seen the critical path has not changed but obviously adding the resources on helped in this project's sensitivity for the better not the worse.

Attachments:

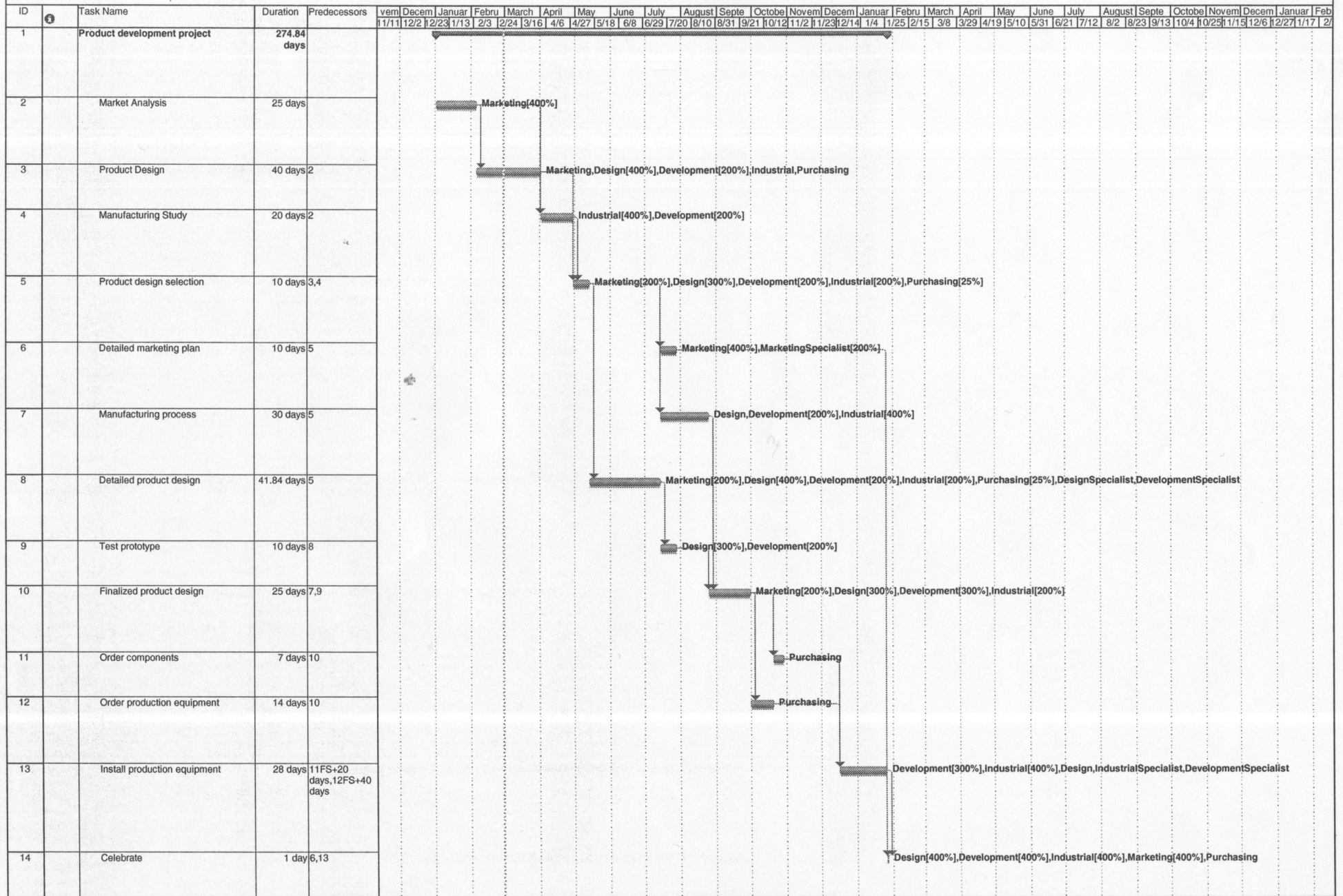
Attachment 1: Schedule Table

Attachment 2: Gantt Chart










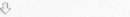


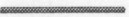

Attachment #1 Zuma Schedule Table

ID	Task Name	Start	Finish	Late Start	Late Finish	Free Slack
1	Product development project	Wed 1/2/08	Tue 1/27/09	Wed 1/2/08	Tue 1/27/09	0 days
2	Market Analysis	Wed 1/2/08	Tue 2/5/08	Wed 1/2/08	Tue 2/5/08	0 days
3	Product Design	Wed 2/6/08	Tue 4/1/08	Wed 3/5/08	Tue 4/29/08	20 days
4	Manufacturing Study	Wed 4/2/08	Tue 4/29/08	Wed 4/2/08	Tue 4/29/08	0 days
5	Product design selection	Wed 4/30/08	Tue 5/13/08	Wed 4/30/08	Tue 5/13/08	0 days
6	Detailed marketing plan	Mon 7/14/08	Mon 7/28/08	Mon 1/12/09	Mon 1/26/09	127 days
7	Manufacturing process	Mon 7/14/08	Mon 8/25/08	Mon 7/14/08	Mon 8/25/08	0 days
8	Detailed product design	Wed 5/14/08	Mon 7/14/08	Thu 6/12/08	Mon 8/11/08	0 days
9	Test prototype	Mon 7/14/08	Mon 7/28/08	Mon 8/11/08	Mon 8/25/08	20 days
10	Finalized product design	Mon 8/25/08	Tue 9/30/08	Mon 8/25/08	Tue 9/30/08	0 days
11	Order components	Mon 10/20/08	Wed 10/29/08	Thu 11/6/08	Mon 11/17/08	13 days
12	Order production equipment	Tue 9/30/08	Mon 10/20/08	Tue 9/30/08	Mon 10/20/08	0 days
13	Install production equipment	Tue 12/16/08	Mon 1/26/09	Tue 12/16/08	Mon 1/26/09	0 days
14	Celebrate	Mon 1/26/09	Tue 1/27/09	Mon 1/26/09	Tue 1/27/09	0 days

Attachment #2: Zuma Gantt Chart



Project: 2
Date: Fri 2/29/08

Task		Milestone		Rolled Up Critical Task		Split		Group By Summary	
Critical Task		Summary		Rolled Up Milestone		External Tasks		Deadline	
Progress		Rolled Up Task		Rolled Up Progress		Project Summary			

Blue Zuma Memorandum**To:** Edward Glantz, Professor**From:** Alex Bok**Date:** February 28, 2008**Subject:** Zuma Part 4 Memo**CC:** Mark Randall, TA

We are writing for your approval for the Zuma project. This project is important because it will result in the creation of one of the greatest scooters of this generation. It is a fun product for children of all ages. The project will only take duration of 250 days. The total cost for the project is only \$ 1,265,556.20. It is also estimated that the project will increase revenue for the company by 10-12%. The creation of this new razer scooter also reflects our company strategy, “to make products for the benefit of children everywhere”.

In this memo we have enclosed a table containing the estimated cost for each activity and a cash flow schedule for each month of the project.

Estimation of Project Cost

We estimate that the project will cost \$1,265,556.20.

Activity with the greatest cost.

The activity with the greatest cost is the Detailed product Design. It will cost \$328,836.73

Resource with the greatest cost.

The resource with the greatest cost is Design. It will cost \$377,529.60.

Highest and lowest cost per month

The highest cost will be July, costing \$190,068.73. The lowest costing month excluding November which we will not incur any costs will be will be October costing \$8,334.67.

Costs not contained in this budget

Some costs that may not appear in this budget are possible failure costs problem costs or delay costs. Also not included are costs for additional resources if we need them in the future.

Attachments:

Attachment 1: Cost Table

Attachment 2: Cash Flow Schedule

ID	Task Name	Fixed Cost	Fixed Cost Accrual	Total Cost	Baseline	Variance
8	Detailed product design	\$0.00	Prorated	\$328,836.73	\$0.00	\$328,836.73
3	Product design	\$0.00	Prorated	\$224,000.00	\$0.00	\$224,000.00
13	Install production equipment	\$0.00	Prorated	\$174,720.00	\$0.00	\$174,720.00
10	Finalized product design	\$0.00	Prorated	\$154,000.00	\$0.00	\$154,000.00
7	Manufacturing process	\$0.00	Prorated	\$127,200.00	\$0.00	\$127,200.00
4	Manufacturing study	\$0.00	Prorated	\$70,400.00	\$0.00	\$70,400.00
5	Product design selection	\$0.00	Prorated	\$56,200.00	\$0.00	\$56,200.00
2	Market Analysis	\$0.00	Prorated	\$48,000.00	\$0.00	\$48,000.00
9	Test prototype	\$0.00	Prorated	\$34,400.00	\$0.00	\$34,400.00
6	Detailed marketing plan	\$0.00	Prorated	\$30,400.00	\$0.00	\$30,400.00
14	Celebrate	\$0.00	Prorated	\$10,000.00	\$0.00	\$10,000.00
12	Order production equipment	\$0.00	Prorated	\$5,600.00	\$0.00	\$5,600.00
11	Order components	\$0.00	Prorated	\$2,800.00	\$0.00	\$2,800.00
		\$0.00		\$1,266,556.73	\$0.00	\$1,266,556.73

Cash Flow as of Thu 2/28/08
zuma_part4.mpp

	January	February	March	April	May	June	July	August	September	October	November
Product development project											
Market Analysis	\$42,240.00	\$5,760.00									
Marketing	\$42,240.00	\$5,760.00									
Product design		\$100,800.00	\$117,600.00	\$5,600.00							
Marketing		\$8,640.00	\$10,080.00	\$480.00							
Design		\$51,840.00	\$60,480.00	\$2,880.00							
Development		\$23,040.00	\$26,880.00	\$1,280.00							
Industrial		\$10,080.00	\$11,760.00	\$560.00							
Purchasing		\$7,200.00	\$8,400.00	\$400.00							
Manufacturing study				\$70,400.00							
Development				\$25,600.00							
Industrial				\$44,800.00							
Product design selection				\$5,620.00	\$50,580.00						
Marketing				\$960.00	\$8,640.00						
Design				\$2,160.00	\$19,440.00						
Development				\$1,280.00	\$11,520.00						
Industrial				\$1,120.00	\$10,080.00						
Purchasing				\$100.00	\$900.00						
Detailed marketing plan							\$15,200.00	\$15,200.00			
Marketing							\$9,600.00	\$9,600.00			
MarketingSpecialist							\$5,600.00	\$5,600.00			
Manufacturing process							\$21,200.00	\$89,040.00	\$16,960.00		
Design							\$3,600.00	\$15,120.00	\$2,880.00		
Development							\$6,400.00	\$26,880.00	\$5,120.00		
Industrial							\$11,200.00	\$47,040.00	\$8,960.00		
Detailed product design					\$94,320.00	\$165,060.00	\$69,456.20				
Marketing					\$11,520.00	\$20,160.00	\$8,483.20				
Design					\$34,560.00	\$60,480.00	\$25,449.60				
Development					\$15,360.00	\$26,880.00	\$11,310.93				
Industrial					\$13,440.00	\$23,520.00	\$9,897.07				
Purchasing					\$1,200.00	\$2,100.00	\$883.67				
DevelopmentSpecialist					\$8,640.00	\$15,120.00	\$6,362.40				
DesignSpecialist					\$9,600.00	\$16,800.00	\$7,069.33				
Test prototype							\$34,400.00				
Design							\$21,600.00				
Development							\$12,800.00				
Finalized product design									\$104,720.00	\$49,280.00	
Marketing									\$16,320.00	\$7,680.00	
Design									\$36,720.00	\$17,280.00	
Development									\$32,640.00	\$15,360.00	
Industrial									\$19,040.00	\$8,960.00	
Order components										\$400.00	
Purchasing										\$400.00	
Order production equipment										\$5,600.00	
Purchasing										\$5,600.00	
Install production equipment											
Design											
Development											
Industrial											
DevelopmentSpecialist											
IndustrialSpecialist											
Celebrate											
Marketing											
Design											
Development											
Industrial											
Purchasing											
Total	\$42,240.00	\$106,560.00	\$117,600.00	\$81,620.00	\$144,900.00	\$165,060.00	\$140,256.20	\$104,240.00	\$121,680.00	\$55,280.00	

	November	December	January	February	March	Total
Product development project						
Market Analysis						\$48,000.00
Marketing						\$48,000.00
Product design						\$224,000.00
Marketing						\$19,200.00
Design						\$115,200.00
Development						\$51,200.00
Industrial						\$22,400.00
Purchasing						\$16,000.00
Manufacturing study						\$70,400.00
Development						\$25,600.00
Industrial						\$44,800.00
Product design selection						\$56,200.00
Marketing						\$9,600.00
Design						\$21,600.00
Development						\$12,800.00
Industrial						\$11,200.00
Purchasing						\$1,000.00
Detailed marketing plan						\$30,400.00
Marketing						\$19,200.00
MarketingSpecialist						\$11,200.00
Manufacturing process						\$127,200.00
Design						\$21,600.00
Development						\$38,400.00
Industrial						\$67,200.00
Detailed product design						\$328,836.20
Marketing						\$40,163.20
Design						\$120,489.60
Development						\$53,550.93
Industrial						\$46,857.07
Purchasing						\$4,183.67
DevelopmentSpecialist						\$30,122.40
DesignSpecialist						\$33,469.33
Test prototype						\$34,400.00
Design						\$21,600.00
Development						\$12,800.00
Finalized product design						\$154,000.00
Marketing						\$24,000.00
Design						\$54,000.00
Development						\$48,000.00
Industrial						\$28,000.00
Order components	\$2,400.00					\$2,800.00
Purchasing	\$2,400.00					\$2,800.00
Order production equipment						\$5,600.00
Purchasing						\$5,600.00
Install production equipment		\$12,480.00	\$131,040.00	\$31,200.00		\$174,720.00
Design		\$1,440.00	\$15,120.00	\$3,600.00		\$20,160.00
Development		\$3,840.00	\$40,320.00	\$9,600.00		\$53,760.00
Industrial		\$4,480.00	\$47,040.00	\$11,200.00		\$62,720.00
DevelopmentSpecialist		\$1,440.00	\$15,120.00	\$3,600.00		\$20,160.00
IndustrialSpecialist		\$1,280.00	\$13,440.00	\$3,200.00		\$17,920.00
Celebrate				\$10,000.00		\$10,000.00
Marketing				\$1,920.00		\$1,920.00
Design				\$2,880.00		\$2,880.00
Development				\$2,560.00		\$2,560.00
Industrial				\$2,240.00		\$2,240.00
Purchasing				\$400.00		\$400.00
Total	\$2,400.00	\$12,480.00	\$131,040.00	\$41,200.00		\$1,266,556.20

Handwritten mark resembling a stylized 'A' or 'V'.