

I PRO 305 Project Plan

Fall 2008

Impact of Emerging Internet Trends on the Media Space

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Abstract/Objective -

The objective of IPRO 305 is to understand the usage of deep-rooted as well as emerging applications and trends that will drive internet usage over the next 3 to 5 years. These need to be personified in terms of various classes of users that will co-exist and the potential use by each.

In a little over a decade, the internet has become a part of everyday life. What started with simple applications such as email, has expanded to providing Blogs, Social Networking Sites, streaming video content, low cost (sometimes free) international calls and has evolved into massive e-commerce engine.

{There will remain users who use the internet for simple tasks as email, while others will use it to get all their multi-media content and blogs with multitude of opportunities to monetize the same. }

The overall increase in consumption (MB) as well as the need for ever-increasing speeds (Mbps) may require ISPs to embrace technologies beyond what is currently envisioned as the industry evolves from broadband technologies to wideband technologies.

This change in the environment needs to be evaluated from the view of an ISP/ content provider like a cable company and the new technologies and capabilities it needs to embrace to ensure relevance in the ever-changing world.

Comcast was founded in 1963 as a single system cable operation. Today, it is the largest cable providing company delivering entertainment and communications products and services, with 24.6 million cable customers, 14.4 million high-speed Internet customers and 5.6 million voice customers (Comcast).

Because of the internet having an exponential growth since the early days of consumer adoption, we have moved well beyond web browsing, small ftp file transferring and email as a main consumption of bandwidth that the ISP supplies the customer. A few starting points such as peer to peer networking and internet based video are rapidly increasing in popularity and are accounting for more and more bandwidth consumption on a daily basis. Bittorrent (Peer to Peer) traffic is consistently increasing in the amount of data it can give to its users. There is an equivalent of about 500 million DVDs worth of data that traverses the peer to peer network every month. That figure is equivalent to two exabytes or an equivalent of two billion gigabytes of data over the network in one month. Internet video is also another large part of the bandwidth that is consumed over the network. Already, internet video accounts for 1/4 of all internet traffic whether it is YouTube or AOL Video.

Here is a listing of a brief competitor overview and their offerings:

Comcast Offerings

Base Plans

5-6 mbps

12mbps

Upper plans (if available)

8 mbps

16mbps

22 mbps

Limited to 250gb transfer monthly

Lower Tier - Price: 42.95-56.00

Upper Tier (if available) - Price 52.95-65.00

Competitor Overview

AT&T

DSL

768kbps/128kbps	DSL	\$10 (Contract)
768kbps/128kbps	Basic DSL	\$14.95
1.5mbps/398kbps-1 kbps *	Express DSL Fast Speed	\$25.00
3.0 mbps /512 kbps -1 kbps *	Pro DSL	\$30.00
6.0 mbps /768 kbps -1 kbps *	Elite DSL	\$35.00
10mbps/1.5mbps	Max DSL	\$55.00

*AT&T Uverse

Verizon

DSL

Sub-Base

3 Mbps/768 Kbps \$29.99/month

768 Kbps/128 Kbps \$19.99/month

FIOS

Base

10 Mbps/2 Mbps \$42.99 – 47.99

Base-Middle

20 Mbps/5 Mbps \$52.99-57.99

Middle Upper
20 Mbps/20 Mbps \$64.99-69.99
Upper
50 Mbps/20 Mbps \$139.95 -144.95

TimeWarner

Base
7 mbps
\$42.99 – 47.99

RCN

5mbps/800k - Mega Modem Mach 5- \$24.95
10mbps/2mbps - MegaModem Mach 10 \$59.95
20mbps/2mbps - MegaModem Mach 20 \$99.95

COX

7 Mbps/512 Kbps Preferred \$44.99
12mbps/1mbps Premium \$59.99

<http://www.thelist.com/misc/usa/broadband/a-c.html>

Customer profiles in the marketing place

By breaking the US population down into separate demographic groups, and making use of data to ascertain the popularity of different online activities of these groups, together with knowledge of the bandwidth requirements of these activities, a theoretical forecast of future bandwidth requirements per household can be derived.

According to a recent survey by Pew Internet & American Life , usage of online activities that require the greatest bandwidth, namely online gaming and the downloading of videos and music, are dominated by two demographic groups; online teens (users aged between 12 and 17) and Generation Y (users aged between 18 and 28). The percentage of a particular demographic group that is online that uses the internet to play games online, for example, is directly proportional to its age. Online teens and Generation Y play games online at rates of 81% and 54%, respectively, while only 29% of users aged between 41-50, and 25% of those aged between 60 and 69 engage in the same activity.

Over the next 3 – 5 years, as current members of the two youngest demographic

groups age, many of them will join older demographic groups and may have obtained greater purchasing power, and the usage of bandwidth hungry application of online users aged between 18 -28 will increase. Simultaneously, a new generation of online teens will have replaced them, and they will most likely have the same participation rates in online gaming, music downloading etc. as their predecessors. Also the percentage of people aged between 18 and 29 that use the internet will have increased. According to another survey by Pew Internet & American Life the percentage of people aged between 18 and 29 that use the internet increased from 69% to 84%.

However, the use of the internet by the oldest demographic groups should not be ignored. The greatest increase in the proportion of a particular demographic group using the internet between 2000 and 2005 was that of people aged over 65. When connected, they are doing a lot more than sending emails; they are using search engines, gathering health-related information, making travel plans, handling their finances, paying bills and purchasing products. And as mentioned before, one in four is even gaming. Their use of the internet for many online activities is very similar to younger demographic groups.

Finally, to achieve the objective of understanding and modeling the trends that will drive internet usage over the next 3 to 5 years, we will need to research Comcast's current system and technology. This involves, but isn't limited to Comcast's current system and technology, and we'll need to gather details and specs. This includes things like looking at DOCSIS, Fiber, certain internet protocols, etc. A talk with Amit Garg, our sponsor from Comcast, look at Comcast's website and possibly some engineers for design specs of the current technology would be useful. Also we may need to look at limitations of non-proprietary technology used by Comcast versus proprietary technology. We'll need to talk to Amit and give him the solution(s) and get feedback from him. We'll need to negotiate what form and how the data should be presented. We should also like to know who our audience is that we're presenting to (Technical versus non-technical. We might need to revise initial solutions to cater to his and Comcast needs if the initial results are not satisfying enough.

Methodology -

- Problem
 - Internet penetrates rapidly into daily life. Consumers from various social groups adopt internet for different combinations of applications. This makes it complicated for service providers to determine and prepare for technical arrangements for future.
- Solution

- Our team will analyze the current internet market in terms of demographic and geographic categories, and evaluate traditional as well as emerging applications that have considerable effects on internet usage. Based on the secondary and primary researches we do, we will develop a projection model that looks at internet usage in next 3 to 5 years by various parameters.
- To achieve the results we expect in an efficient and collaborative fashion, we have split up the team into three subgroups-Secondary Research sub-team, Primary Research sub-team and Collection/Interpretation sub-team-that will be performing tasks throughout the semester to develop the solution.
- Primary Research sub-team
The Primary Research team will conduct original research and provide live data by focusing on the following tasks:
 1. Figure out what tops we need to survey and who we need to reach. (Research people to survey).
 2. Develop the step-by-step and in-depth questionnaire. (Create Questionnaire).
 3. Conduct surveys by reaching our target audience in a variety of channels and encouraging people to give real thoughts. (Conduct Survey).
 4. Gather results for Collection/Interpretation team to analyze. (Gather results for C/I Team).
 5. Identify future applications based on the data we get. (Identify future applications).
 6. Conduct interviews professors and professionals in the IT industry and learn their vision of the future of Internet. (Conduct interview with IT Pros)
 7. Speak to company executives to learn about the market. (Interview Company Execs.)
- Secondary Research sub-team
The Secondary Research team will carry out profound researches by examining previously published data and provide background support for other strategies the IPRO team takes to address the problem. They will be focusing on the following tasks:
 1. Each team member will determine what they think the top 5 emerging internet apps are and will document them in a word document with information backing up their research. (individual assignment).
 2. Consensus as a group determine top 5 applications of internet traffic, and any application that is potentially going to move into the top 5 in the next 3-5 years. (Determine top 5 internet intensive APPS).
 3. Gather actual technical data matching profiles of survey

groups that are categorized based on demographics and applications. (Gather technical data).

4. Look at growth of major applications as function of time, and for market demographics, examine their behavior as samples for predicting emerging applications. (Examine growth of major apps versus time).
5. Keep track of future technology advancements. (Track future tech advancements).
6. Research emerging and potential substitutes of major applications. (Research possible alt. top 5 applications.)
7. Keep profiles of applications in category and consumers in demographics.
8. Final statement of findings per member into one large Document. (Final statement of findings).

➤ Collection/Interpretation sub-team

The Collection & Interpretation team will analyze both primary and secondary research data, and develop a viable projection model of internet usage in the next 3 to 5 years by focusing on the following tasks:

1. Make profiles of application usage stats that including bandwidth per household, number of users, work methodology, etc. (Profile Application usage).
2. Find out top 10 internet applications and create models (create models based on top apps.)
3. Test model for today usage with Comcast's data (test models on current usage with Comcast.)
4. Use the model to project future internet usage. (Project future usage).

➤ Teamwork

- Because our project is primarily research based, all members will be expected to gain a background understanding of the topics at hand. However, for the sake of efficiency, three sub-groups are directed to address the two fundamental facets of the project: two teams for research and one for the analysis of that research. The research teams are delineated based on the type of research they will conduct: a primary research team, to conduct original research, and a secondary research team to examine previously published data.
- Three sub-groups will collaborate in a rolling fashion. The entire team shares the ideas and findings. Once secondary research team gets any new data, it will pass to collection/interpretation team to analyze as well as contribute to primary researches. The collection/interpretation team will modify the model based on what they get from two research teams and their updated model will be verified by the efforts of the

other teams. The sub-teams are encouraged to help each other to reach the core ideas through the facts.

- As many members as possible on these teams will attend the IPRO workshops to build skills relevant to functioning in a multi-disciplinary workplace. Furthermore, members of each sub-team may at their option change their sub-team affiliation throughout the project to avoid restrictive stratification of the team.
- Each team member will be assigned tasks through his sub-team leader and held accountable for their completion. Data gathered and processed forms of this data will be uploaded to categorical folders on the IGROUPS website. Class time will be used for presenting and discussing the results of individual research or processing so that the whole group remains conscious of the progress and changing needs of the project. Members are expected to work for at least five hours each week outside of class on their work.
- Documentation
 - Process and Results will be documented through team notes and reports including:
 - Meeting minutes from team and sub-groups
 - Presentations from sub-groups at team meetings
 - Electrical communication from Email, Files and Discussion Board on iGroups.
 - IPRO deliverables.
 - Documentations will be submitted to iGroups system by the scheduled deadlines.
- IPRO Deliverables
 - The team leader will coordinate the IPRO deliverables and IPRO day tasks.
 - Each member will be assigned to complete part of each deliverables by specific deadlines based on their skills and consent of the entire team.
 - The team will schedule special time for compiling and documenting.
 - The team will schedule special session for modifying draft with advisors.

Semester Budget

Item	Quantity	Price
Photocopying	500 copies	\$50.00
Paper		\$50.00
Mailing		\$20.00
Transportation		\$30.00
Team Building		\$70.00
Visa Gift Card for the survey	1	\$100.00
Pens		\$30.00
Survey fund		\$150.00
TOTAL		\$500.00

Team Organization -

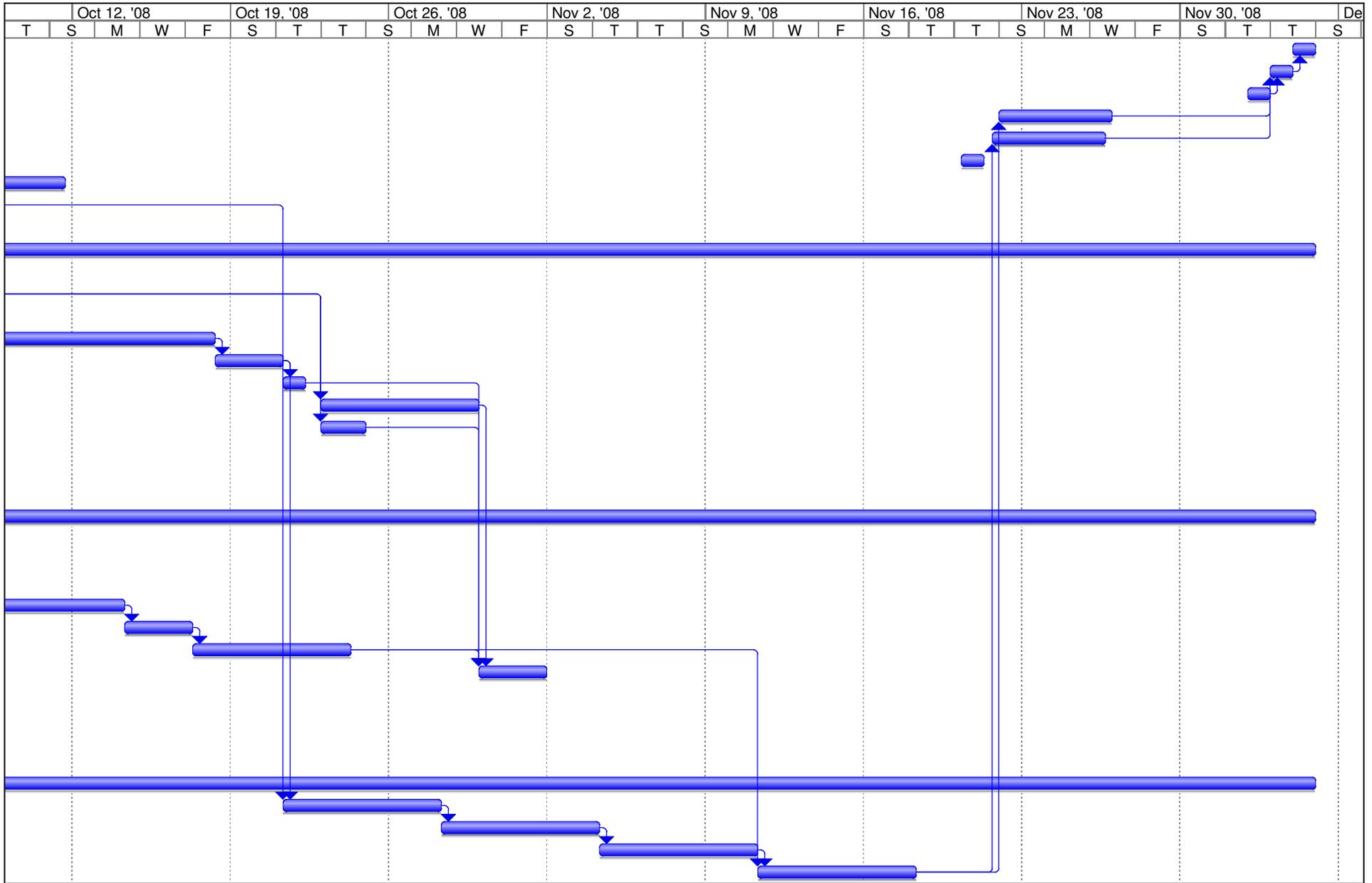
- Designation of roles
 - Minute Taker: Meng Zhang
 - Agenda Maker: Grant Shindo
 - Budget Planner: Stephen Schreiner
 - Master Schedule Maker: John Mikesell
 - Deliverables: Ryan Cunningham
 - Team Leader: Grant Shindo
 - Sub-team Leaders: Ryan Cunningham, Mike Lagioia, Nick Cantoni

Team at glance- Advisors: Matthew Bauer, Jay Fisher

- Nick Cantoni
- Ryan Cunningham
- William Foret
- Evan Kruger
- Michael Lagioia
- Angus Lazenby
- Jonathan Mikesell
- Janusz Nosek
- Stephen Schreiner
- Grant Shindo
- Yevgen Solodkyy
- Meng Zhang

ID	Task Name	Duration	Start	Finish	Predecessors	8		Sep 21, '08				Sep 28, '08			Oct 5, '08	
						W	F	S	T	T	S	M	W	F	S	T
1	IPRO Project Day	1 day	Thu 12/4/08	Fri 12/5/08	2											
2	Final Report	1 day	Wed 12/3/08	Thu 12/4/08	3,4,5											
3	Presentation Uploads	1 day	Tue 12/2/08	Wed 12/3/08												
4	Exhibit Poster	5 days	Fri 11/21/08	Wed 11/26/08	38											
5	Abstract and Brochures	5 days	Fri 11/21/08	Wed 11/26/08	38											
6	IPRO Day seminar	1 day	Thu 11/20/08	Fri 11/21/08												
7	Midterm Reviews	5 days	Mon 10/6/08	Sat 10/11/08												
8	Project Plan	1 day	Fri 9/19/08	Sat 9/20/08												
9																
10	Primary Research Team	76 days	Sat 9/20/08	Fri 12/5/08	8											
11	Research people to survey	7 days	Sat 9/20/08	Sat 9/27/08	8											
12	Create Interview Questions	3 days	Sat 9/27/08	Tue 9/30/08	11											
13	Create Questionnaire	7 days	Sat 9/27/08	Sat 10/4/08	11											
14	Conduct Survey	14 days	Sat 10/4/08	Sat 10/18/08	13											
15	Gather Results	3 days	Sat 10/18/08	Tue 10/21/08	14											
16	Identify future applications	1 day	Tue 10/21/08	Wed 10/22/08	15											
17	Conduct interviews with IT Pro's	7 days	Thu 10/23/08	Thu 10/30/08	12											
18	Interview Company Executives	2 days	Thu 10/23/08	Sat 10/25/08	12											
19																
20																
21																
22	Secondary Research Team	76 days	Sat 9/20/08	Fri 12/5/08	8											
23	Determine top 5 internet intensive apps Individ	7 days	Sat 9/20/08	Sat 9/27/08	8											
24	Consensus of top 5 apps	3 days	Sat 9/27/08	Tue 9/30/08	23											
25	Gather technical data	7 days	Tue 9/30/08	Tue 10/7/08	24											
26	Examine growth of major apps vs time	7 days	Tue 10/7/08	Tue 10/14/08	25											
27	Track future tech advancements	3 days	Tue 10/14/08	Fri 10/17/08	26											
28	Research possible alternate top 5 apps	7 days	Fri 10/17/08	Fri 10/24/08	27											
29	Final statement of findings	3 days	Thu 10/30/08	Sun 11/2/08	28,16,17,18											
30																
31																
32																
33																
34	Collection and Interpretation Team	76 days	Sat 9/20/08	Fri 12/5/08	8											
35	Profile application usage	7 days	Tue 10/21/08	Tue 10/28/08	8,15											
36	Create Models based on top apps	7 days	Tue 10/28/08	Tue 11/4/08	35											
37	Test models on current usage w/ Comcast	7 days	Tue 11/4/08	Tue 11/11/08	36											
38	Project future usage	7 days	Tue 11/11/08	Tue 11/18/08	28,37											

Project: Gannt Chart IPRO 305 Date: Fri 9/19/08	Task		Milestone		External Tasks	
	Split		Summary		External Milestone	
	Progress		Project Summary		Deadline	



Project: Gantt Chart IPRO 305 Date: Fri 9/19/08	Task		Milestone		External Tasks	
	Split		Summary		External Milestone	
	Progress		Project Summary		Deadline	