Telstra's Proposed Acquisition of OzEmail:

Harm to Competition in the Australian Market for Internet Service Provision

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Jeffrey K. MacKie-Mason

Professor of Information, Economics and Public Policy
University of Michigan
Ann Arbor, MI 48109-1092

+1 (734) 647.4856

jmm@umich.edu

http://www-personal.umich.edu/~jmm/

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1 Introduction

My name is Jeffrey K. MacKie-Mason. I am Professor of Economics, Information, and Public Policy at the University of Michigan. I have extensive experience in antitrust analysis, particularly in "high tech" industries. I have attached a copy of my curriculum vitae, including a list of my consulting clients.[1]

I have been asked by Cable & Wireless Optus to analyze the likely competitive impact of Telstra acquiring the residential, dial-up modem customers and business assets of OzEmail. Based on my analysis of the market, I conclude that

- One important market to consider when analyzing the competitive impact of this merger is the market for residential dial-up modem Internet access in Australia.
- The acquisition of OzEmail by Telstra would result in a dramatic increase in concentration in this market, which would otherwise remain quite competitive.
- Telstra will likely obtain substantial, durable market power in the dial-up modem Internet access market as a result of the acquisition.
- There are significant dangers from allowing a firm to acquire a position of dominance such as Telstra seeks with this acquisition.

Based on my analysis, Australian consumers and competition in the Australian dial-up Internet market will be best served by the ACCC preventing Telstra's acquisition of OzEmail.

2 Market definition

One relevant market for analyzing this merger is the market for residential dial-up modem access. At present, and for the next several years at least, Australian consumers of dial-up Internet access will not have any viable close substitutes for dial-up modem access. Broadband access is not likely to provide substantial competitive pressure on dial-up access providers for several reasons.

First, the price for residential broadband is currently dramatically higher than dial-up access. For example, Telstra offers cable-modem access beginning at $50/month while it offers dial-up plans for as little as $9/month. While the dial-up plan is limited to 3 hours of connect time per month, the cable plan also includes charges for usage in excess of 100 megabytes of downloads per month.[2]

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[1] See attached Exhibit 1.

[2] Prices and terms according to Telstra Big Pond web site – www.bigpond.com/advance/connect/c_rate.htm and www.bigpond.com/Home/Products/Access/premium.asp, accessed 10 February, 2000 7:19pm.

Budde notes that 100 megabytes, the monthly "allowance" on Telstra's $50/month plan, is roughly equivalent to 6 hours of surfing the Internet (or downloading 10 seconds of VCR-quality video). This equals roughly 17 megabyte/hour connected. Using Telstra's charge of $0.35/megabyte-downloaded beyond the allowance, Telstra's broadband plan can be roughly translated into the same kind of terms used for its narrow-band access: $50/month with 6 hours/month allowance and $5.80/additional hour.

Second, consumers have generally indicated relatively low incremental willingness to pay for broadband access.[3] This is not surprising, given that residential users do not in general use bandwidth intensive applications on the Internet.[4]

These factors combine to suggest that broadband access will not substantially displace narrowband access in the near term. Analyst's estimates for broadband penetration and overall Internet access market growth also suggest that it will be some time before broadband produces significant reductions in dial-up access subscriptions:[5]

Australian Internet	Subscribers (000's)		Market share		CAGR	New subscribers, 2000-2003 (000's)
Year	**1999**	**2003**	**1999**	**2003**		
Dial-up	2,590	4,050	99.6%	87.1%	12%	1,460
Broadband	10	600	0.4%	12.9%	178%	590
Total	2,600	4,650	100.0%	100.0%	16%	2,050

The important column here is the last one. While sizable shifts in market share and huge compound annual growth rates (CAGR) garner headlines, it is important to consider that dial-up access has a huge head start (making differences in growth rates not very good indicators of relative market importance) and the overall market is growing quite fast (making changes in market share a poor indicator of segment growth). The important factor to consider when

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The $9/month dial-up plan charges $4.50 per hour in excess of the 3 hour allowance.

[3] Jupiter Communications reports that 29% of US Internet users were unwilling to pay any premium for broadband access. Jupiter Communications, *Broadband Applications: Emerging Business Models Enable ISP Service Bundles*, June 1999.

Paul Budde reports that a study by the Australian Bureau of Transport and Communications Economics done in 1996 found that "75% of all households are interested in [broadband] subscription services, however, the numbers fall dramatically when price considerations are introduced." He then presents a table indicating that "potential interest" in various broadband categories (Entertainment, Education and Information, Communication services, Transaction services) ranged from 44% for entertainment down to 20% for transaction services. Paul Budde Communications, *Information Highways – Research and Market Forecasts*, 25 January 2000.

[4] Telstra says 70% of Internet use is e-mail and chat. Telstra attributes that in part to the slow speeds of narrow band access. Even if it is the case that external constraints (slow speeds) underlie consumers' revealed preferences, it will undoubtedly take some time to change user habits once those constraints are removed. It is also possible that consumers place very significant value on the interpersonal communication options provided by the web; perhaps so much time is spent with e-mail and chat because consumers are more interested in communicating than in surfing or researching, regardless of speed. If that is the case, demand for broadband access becomes subject to significant network externality effects: I don't desire broadband access until my e-mail, chat, or instant messaging (IM) partners also have broadband access (thereby allowing video enhanced chat or IM). This could further reduce the pace of broadband penetration.

[5] The figures are for total Australian access subscribers, both residential and business. Broad band subscriber growth from Strategis Group, reported in "Information Highways – Research and Market Forecasts", Paul Budde Communications, 25 January 2000. Total Internet subscribers from Budde, "Internet Market – Demographics, statistics," 8 January 2000.

looking for competitive pressure is the growth in the market: almost 3 times as many subscribers will acquire dial-up access over the next three years as will acquire broadband.

The price disparity between narrow- and broadband access combined with the evidence that broadband access will remain a relatively limited penetration product for several years suggests that broadband access will not offer competitive constraints on a hypothetical monopolist of narrow band access.

3 Concentration in the dial-up market

In evaluating the proposed acquisition of OzEmail by Telstra, it is important to understand how the resultant change in market structure compares to the likely evolution of the market "but for" the proposed acquisition. I understand that Telstra has attempted to downplay the size of the resulting entity by claiming that the subscribers to its free *easymail* service should not be counted as relevant toward Telstra's total market share.

I first address this claim and conclude that Telstra's *easymail* subscribers emphatically are within the relevant market and are relevant to the consideration of this acquisition. I then proceed to put the effects of the acquisition in context of the "natural" change in industry structure that has occurred over the recent past. I conclude that the acquisition would be a revolutionary change in the structure of the residential dial-up access market. The resulting market concentration is unlikely to occur "but for" the proposed acquisition.

3.1 Counting Telstra's *easymail* customers

I understand that Telstra asserts that subscribers to its free e-mail product, *easymail*, should not be counted when calculating Telstra's share of the Internet access market. This assertion is wrong for at least two reasons: Telstra derives advertising revenue from *easymail* subscribers' use of the product and Telstra gains an advantage in marketing its Internet and other services to *easymail* users.[6]

Telstra does not give away free e-mail out of altruism. Telstra gets advertising revenue as a result of those users. As is typical for free e-mail services, Telstra displays banner ads on the user's screen while *easymail* is being used, for which Telstra is compensated by advertisers.[7] As will be described below, the concentration of advertising revenue at Internet sites with large user bases drives one of the concerns about this merger: by giving Telstra a huge user-base advantage over the next competitor, it will potentially give Telstra an insurmountable advantage in attracting advertising revenue.

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[6] The Commission might also want to investigate whether Telstra included "free Internet access" subscribers when it calculated the total number of Internet subscribers on which Telstra based its market share. I suspect Telstra (rightly) included them, further harming the credibility of their claim that free e-mail subscribers should not be counted.

[7] "We will disclose some of your member profile information at an aggregate level for marketing purposes.... We will send banner advertisements to your computer that will automatically display on the *easymail* software that you use to access *easymail*." *easymail* registration process. See Exhibit 2, *easymail* sign-up screen-shots.

Telstra also requires some demographic data about the user as a condition of use and, unless the customer specifically requests otherwise, will send the customer marketing information about Telstra products. Not surprisingly, one of Telstra's first questions to *easymail* subscribers is "Does your household subscribe to an Internet Service Provider (ISP)?", with a "no" answer leading to an inquiry as to whether you might be interested in acquiring Internet access and promoting the benefits of access.[8] Telstra indicates during the sign-up process that it may use your demographic data for "internal planning or product development purposes." The information Telstra receives from its *easymail* customers will help Telstra maintain its dominance of the Internet access market. First, because Telstra knows more about these individuals than do other ISPs, Telstra is better positioned to engage in marketing campaigns focused at *easymail* users.[9] Additionally, because the cost of providing *easymail* is at least partially recovered from advertising revenue, Telstra is getting low-cost market research. Both of these effects will aid Telstra in maintaining its market position.[10]

For these reasons I have counted Telstra's *easymail* subscribers as Telstra subscribers when calculating market shares.

3.2 The change in concentration

One of the larger concerns about this merger is that it transforms a relatively unconcentrated industry with no dominant firm into a highly concentrated industry dominated by a single giant.

Furthermore, it results in a degree of concentration that almost certainly will not occur absent this merger.

3.2.1 Change in Concentration: ΔCR4 and Single-firm share

To judge to impact of this acquisition on the industry concentration ratio and Telstra's market share, we need to put it in context of the recent history of the market:

[8] See Exhibit 2, *easymail* sign-up screen-shots.

[9] This is particularly advantageous because, by signing up for *easymail*, these customers reveal themselves as more likely than the general populace to be interested in Internet access.

[10] I am not suggesting there is anything improper in Telstra engaging in these actions. On the contrary, to the extent that Telstra is better able to provide products that satisfy consumer desires as a result of the information it derives from its *easymail* customers than it could absent the information, consumers will gain. However, the relevant point remains: the *easymail* customers do help Telstra maintain its leading market position and therefore should be counted when calculating Telstra's market share.

Table 1, Change in Concentration: CR4 and Telstra's share

	01-Feb-98	01-Dec-98	01-Mar-99	01-Jun-99	01-Sep-99	Post-Merger
CR4	50.7%	52.3%	53.9%	53.6%	54.9%	59.0%
Telstra	20.5%	21.4%	23.1%	23.0%	23.7%	43.3%

Source: ABN Amro[11]

As the table shows, the dial-up access market has become more concentrated, although even post-acquisition it would not qualify as a highly concentrated market by CR4 standards.[12] Telstra has been increasing its market share over time. In contrast to the CR4, however, Telstra's post-acquisition share does meet the ACCC's criteria for close consideration of the deal.

I would suggest two analyses to try to put the impact of this acquisition on Telstra's share into context. I first present a rough estimate of how long it would take Telstra to achieve the post-acquisition market share by "organic" growth. Then I look at what alternative acquisitions would be required to give Telstra a similar market share.

Using ABN Amro data, Telstra grew from 200,000 residential dial-up subscribers in February 1998 to 458,665 in September 1999. I understand that this growth was "organic": it came from attracting new customers rather than by acquiring existing ISPs and their customers. These figures indicate Telstra has been experiencing a compound annual growth rate (CAGR) of 69%.[13] The residential dial-up market as a whole grew from 976,848 subscribers in February 1998 to 1,938,516 in September 1999, giving a CAGR of 54%. Using these values, and Telstra's September 1999 market share, it is relatively simple to calculate when "organic" growth would give Telstra the market share it would achieve by acquiring OzEmail. This calculation suggests that it would take over 6.6 years for Telstra to "organically" grow to the post-acquisition market share.[14] If I use an alternative assumption – that Telstra and the market will each continue to add

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[11] I use the ABN Amro data for two reasons, neither of which relate to Telstra or OzEmail. The ABN data was the most inclusive I have available to me, listing the greatest number of ISPs. More importantly, it offered a time series of observations made using a single point of view. If I use data from multiple sources to construct a time series, it is difficult to separate the variations caused by different observers' opinions about the market from those caused by actual changes in the market.

[12] The CR4 is the sum of the market shares of the top four firms in the market.

[13] CAGR is calculated as $\left(S_{t2}/S_{t1}\right)^{\frac{1}{Y}}-1$, where S_t is the number of subscribers at time *t* and *Y* is the time, in years, between *t2* and *t1*.

[14] This result does not require that the CAGRs for Telstra and the market remain constant at the respective values given in the text. (Such an assumption would imply that more than 34 million Australians would have Internet access subscriptions when Telstra achieved its 43.3% market share in 6.6 years.)

Rather, the result requires assuming that the ratio between (1 + Telstra CAGR) and (1+ market CAGR) remains constant. It obvious from the rightmost equality in the first line of calculations below that this is equivalent to assuming a constant CAGR for Telstra's market share. This is an heroic assumption – essentially no firm has

the same number of new subscribers per month that they respectively averaged over February 1998 to September 1999 – the result suggests that Telstra would never achieve a 43.3% market share by organic growth.[15]

For another view on the impact of this acquisition, assume Telstra and OzEmail remain separate entities. Then calculate how many firms Telstra would need to acquire to achieve a 43.3% market share. Naturally this depends on which firms Telstra acquires. If Telstra acquires the firms ranked #3-#6 (CWO, TPG, One.Net and eisa), it would have a 42.8% share; if it then added AOL Australia (completing a sweep of the Tier 1 ISPs apart from Telstra and OzEmail) it would have a 45.4% share. If Telstra instead acquired the largest Tier 2 firms, it would have only a 40% market share after acquiring the sixty largest.[16]

These calculations suggest that, absent Telstra's proposed acquisition of OzEmail, it is unlikely any firm will achieve the dominant position the acquisition would hand to Telstra.

3.2.2 Change in Concentration Ratio ΔHHI

The single-firm market share analysis demonstrates that the merger would profoundly alter the competitive landscape in the market. However, due to the nature of this acquisition – the #1 firm acquiring the #2 firm – the CR4 calculations would seem to suggest there is little cause for concern. The disparity in these results, and my experience with US merger analysis, led me to perform some calculations using the Herfindahl-Hirschman Index (HHI).

This index measures concentration by summing the squares of the market share of every firm in the market, then multiplying by 10,000. The result is an index number between 0 and 10,000

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exhibited such a pattern. Obviously, if the growth rate of Telstra's market share declines over time, the time to achieve a given higher market share will become greater.

The calculation is as follows:

Define T_0 to be Telstra's September 1999 subscriber base, T_Y is Telstra's subscriber base Y years in the future, and T_C is Telstra's CAGR. Define matching variables for the total market: M_0, M_Y, and M_C.

$$\frac{T_Y}{M_Y} = \frac{T_0 * (1+T_C)^Y}{M_0 * (1+M_C)^Y} = \frac{T_0}{M_0} * \left(\frac{1+T_C}{1+M_C}\right)^Y$$

$$\Rightarrow \qquad \frac{T_Y / M_Y}{T_0 / M_0} = \left(\frac{1+T_C}{1+M_C}\right)^Y$$

$$\Rightarrow \qquad \ln\left(\frac{T_Y / M_Y}{T_0 / M_0}\right) = Y \ln\left(\frac{1+T_C}{1+M_C}\right).$$

[15] Between February 1998 and September 1999, Telstra has averaged 13,449 net new subscribers per month; the market added 50,000 net new subscribers per month. Assuming these rates remain constant would imply Telstra's share asymptotes at 26.9% (= 13,449/50,000).

[16] My data from ABN Amro includes only the top 68 ISPs. Assuming the next *n* firms, #69-#*N*, are the same size as #68, Telstra would have to acquire another 55 ISPs to get the additional 3.5% need to equal its post-OzEmail market share.

(the former if all firms are atomic, the latter in the case of a perfect monopoly). Because the shares are squared, the index puts additional weight on larger firms.

Again it is helpful to look at the recent history of the market:

Table 2, Change in Concentration Over Time

	01-Feb-98	01-Dec-98	01-Mar-99	01-Jun-99	01-Sep-99	Post-Merger
HHI	920	973	1047	1023	1058	1988

Source: ABN Amro[17]

It is apparent that the industry has been becoming more concentrated over the last two years. However, this change in concentration pales in comparison to the impact of a Telstra-OzEmail merger: the acquisition will almost double the HHI.[18] To judge the implications of that sort of change in the concentration index, I present two comparisons similar to the comparisons I made relating to Telstra's market share.

If we assume the change in concentration over time exhibits compounded growth, then it would take over 7 years for the industry to "naturally" achieve the level of concentration this merger will instantaneously achieve.

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[17] The figures given are "point estimates" for the market for residential dial-up access.

The ABN Amro data indicates that several Tier 2 ISPs did not provide data on how their customer totals were split between residential and business. I calculated the HHI under three different assumptions: 1) "low-end" estimate, assuming that all ISP not specifying a split serviced only business consumers. Because this increases the number of residential consumers assigned to the atomic "other ISP" category with assumed market share of 0%, it results in low HHI estimates. 2) "high-end" estimate, assuming that all ISPs not specifying a split serviced only residential consumers, thus maximizing the number of consumers attributed to firms with non-atomic shares. 3) "point" estimate, assuming that all Tier 2 ISPs not specifying a split had a residential/business split identical to the weighted average of known-split Tier 2 ISPs. This resulted in slightly less than 2/3 of their customers being ascribed as residential consumers.

The three methods yield very minor differences in HHI:

	01-Feb-98	01-Dec-98	01-Mar-99	01-Jun-99	01-Sep-99
Low-end HHI	909	964	1039	1017	1053
High-end HHI	934	984	1057	1031	1065
Point Estimate HHI	920	973	1047	1023	1058

[18] The United States Department of Justice/Federal Trade Commission 1992 Horizontal Merger Guidelines: "§1.51 b) Post-merger HHI between 1000 and 1800 ...Mergers producing an increase in the HHI of more than 100 points in [such markets] potentially raise significant competitive concerns... §1.51 c) Post-merger HHI above 1800. The Agency regards markets in this region to be highly concentrated. ... Mergers producing an increase in the HHI of more than 50 points in [such markets] potentially raise significant competitive concerns..."

To understand how significant this change in concentration is, assume Telstra and OzEmail remain independent firms. Then ask, what would happen to the HHI if all the remaining "Tier 1" ISPs (that is, CWO, TPG Internet, One.Net, Eisa Net, and AOL) merged? If all the Tier 1 firms other than Telstra and Oz merged, the HHI would increase to "only" 1428.

Continuing in this vein, and still assuming Telstra and OzEmail do not merge, ask how many of the next largest firms (#3-#*n*) would need to merge to yield an HHI similar to the industry HHI post-Telstra/OzEmail merging? The answer is astounding: the next 21 firms would need to merge to yield the same level of concentration. That is, not only would all the Tier 1 firms apart from Telstra and OzEmail need to be in the merger, but the 16 largest Tier 2 firms, everyone from ihug to AT&T, would need to join the merger as well.

3.3 Conclusion:

In short, there is essentially no prospect that the industry will "naturally" move to the degree of concentration that this merger will yield. Absent this merger, industry will likely stay quite competitive into the future.

4 Telstra's size relative to its competitors will have significant anticompetitive results

There are several attributes of this market that result in increasing returns to scale in the supply of dial-up Internet access. The advantages from increasing returns and the other attributes of the market tend to reinforce the advantages of scale, making a dominant firm more difficult to displace.

Additional to these sources of market power, Telstra has the benefit of being a vertically integrated supplier. Telstra dominates wholesale Internet access and is one of the major players in wireless telephony. These characteristics of Telstra compound the potential for and concerns about anticompetitive harms from its dominance in the near- to mid-term

Telstra is also a very significant provider of cable TV and is a crucial link in xDSL deployment. These characteristics of Telstra create substantial long-term anticompetitive concerns about allowing Telstra to become dominant in the dial-up access market

Each of these issues is detailed in turn below.

4.1 Positive feedback and increasing returns to scale

In some respects, this appears to be a difficult merger to analyze. It is in a new industry that is not yet mature. It seems to exhibit some attributes unlike more traditional and familiar industries. However, I believe that a proper analysis of the characteristics of supply and demand in the dial-up access market reveal that consideration of this merger can be informed helpfully by examination of more familiar industries, in particular the newspaper industry.

This examination tells us that

- there is no reason to believe that monopoly is the inevitable result of positive feedback in demand and increasing returns to scale in production

- but monopoly is a danger in such industries
- and that danger can become acute when a firm develops a sufficient market share advantage.

4.1.1 Product differentiation and the portal model

Like many industries that sell semi-commodity products, ISPs have sought ways to differentiate their Internet access offering from their competitors' offerings. One of the emerging models, particularly among "national" ISPs, is the portal model. There are several reasons ISPs have chosen to pursue this model. Possibly foremost among them is that the world's most successful ISP, AOL, owes much of its success to the fact that it is a consummate portal.[19] Secondly, as advertising has grown in importance ISPs have recognized that their control over the first page viewed by Internet users is a valuable asset. It is to their advantage to encourage their users to spend more time on the ISP site, increasing the potential for advertising revenue.[20] Third, as a result of the commodity nature of Internet access, customer turnover rates are phenomenal: as high as 40% in 1999 for Australian ISPs.[21] If an ISP can develop a compelling portal, particularly one which entices the customer to engage in site-specific investments (things like getting the user to enter her stock portfolio, developing a non-transferable home-page, and not forwarding e-mail), they can reduce their churn.

However, as I discuss next, the growth of advertising and the portal model induce a new demand structure in the ISP market.

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[19] It is important to recognize that AOL is phenomenally successful as a portal apart from its success as an ISP. By a reasonable estimate based on Media Metrix data, AOL would have been the #1 Internet property (in terms of unique visitors, Media Metrix's standard measure) in December 1999 even if it did not have the benefits of also being the largest ISP.

Media Metrix reports that AOL had 53.8 million unique visitors in December 1999. If you assume every one of its 20 million subscribers visited during the period, over 34 million non-AOL-subscribers must have visited AOL properties that month. Media Metrix measured a universe of 69 million unique users in December. Maintaining the assumption that every one of AOL's 20 million users was counted in that universe, there were 49 million non-AOL-subscribers online that month. This means 69.4% (34 million/49 million) of non-AOL-subscribers visited AOL's web properties. So, assume that AOL leaves the ISP business and that its 20 million subscribers are no more likely to visit AOL than current non-AOL-subscribers (this is conservative, as these users, by paying AOL's premium access rates, have revealed themselves to particularly appreciate AOL's content). Thus, 69.4% of these 20 million users would visit AOL's properties even if none of them were AOL access subscribers, meaning an additional 13.8 million visitors. Thus, a reasonable estimate of AOL's portal-induced popularity would be 47.8 million (34 million + 13.8 million) unique visitors during December 1999. Yahoo!, the #2 property, had only 42.3 million unique visitors that month.

Data from Media Metrix, "Top 50 At-Home and At-Work Digital Media and Web Audience Ratings in the US for December 1999," Press Release, 20 January 2000, at www.mediametrix.com/PressRoom/Press_Releases/01_20_00.html.

[20] It is also relevant that in the US several major "independent" portals have recently concluded they need to develop close relationships with ISPs. AltaVista and Excite have teamed up with 1stup.com, and Yahoo has teamed up with BlueLight.

[21] The Forrester Report, April 1999 at 2

4.1.2 Growth of advertising and the portal model: positive feedback

The Internet has often been touted as a great leveler in the sense that anyone who wants to can "publish" their ideas as easily as anyone else: no longer are we bound by the traditional editorial role served by newspaper editors or TV producers. This is true in an abstract sense – I can put something on my web site as easily as NineMSN or Yahoo can on theirs. But it ignores the real nature of the Internet universe: The Internet is huge. Inktomi and NEC recently announced that the Internet now encompasses over 1,000,000,000 web pages.[22] Yes, I can put whatever I want on my web page, but it is highly unlikely that more than a minute segment of the Internet public will ever see it.

This is because the size of the Internet contrasts sharply with the typical user's range of "travel": the typical viewer visits six web sites and views approximately 30 pages per surfing session.[23] The vast size and complexity of the web combined with consumers' limited range means there is strong demand for the very sort of editorial and indexing functions performed in earlier media by the editors and producers. This has led to the growth of Internet portals. A recent study found that almost 90 percent of web surfers visited a portal during November 1999.[24]

Paralleling the growth of the portal model has been the growing impact of advertising online. In the US, online advertising expenditures grew from $500 million in 1996 to $1.5 billion in 1998 and are projected to grow to $8.9 billion in 2002. Australia is also witnessing dramatic growth in online advertising: $2 million in 1996, $13 million in 1998 and projected to be $405 million in 2 years.[25]

These two trends mean that some aspects of online services are beginning to resemble traditional media industries such as newspapers or "yellow pages" directories. Much like newspapers and yellow pages, portal operators are driven by two interdependent concerns: providing desirable content to attract viewers and selling display space to advertisers. The more users a site has, the more advertisers are willing to pay for display space. This generates additional revenue, allowing the operator to acquire or produce more content, attracting more viewers.

If this sort of positive feedback in demand exists, we would expect the industry to have a few very popular sites which attract a great number of viewers while the lesser sites receive far less attention. That is exactly what we see:[26]

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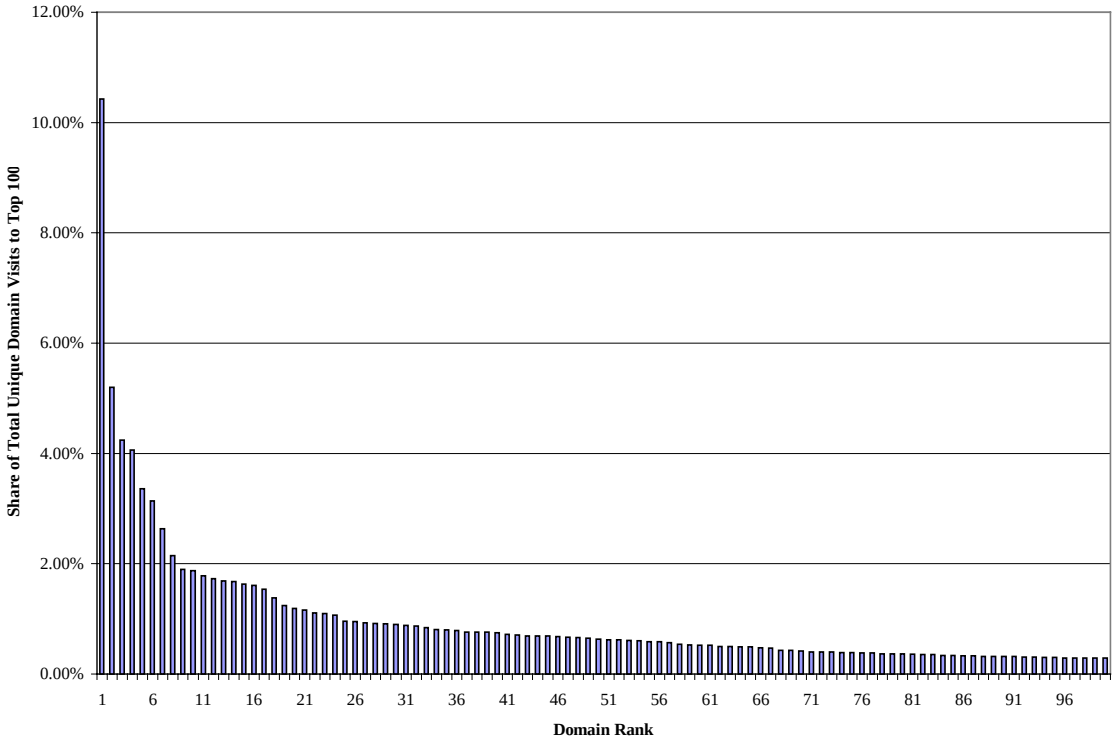
[22] Inktomi, 18 January 2000, "Web surpasses one billion documents," Press release available at www.inktomi.com/news/press/billion.html

[23] The typical "surfer" visits only 6 unique sites per session and views roughly 200 (not necessarily unique) pages per week. Nielsen//NetRating Report, 27 January 2000

[24] Forbes magazine reports Nielsen//NetRating statistics that show 87.8% of web surfers visited a portal in November 1999. *Forbes*, "Portals cement online domination," 29 December 1999.

[25] Merrill Lynch, Report on Telstra, 3 September 1999, p. 41.

[26] Chart based on data from SineWave at www.top100.com.au/aust/index-all.html accessed 21 January 2000. I note that several days after I downloaded this table, for the week ending 16 January 2000, the site stopped displaying the percentage shares of total page hits and now displays only rankings..



Australian Internet use is not alone in exhibiting this demand structure. Data from various market watchers using various metrics reveal a common picture: compared to the #1 ranked observation, #10 receives about 20% as much traffic, #20 receives 10% as much, #50 receives 5%, #100 receives 3% and #500 receives less than 1%.[27]

Not surprisingly, advertising revenues exhibit similar concentration at the top. Advertisers go where the eyeballs are: they concentrate on the most popular sites. In the US the top 10 media companies received 72% of ad revenue in the third quarter of 1999, the top 25 received 84% and

[27] I say the "#1 ranked observation" because some surveys give results by "properties" (all the sites owned by a given company are aggregated at the company level; e.g. Expedia.com, Hotmail.com, Microsoft.com , Msnbc.com, msn.com, Passport.com, and Zone.com are aggregated under Microsoft), while some give results by "sites" (e.g. results for MSN and Microsoft.com are reported separately).

The relative drawing power of the sites as measured by the studies:

Drawing power relative to #1	#10	#20	#50	#100	#500
Nielsen (US)	16.3%	8.6%	3.8%	2.0%	0.5%
Media Metrix (US)	22.7%	12.9%	7.1%	4.0%	1.2%
"Top 100" (Aus.)	16.4%	9.5%	4.6%	2.7%	0.8%
Average	18.5%	10.3%	5.2%	2.9%	0.8%

Graphs of the underlying data as well as sources and methodology are described in the Appendix.

the top 50 received 87 percent.[28] Australia exhibited even greater top-heaviness: the top 10 publisher sites received 77% of ad revenue[29]

4.1.3 Increasing returns to scale in production

On the cost side of the industry, portals also exhibit quite a few similarities to newspapers and yellow pages. Several components of cost are independent or semi-independent of the size of the user base. Original content generation and web site design costs are both independent of the number of users.[30] The per-user cost of acquiring content is also likely to be declining: locating desirable content (search costs) are independent of the number of users and actual acquisition costs once desired content is located are likely to be declining on a per-user basis.[31] Additionally, some aspects of sales, advertising, and general administrative costs are fixed relative to the size of the customer base (e.g., billing, marketing, legal support), although this is true generally for ISPs rather than resulting from the portal model.

These attributes combine to increase the fixed-cost share of total costs in the portal-ISP model versus the access-only ISP model. The result is to yield substantial increasing returns to scale for portal-ISPs. Thus the cost side of the portal-ISP industry also parallels the newspaper and yellow pages industries. I next address the implications of this overall industry structure.

4.1.4 Resultant concern about significant disparity in market shares

A superficial view of the newspaper industry might suggests that the demand and cost structures I have described inevitably result in monopoly. It is true that the newspaper industry's inter-related demand markets, with their resulting potential for virtuous circles to develop, combined with the production-side economies of scale have led to most newspaper markets being quite concentrated. In the US, only a few cities, most of them very large, have been able to support multiple, independent newspapers. Similarly, very few cities support more than one or two yellow-pages publications.

However, assuming the "newspaper result" transfers directly to the Internet access market is to err on two accounts. First, there are a couple of important, relevant differences between online services and newspapers. Second, the newspaper experience in the US suggests that monopoly is *not inevitable* but, quite relevantly, that competitive markets are *significantly more likely to become monopoly markets* where one newspaper achieves a substantial market share advantage over its competitors.

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[28] Internet Advertising Bureau, "IAB Advertising Revenue Report Executive Summary, 1999 Third-Quarter Results," available at www.iab.net/news/content/3Q99exec.html.

Merrill Lynch (see next fn.) reported a somewhat lower 60% share for the top ten "sites", although it is not clear what they mean by "sites".

[29] Merrill Lynch, Report on Telstra, 3 September 1999, p. 42.

[30] I am referring to the design of the web pages, not the web site's underlying infrastructure.

[31] This is a natural result of the cost structure of content production – high fixed costs, very low per-unit production costs.

Two significant differences between online services and newspapers are the inherently limited geographic markets of newspapers and the newspapers' traditional role as creators of a substantial share of their content. Most newspaper markets are local, delivering news of the city council, local sports teams and local business. Similarly, on the advertising side most advertisements in local newspapers are intended to encourage the consumer to come to the local store and purchase something. This narrow geographic focus limits the total potential demand for both the content and advertising-display services a newspaper offers. Apparently most (US) local newspaper markets are too small to support the fixed costs of multiple newspapers. The result is that most local newspaper markets are monopolies. Clearly the Internet does not suffer from this geographical shortcoming. Given that most Internet users are looking for something other than local news, there is no natural impediment to a portal being a national attraction. Internet ads frequently try to convince the consumer to click-and-buy, with the purchase either delivered online or via delivery service, neither of which require geographical proximity between the reader and the seller. Thus, the portal market is a national market rather than a number of discrete local markets. The national market is sufficiently large that it can support the fixed costs of several portal producers.

Another significant difference is that newspapers typically generate a large share of their content. Again, given the local nature of the content, there is limited demand for it and an inability for that demand to support multiple, fixed-cost content creators. To the extent local newspapers purchase content, e.g., newswire feeds, the newspaper is unlikely to have significant market power over the purchase of such news feeds: it is but one of many discrete local monopolies. Therefore purchased content, even if non-local in scope, will be a fixed cost. The result here is also a pull toward local monopolies. Because most portals are largely content aggregators, the fixed costs of content provision are relatively smaller than for local newspapers. The lower relative fixed costs for content and larger, national market mean tendency to natural monopoly based on content costs are lower for portals than for local newspapers.

A closer look at newspaper markets suggests that the tendency toward monopoly is a result of increasing returns to scale at smaller firm sizes. Thus, where the "local" market is sufficiently large to support several instances of the fixed costs we observe several newspapers operating. New York City supports no less than 4 major dailies and several more if you count some of the alternative newspapers.[32] Similarly, suburban cities frequently support a local paper in addition to having significant penetration by a major newspaper in an adjacent metropolis. Additionally, the US has several national newspapers.[33]

These observations all suggest that positive feedback in demand and increasing returns to scale in production do not inexorably lead to monopoly. Importantly, the situations that support competition despite these characteristics match well with the (pre-merger) ISP portal market: large (national) markets and no significant cost advantages in acquisition of content.

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[32] The *New York Times*, the *New York Daily News* and *Newsday* each have circulation in New York City and environs of 600-650 thousand (the *Times* sell another 400,000 across the country); the *New York Post* has a circulation of 430,000.

[33] e.g. The *Wall Street Journal*, the *New York Times*, *USA Today*, The *Christian Science Monitor*

Another observations from the US newspaper market is also relevant. In essentially every city that moved from a newspaper duopoly to a monopoly, the transition occurred after one of the newspapers grew to be substantially larger than the other.

4.2 Mid-term Vertical Issues

Over the next several years dial-up access will continue to dominate the access market and then, later, coexist with broadband access. During this medium-term, two issues specific to Telstra warrant close attention: Telstra's dominance of the wholesale access market and Telstra's position in the wireless telephony market.

4.2.1 Wholesale access market

Telstra supplies wholesale Internet access to the vast majority of Australian ISPs. Telstra and its wholesale customer ISPs provide dial-up access to approximately 60% of residential dial-up access customers.[34]

While the market shares of Telstra's wholesale customers would not change due to the merger, it does mean that Telstra has indirect pricing power over a much larger share of the market than its own subscriber base suggests. By setting the price of wholesale access, Telstra determines a very significant portion of the operating costs for a large share of its erstwhile competitors.[35] The power this gives Telstra has been previously demonstrated: Paul Budde Communications reports that, following a 1996 Telstra price increase for access to peering points, a number of ISPs left the market.[36]

One significant factor contributing to OzEmail's ability to constrain Telstra is that OzEmail does <u>not</u> get wholesale services from Telstra: it is (currently) fully independent of Telstra. Thus, this particular merger is more harmful to competition in the market than if Telstra were to achieve a similar change in concentration by acquiring firms that currently purchase wholesale access from Telstra.

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[34] Paul Budde Communications, *Internet Wholesale Market*, January 2000 (listing ISPs getting wholesale access from other-than Telstra) and ABN Amro (customer base of those ISPs).

[35] See Cable & Wireless Optus's Submission to the ACCC in this matter, 26 January 2000, Chapter 4, ¶¶3.7-3.27 and table at ¶3.32 for descriptions and estimates of the sizes of some these costs.

Jupiter Communications estimates that in the US, with a more competitive backbone market, backbone costs comprise roughly 13% of an ISP's costs. "Local Access" and "Points of [Presence]" comprise another 17% and 27%, respectively, but Jupiter does not break out what portion of these costs are attributable to the communications infrastructure services we are discussing here versus modem, router, or similar equipment costs. Jupiter Communications, March 1999, "Internet Service Distributors: Leveraging Relationships to Drive Customer Acquisition."

[36] *Australia - Internet Wholesale Market*, Paul Budde Communications, 1999. Budde reports that "at least 100" ISPs left the market, "most of them merging with larger ISPs or becoming their agent." This suggests that it is likely that fewer than 50 ISPs actually exited the market in an economic sense. However, 50 ISPs would likely have been 10% of the market participants in 1996.

4.2.2 Economies of Scope

Essentially all of the mobile telephony providers in Australia now tout their mobile Internet services. One.Tel prominently features its mobile telephony/Internet access bundles on its website.[37] It also tells investors that it actively uses it mobile customer database for cross-selling its other products.[38] Optus cross-markets to its customers and promotes Internet access as a value added service offered by Optus Mobile Digital phones.[39]

Telstra clearly believes there are significant synergies to be had from combining mobile telephony and Internet access. Telstra CEO Ziggy Switkowski has stated the view that Internet access will come to surpass voice as the primary use of wireless devices.[40] Telstra also clearly perceives advantages in cross-marketing services. In fact, Telstra proffers the ability to receive e-mail via appropriate mobile telephones as an important consideration in signing up for Telstra's free e-mail service.[41]

Apparently, and ominously, Telstra has successfully marketed its economies of scope, as an Internet access, mobile telephony, and portal provider, to content providers:

> "A significant feature of telstra.com is it can be accessed using the WAP mobile telephone. ...Customers will be able to use either their PC or WAP functional mobile phone to access telstra.com and check their e-mail, the latest international news *exclusively adapted* from CNN, national news, weather, horoscopes, lotteries and sports scores, or do their banking."[42]

Telstra is able and willing to acquire *exclusive* content agreements when it holds 48% of the mobile market and less than 25% of the Internet dial-up access market.[43] Telstra's ability to extract exclusive distribution rights from content providers would be substantially increased if it had 45% of the Internet dial-up access market.

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[37] See www.onetel.com.au/deals.html.

[38] see www.onetel.com.au/investor/factsheet.html

[39] See www.optus.com.au/mobile/1,1648,1006,00.html and www.optus.com.au/internet/1,1648,5004,00.html.

[40] "the major continuing shift will be to lightweight, wireless devices...Mobile phones will be integral to this picture and will be a huge growth area.... by 2005, virtually all Australians will own some form of wireless and portable device which will be used *sometimes for voice, but mainly for messaging, e-mail, information downloading...and so on.*" (emphasis added) Ziggy Switkowski, CEO Telstra, 3 November 1999

John Rolland of Telstra expressed similar views: "...mobile Internet will play a very significant role in the short, medium and long term." *The Australian*, 7 December 1999.

[41] One of my assistants attempted to sign-up for the service. After several failed attempts, he canceled his request form. Telstra responded by sending him to a page that featured mobile telephone access to e-mail as a reason to get an account. See telstra.com/tcoma/Registration/Cancel.asp.

[42] (emphasis added) Dick Simpson, quoted in "Anywhere, Anyhow, Anytime - Introducing Telstra.com" Telstra press release 7 December 1999.

[43] Mobile market share from Paul Budde Communications, *Mobile Communications*, 2 February 2000, p. 2.

4.3 Long-term vertical issues – Concern for the Future: Broadband dominance

My analysis to this point has concerned relatively near-term issues within the dial-up access market and closely related markets. As part of that analysis, I concluded that, for the purposes of merger analysis, at present broadband access is not in the same market as residential dial-up access. However, it is reasonable to expect that many of the current customers in the residential dial-up access market will eventually shift into the broadband access market. This suggest the possibility that this acquisition will have very substantial intertemporal anticompetitive impact.

One impact of the dynamics of the transition from narrow-band dominance to broadband – particularly the fact that it will be several years before broadband becomes a significant factor – is that the eventual "mainstream" broadband market potentially (absent the present merger) will be far less concentrated than broadband access is currently.

While I expect broadband access provision to be initially quite concentrated – Telstra and CWO over cable, Telstra, CWO, and a few others over xDSL – it should be significantly more competitive by the time it becomes mainstream.

Because of the ACCC's actions requiring Telstra to sell unbundled local service components, it is likely several xDSL facilities-based providers will become a factor in the market.[44] There will also be competition, albeit less effective, as a result of Telstra selling wholesale xDSL services.[45]

To the extent broadband suppliers are relatively equal in size, the market will not necessarily be that far from competitive. If one firm is significantly larger than the rest , I don't expect provision to be nearly as competitive. This will result in much slower take-up as the price remains relatively high.

4.3.1 ISP portal

There are reasons to expect that ISP portals will become the broadband users primary means of interacting with the Internet. It is also the case that a larger portion of broadband content will likely involve the content producer receiving per-use or similar fees. These trends will increase the importance of portals' demand-aggregation function, thereby increasing the advantage of

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[44] That is, providers who purchase only local-loop access from Telstra and provide their own xDSL equipment.

[45] A retail xDSL ISP who purchases wholesale xDSL services from Telstra will have a major portion of his costs determined by one of his competitors. This will inherently render him less effective in constraining that competitor. Telstra might argue that it will be unable to charge "above-market" rates for wholesale access: because Telstra is forced by regulators to sell unbundled access to the local loop, potential xDSL retailers could always opt to supply their own equipment. Therefore Telstra could not charge above market prices for wholesale xDSL access. This assumes perfect markets. In reality, capital constraints and limited availability of technical expertise will prevent many potential suppliers from becoming facilities-based providers of retail xDSL. Therefore, these potential entrants will not have the facilities-based option, allowing Telstra to reduce competitive entry into retail xDSL access provision by manipulating its wholesale, or reseller, prices for xDSL services.

Note that Telstra's incentives to impede competitive entry into the broadband access market depend to some extent on how concentrated that market is. The more concentrated the market, the greater the competitive impact of incremental providers, thus the greater Telstra's incentives to encourage high entry barriers or, equivalently, discourage competitive entry by potential providers of retail xDSL services. Thus, this effect will be more pronounced if Telstra has a dominant position than if Telstra is one of several firms in a more competitive market.

having a large user base. Because Telstra is vertically integrated into the major broadband delivery infrastructure systems, these trends will reinforce, rather than mitigate, its ability to carry a dominant narrow-band access market share into the broadband future. I address these consideration in turn.

There is no reason to expect that portals will diminish in importance in the future. In fact, as the Internet grows ever larger and more complex, it is likely that demand for portals' editorial and directory services to grow. Additionally, some broadband applications, e.g. streaming video, require that the content be physically close to the end user. These considerations suggest that ISP portals will become the main interface to the Internet for most broadband users.[46]

In the narrow-band Internet, free content is the dominant form. In part that is because users generate a very significant share of the content users view: according to Telstra, 70% of narrow-band Internet use is e-mail and chat.[47] Broadband applications are much more likely to be generated or made available on a for-profit basis. Movies, online-delivery of music albums, application services (wherein the end-user does not buy software and put it on his computer, but instead runs remotely-hosted software for a fee), and interactive multi-player games all will likely involve a payment to the content provider. While the development of online payment systems might eventually allow direct end user payments to content providers on a per-use basis, it is likely a system quite similar to current cable TV subscriptions will emerge first.[48] Thus, ISP portals will likely offer consumers a menu of access and content combinations and in effect act as billing agents for content providers.

This means ISPs will become demand aggregators. As such, size matters because of the potential for monopsony power in the Australian-content market.

4.3.2 Content market monopsony power

If Telstra were a "typical" dial-up ISP, neither vertically nor horizontally integrated, concerns about Telstra acquiring a dominant share of the dial-up access market might be mitigated by the potential of future, broadband-based competitors emerging. However, that is decidedly not the case. In fact, Telstra is the largest provider of the infrastructure underlying every significant broadband conduit: it has a monopoly over copper local-loops (xDSL access), it has a 46.3% share of pay TV (cable modem access), and a 48% share of the mobile telephony market (WAP,

[46] The two main broadband ISPs in the US, RoadRunner and @Home, provide services that more closely resemble AOL's "walled garden" than they do the typical, narrow-band ISP portal.

[47] Australian Financial Review, 22 January 2000, "On the road to telstra.com."

[48] The difficulties in developing a direct, end-user to content provider payment system are not just technological. At present consumers desire a cable-TV type menu. In a survey by Jupiter Communications, consumers indicated a strong preference for payment systems that are not directly based on use: 34% of respondents preferred to pay a single fee for a pre-specified bundle of services, 23% preferred to pay a single fee for each service they had access to; only 14% preferred to pay either per-bit or per-minute of use; the remainder, 29%, said they would not pay incremental fees for broadband applications. Jupiter Communications, *Broadband Applications: Emerging Business Models Enable ISP Service Bundles*, June 1999

3G access).[49] Thus, rather than being at risk of losing narrow-band customers to newcomers providing broadband access, Telstra will very likely leverage its relationships with its dial-up customers into a similar market share in the broadband market.

Therefore an additional concern relating to Telstra's acquisition of OzEmail is the likelihood Telstra will carry a large market share advantage into the broadband era. In the newspaper industry, no firm has achieved any significant monopsony power over content providers. As noted, the market for newspaper content provision – the newswires – is a national market. No US newspaper has achieved any significant demand share in the acquisition of newswire content. Even the largest US newspapers, each with daily circulation exceeding 1 million readers, are small relative to the 60 million daily newspaper readers that are supplied with content purchased in the newswire market. Furthermore, the largest newspapers are relatively close in size.[50]

That is decidedly not the case with this merger. Telstra would emerge with almost 45% of end-users.

Control over 45% of Australian demand for broadband content would give Telstra monopsony power in the markets for Australian content.[51] This would have two detrimental effects. First, Telstra would be in a position to extract pricing concessions from content providers. This would give Telstra a cost advantage over its smaller broadband rivals (and that cost advantage would be in addition to any cost advantages stemming from increasing returns to scale in broadband access provision). That market-power-based cost advantage would make it more difficult for Telstra's rivals to unseat it from a dominant position.

The second harm flowing from a content monopsony would be Telstra's ability to influence what content is available to all Australians, not just its own customers. As noted above, much broadband content will be produced (or has been, in the case of, e.g., movies) and distributed by for-profit ventures. The profits that can be earned on content are directly related to the number of potential consumers of the content.[52] Therefore producers have incentives to get the widest possible distribution of their content, maximizing the number of potential consumers. If Telstra controlled distribution to 45% of the Australian market, producers will naturally, and within limits, adjust their content to improve the chances Telstra will choose to distribute it. Telstra will therefore exert undue influence over the local content available in Australia.

These monopsony issues are particularly enhanced by the dramatic disparity in market shares that would result from Telstra's acquisition of OzEmail. If, given current market shares, Telstra declines to distribute a given broadband product, the producer can offset the loss of Telstra by getting OzEmail to distribute the product. After the acquisition the calculations change dramatically. If Telstra declines to distribute a product, the producer would need to convince

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[49] I have ignored satellite because it is aimed largely at rural areas and is unlikely to become a significant delivery vehicle for the vast majority of Australia's population.

[50] USA Today has roughly 3% of US daily newspaper readership, the *Wall Street Journal* has 2.1% and the *New York Times* has 1.9%. Based on data from the Audit Bureau of Circulation and the Newspaper Association of America.

[51] Obviously there is no concern that Telstra would achieve monopsony power over international content.

[52] That is, given a certain level of quality, the content will likely earn more revenue the larger the potential audience.

essentially every other broadband ISP in Australia to carry the product. That is in itself a strong argument against allowing the acquisition.

5 Potential harms from dominant market shares and proprietary standards

The Internet has achieved rapid commercial success because it is based on open standards. However, it is important to recognize that the standards were largely developed prior to the commercialization of the Internet. There is no reason to assume that commercial interests will support or advance open standards when their economic interests are better served by proprietary protocols.

In recent years there have been several examples of firms with market power resisting standards while the trailing firms push hard for such standards.[53] This is only natural: a firm with some market power can maintain or extend its power by producing a proprietary version of a service; smaller firms seek to enforce standards to prevent such actions by the leaders. However, it is generally the case that consumers are better served when there are open, common standards, allowing the consumer to choose based on the merits of the individual offerings without having to worry about compatibility issues.

Four recent examples demonstrate how firms with some market power can use that power to their advantage: AOL's actions relating to interconnecting its Instant Messaging product, AOL's recently released Version 5.0 of its access software and the way it can interfere with accessing other ISPs' services, and Microsoft's actions relating to Java and HTML implementation.

5.1 IM

Instant Messaging (IM) software allows users to type private messages to each other in real time – my message shows up on your screen as I type it rather than being delayed as with e-mail. It is, like e-mail (and telephones and fax machines, for example) a service characterized by network externalities: in general, the value of the service to me increases as more people become available on the service. Thus, interoperability of various IM software is in consumers' interest because it maximizes the effective size of the network.

However, there is not at present widespread interoperability of the various IM client software. Numerous firms have IM offerings: AOL (AOL Instant Messenger or AIM), ICQ (owned by AOL, ICQ), MSN (MS Messenger), Tribal Voice (PowWow; also produces co-branded software with AT&T [IM Here] and with AltaVista), Yahoo! (Messenger), Lotus (SameTime) and NovaWiz (Odigo) are some of the clients available.[54]

At present, AOL allows anyone to download and use AIM for free, although the user must set up an account at AOL.com (or be an AOL subscriber). Some 40 million or so Internet users have

[53] I do not mean to suggest this is a recent phenomenon. These business strategies were observed among leaders and followers in the early development of essentially every network industry – for example in the choice of gauge used by railroads.

[54] PC Magazine, "Chat Goes to Work," 18 January 2000, p82 and Wired, "Upstart Says Hello to AOL's ICQ," 24 January 2000, at www.wired.com/news/print/0,1294,33882,00.html.

done this.[55] AOL has also entered into an agreement with Lotus to allow users of SameTime to interconnect with AIM users.[56] Similarly, ISPs Earthlink, Juno, and Mindspring all offer co-branded versions of AIM that allows their subscribers to interconnect with other AIM users.[57]

The "problem" is that AOL has also refused to allow some other IM networks to interconnect with AIM. Last summer and fall (1999) AOL and Microsoft had a public battle after Microsoft released a version of MS Messenger that could interoperate with AIM (the MS Messenger user did need to have an AOL account). AOL blocked access by MS Messenger users, Microsoft developed a fix to get around the block, AOL blocked MS Messenger again, and so on. Microsoft finally gave up and released a new version of MS Messenger with no claims to interoperate with AIM. Microsoft also began a very public campaign for standards, projecting itself as being the protector of the public interest in open standards.[58]

In December 1999, a similar series of confrontations occurred with Tribal Voice's PowWow software, specifically in the guise co-branded with AT&T Worldnet. AOL again blocked access, preventing AT&T's IM Here users from accessing AIM users.

AOL is clearly a firm with some power in its markets. And that power has enabled it to use proprietary standards while consumers would receive greater benefit if open standards were used.

5.2 AOL Version 5.0

In the last month, two class action lawsuits, one on behalf of AOL's users and one on behalf of several of its competitors, have been filed against AOL alleging that Version 5.0 of its access software interferes with access to competing ISP services.[59] The University of Michigan recommended that its users not install AOL 5.0 because of these problems.[60]

Apparently, during the installation procedure for Version 5.0, the user is asked if she wants AOL's browser to be the default browser on the computer. If the consumer accepts AOL as the default, the computer will use AOL's browser and Internet access service for every online procedure (surfing, dialing-up for access, downloading or uploading files or e-mail) unless

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[55] PC Week, "Who cares if AOL won't play nice with Microsoft?," August 9, 1999 v16 i32 p3

[56] PC Magazine, "Chat Goes to Work," 18 January 2000, p82

[57] Crain's New York Business, "Local Firms Join Instant Message Duel: Companies Align With Microsoft, AOL In Scramble For Web Traffic." August 23, 1999 p3

[58] Producers of essentially all competing IM software lauded Microsoft's decision to make its code public in the interest of promoting interconnectivity. Crain's New York Business, "Local Firms Join Instant Message Duel: Companies Align With Microsoft, AOL In Scramble For Web Traffic." August 23, 1999 p3

[59] See "Lawsuit claims AOL 5.0 blocks rival services," *The Associated Press*, February 2, 2000, 10:25 a.m. PT at http://home.cnet.com/category/0-1005-200-1540024.html

and "AOL Rivals File Suit Over Its New Software," *Washington Post*, 8 February 2000, p. E3.

[60] "Limited testing by [ITD] staff members has shown that AOL 5.0 can also disrupt normal usage of U-M dial-up access, U-M LAN access, and use of other Internet Service Provider (ISP) services. **ITD therefore recommends that users of ITD computing services not install AOL 5.0 unless AOL resolves these issues.**" (emphasis in original) From "Current news from the U-M Information Technology Division," at www.itd.umich.edu/news

specifically instructed otherwise. Apparently some users have been unable to access non-AOL ISPs after installing AOL Version 5.0.

Again, whether or not there was anticompetitive intent on AOL's part is irrelevant. Rather, it demonstrates what can happen when a firm becomes so dominant in the access industry. What would be a minor *faux pas* by a local ISP, and most certainly would not be used by them as a way to harm competitors, can induce anticompetitive concerns when a firm dominates a market.

5.3 MS Java, HTML

Microsoft's actions toward both the Java programming language and HTML demonstrate how a firm can attempt to alter agreed standards or introduce proprietary distortions to standards as a means of protecting market share. Microsoft is currently fighting a protracted legal battle with Sun Microsystems, the inventor of Java, over Microsoft's failure to strictly adhere to Sun's Java standards. Netscape has alleged that Microsoft's HTML implementations, both in its Internet Explorer browser and in its software for generating HTML code, do not follow the published standard.[61]

The intent of the Java programming language was to allow programmers to write software that would run on any operating system without needing to be recompiled or ported for the specific operating system. Similarly, HTML standards are promulgated to allow browser-independent creation and display of web pages.

The thrust in both situations is that Microsoft's products for generating either Java and HTML code intentionally deviate from published standards to ensure that the generated code works only with Windows, in the case of Java, or with Microsoft's Internet Explorer, in the case of HTML. Because of Microsoft's dominant market shares in the operating system and browser software markets and its large shares in the markets for software to generate Java and HTML code, Microsoft's deviations from the published standards become *de facto* standards. To the extent these deviations mean that Microsoft Java or HTML code work only with Microsoft operating systems or browsers, Microsoft can disadvantage its competitors in those markets.

While there have been reports of evidence indicating that Microsoft had anticompetitive intent when it created the deviations from published standards, that is not the concern in this report. The point, again, is that a firm with a dominant market share can introduce proprietary standards or technologies that protect its market share and harm consumers.

6 Conclusion

I have examined the market for Internet access in Australia and concluded there is a distinct market for residential dial-up access. At present the market is not highly concentrated, despite a slight trend toward greater concentration over at least the last 18-24 months. The proposed

[61] See, for example:

- "Why open standards are a myth," CNET News.com, 6 August 1999 at news.cnet.com/category/0-1005-201-345513.html
- "Microsoft's Holy War on Java," CNET News.com, 23 September 1998 at news.cnet.com/category/0-1003-201-333486.html

acquisition of OzEmail by Telstra would dramatically alter the competitive landscape in the market for dial-up Internet access in Australia; it would create at a stroke far greater concentration of market power than would be created were the trends of the recent past to continue for the next several years.

The degree of production-side increasing returns to scale in Internet access provision and recent changes in the Internet access market – the shift to the portal model, the growing importance of access revenues – which induce positive feedback effects in demand enhance concerns about a firm gaining a substantial size advantage over its competitors; the proposed acquisition would make Telstra nearly eight times the size of its nearest competitor.

Compounding the risks from allowing Telstra to gain a dominant market share in the dial-up access market is Telstra's vertical integration. Telstra dominates the wholesale access market, giving Telstra control over a significant cost factor for many of the ISPs with which it competes in the retail access market. Telstra also could leverage a dominant retail Internet access market share and its economies of scope to impact competition in the wireless telephony market. Additionally, Telstra's position as one of the dominant broadband infrastructure firms creates the danger that it would leverage a dominant narrow-band access market position into a dominant broadband access position. Because of the likely nature of broadband access provision, with ISPs performing the role of demand aggregators, Telstra having a dominant share of broadband end-users raises the possibility that Telstra could exert monopsony power in the market for Australian broadband content to the detriment of both its competitors and Australian consumers.

Lastly, there are substantial dangers that a firm with a dominant market position will use that position to affect market standards in ways that disadvantage competitors and consumers.

As a result of the concerns raised by my analysis and in my professional judgment, Australian consumers and competition in the Australian market for residential dial-up Internet access will best be served if the ACCC acts to prevent Telstra from acquiring OzEmail.

Appendix: Analysis of relative site popularity

General data discussion

None of the data sources reported in the text and footnote publicly release data for more than the Top 100 (SineWave's Australian data), the Top 50 (Media Metrix) or the Top 25 (Nielsen//NetRatings). The calculations reported in the text and footnote required that I estimate observations for #101-#500. Before describing the estimation process, I will address differences between the SineWave data and that reported by Nielsen and Media Metrix. One difference is that SineWave reports "shares" whereas Nielsen//NetRatings and Media Metrix report absolute numbers. Another difference is that SineWave's calculations are based on page requests by ISP proxy servers while Nielsen//NetRatings and Media Metrix report unique visitors (each individual is counted only the first time they access a given site during the measurement period). They measure this using tracking software on tens of thousands of users' computers, similar to the way Nielsen has measured television audiences for decades.

SineWave reports a given web site's share of the total pages viewed from all sites in the Top 100. Thus, the vertical axis on the chart shows "share". The other sources cited absolute numbers – the actual number of unique visitors to the web site or set or properties. However, because I am only interested in relative popularity, the difference between "shares" and absolute numbers is irrelevant:

The "share" received by #1 was calculated by SineWave as

(pages requested from #1 site/total pages requested from all Top 100 sites).

The "share" received by #10 is calculated similarly as

(pages requested from #10 site/total pages requested from all Top 100 sites).

Thus, #10's share relative to #1 is

$$\frac{\text{pages requested from \#10}}{\text{pages requested from Top 100}} \Big/ \frac{\text{pages requested from \#1}}{\text{pages requested from Top 100}}$$

$$= \frac{\text{pages requested from \#10}}{\text{pages requested from \#1}}$$

The other potentially relevant difference between SineWave and the US data is that SineWave reported the share of page views based on data from ISP proxy servers whereas the US firms report results from direct measurement of Internet users behavior. SineWave notes various drawbacks with its process (see http//www.top100.com.au/about/methodology) that would make the underlying, absolute data unreliable as an indicator of the "true" number of page requests a given site received. In general the biases discussed are not relevant to my study because I am looking at relative popularity. As long as the data bias is not correlated to a site's popularity, it will not have substantial impact on my findings. SineWave notes one bias that could have such a correlation – their data is biased toward sites with higher graphic density. Because more graphically intensive sites would likely be more attractive, it is possible this bias could be correlated to site popularity. However, the analysis of the SineWave data matches very closely to the analysis of the other data sources I have, suggesting there is no correlation between site popularity and the site's graphic intensity. This seems plausible because the greater attractiveness of a graphically intensive web site will be counterbalanced by generally slower page downloads, making the site less attractive to the typical modem-based surfer.

In addition to the differences in data collection methodology, I am using completely different measures of site popularity from SineWave and the US firms. SineWave analyzes the page requests made by proxy servers at numerous ISPs to determine how many pages were requested from each web site. Thus, if I request the same page 10 different times in the measurement period each request will be counted toward the hosting site's total. Nielsen//NetRating and Media Metrix report unique visits to a web property or site. Under this measure, my hypothetical 10 page requests would count as only 1 visit. Each metric has its drawbacks. For example, under the SineWave method, a web site that can attract me to view 10 different pages within it will have 10 page requests added to its total versus a web site that I leave after viewing only 1 page, which would get only that 1 page added to its total. In either case, the US firms would report only a single unique visitor. Because I am looking only at the

relative popularity of web sites within each dataset, these differences are an asset: it is unlikely these two substantially different measurements would share a similar bias toward overstating or understating the relative concentration of Internet users on more popular or less popular sites.

Estimation methodology

For all of the data sources I had to estimate the popularity measure for the #500 firm; for all but SineWave I also had to estimate #100 and, for Nielsen//NetRatings, #50.

In all cases the best fit to the data was found using a power function of the form

$$\text{POPULARITY} = a * \text{RANK}^{b}.$$

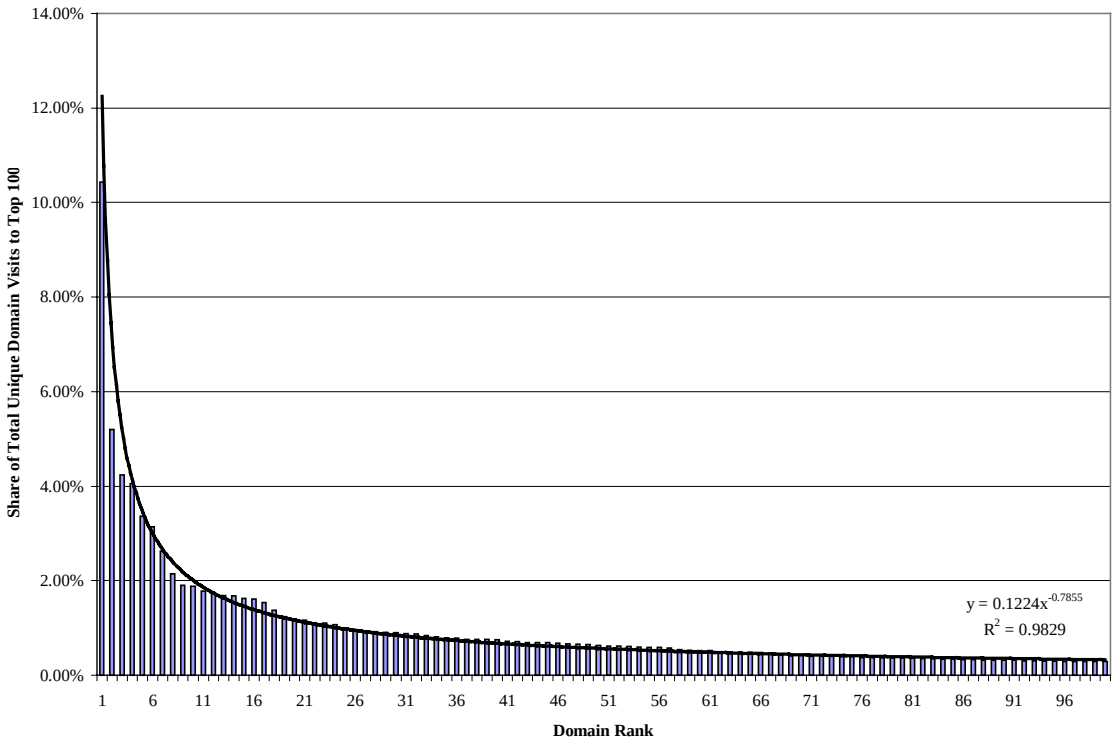
I used linear least squares to estimate the transformed equation

$$\ln(\text{POPULARITY}) = \alpha + \beta \ln(\text{RANK})$$

Following each graph I give the power function resulting from the estimation (with $a = e^{\alpha}$ and $b = \beta$) along with the adjusted R^2 for the transformed regression. In all cases, the estimates for α and β were statistically significant at $p<.001$.

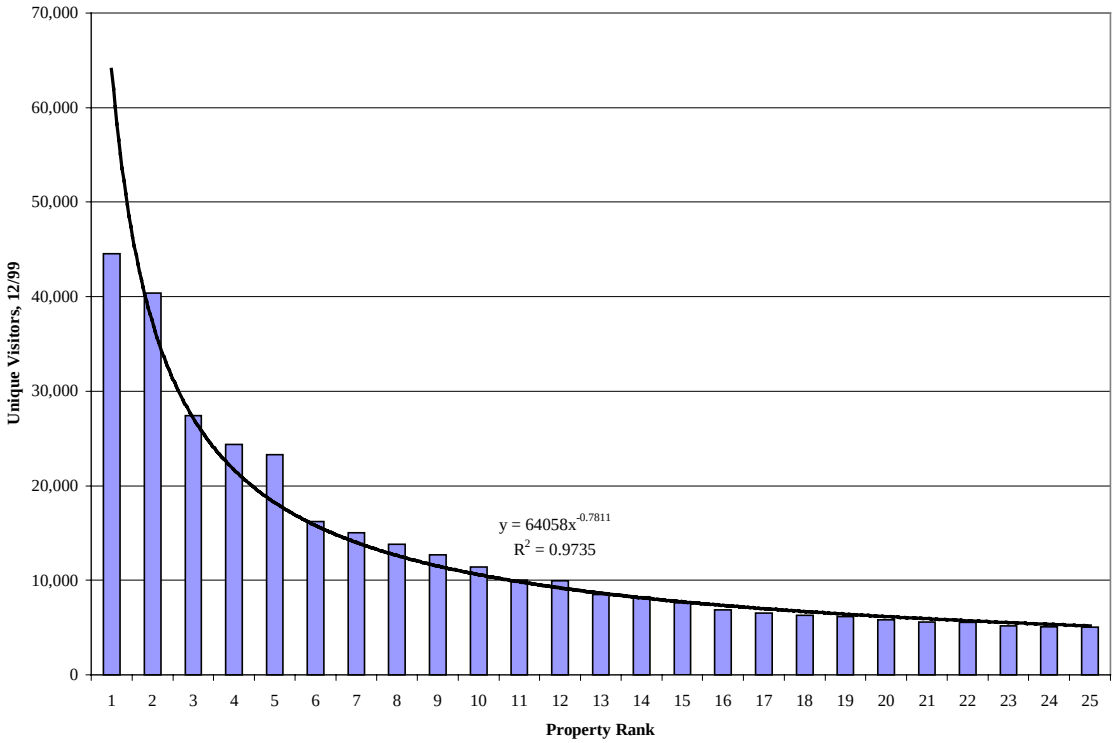
For all sources, the results reported in the text and footnote are based only on estimation of the specific values noted. The actual values from the sources were used for #1, #10, and #20 in all cases and for #50 and #100 where available.

Figure 1, SineWave "Top 100" Australian Domain Rankings



SineWave reported Page Request shares for 100 observations. Remaining data for the table was estimated using $\text{SHARE} = 0.1224 * \text{RANK}^{-0.7855}$, the adjusted R^2 of the transformed regression is .98.

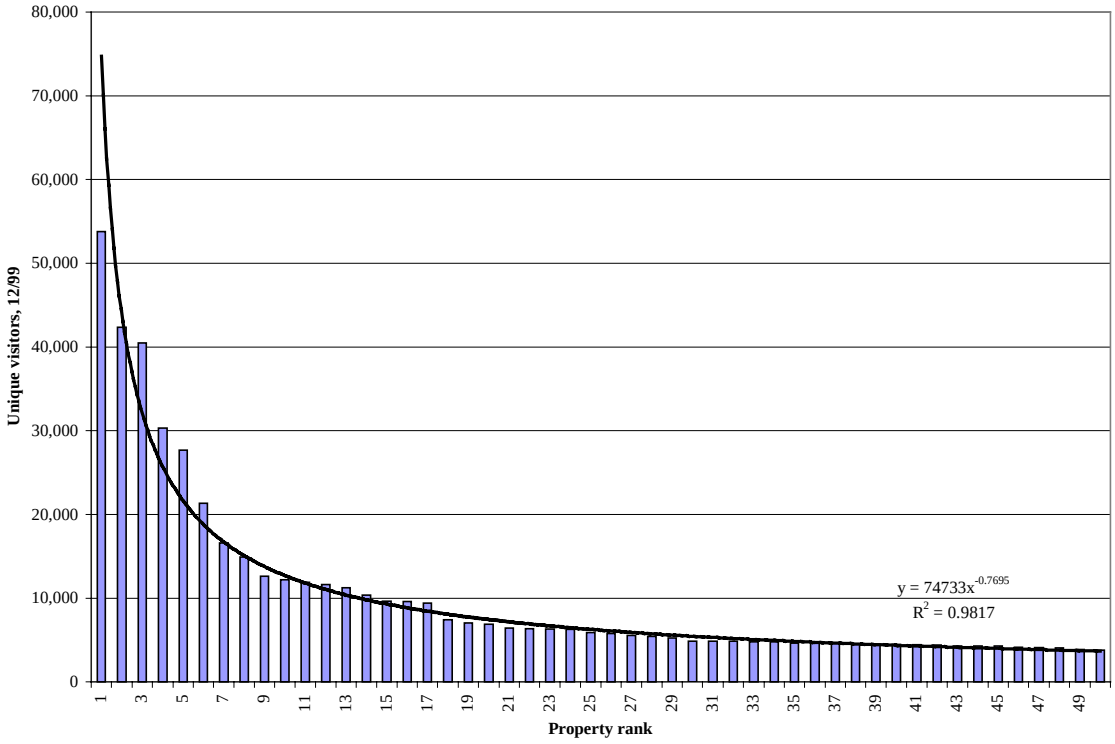
Figure 2, Nielsen//NetRatings Property Visit Rankings



Source: Nielsen//NetRatings Data, December 1999; N//NR has 25 observations. Remaining data for the table was estimated using VISITS = 64058 * RANK$^{-0.7811}$, the adjusted R^2 of the transformed regression is .97.

Appendix

Figure 3, Media Metrix Property Rankings



Source: Media Metrix, December 1999 data. Media Metrix reports to top 50 web properties. Remaining data for the table was estimated using VISITS = 74733* RANK $^{-0.7694729}$; the adjusted R^2 of the transformed regression is .98.

Exhibit 1: Professor Jeffrey K. MacKie-Mason *Curriculum Vitae*

Contact Information

School_of_Information
301C West Hall
University of Michigan
Ann Arbor, MI 48109-1092

Voice: (734) 647-4856
Fax: (734) 764-2475
Internet e-mail: jmm@umich.edu
Web: www-personal.umich.edu/~jmm/

Education

Ph.D. Economics, MIT, 1986
Master of Public Policy, University of Michigan, 1982
A.B. Environmental Policy, Summa Cum Laude, Dartmouth College, 1980

Regular Positions

Professor of Information, University of Michigan, 1998-present
Professor of Economics, University of Michigan, 1999-present
Professor of Public Policy, University of Michigan, 1999-present
Director, Program for Research on the Information Economy (PRIE), 1996-present

Past Positions

Associate Professor of Information, University of Michigan, 1996-1998
Associate Professor of Economics, University of Michigan, 1992-1999
Associate Professor of Public Policy, University of Michigan, 1992-1999
Associate Research Scientist, Institute of Public Policy Studies, University of Michigan, 1992-95
Research Associate, National Bureau of Economic Research, 1993-1999
Faculty Research Fellow, National Bureau of Economic Research, 1987-93
Assistant Professor of Economics and Public Policy, University of Michigan, 1986-92
Assistant Research Scientist, Institute of Public Policy Studies, University of Michigan, 1986-92

Visiting Positions

Visiting Scholar, California Energy Institute, University of California, Berkeley, 1994

Visiting Faculty Scholar, University of Oslo, Norway, 1993

National Fellow, Hoover Institution, Stanford University, 1990-91

Other Positions

Commissioner, Ann Arbor Cable Communications Commission, 1996-1998

Research Resident, U.S. Department of Energy, Office of Policy, Planning and Evaluation, 1981

Consultant, National Audubon Society, Washington, DC, 1979

Honors and Awards

University Partnership Fellow, IBM, 1998-99, 1999-2000

National Fellow, Hoover Institution, Stanford, 1990-91

Joseph A. Livingston Research Scholar, University of Michigan, 1989-90

Collegiate Council Fellow, University of Michigan, 1987-88

National Tax Association Outstanding Doctoral Dissertation Award, 1986

Alfred P. Sloan Foundation Fellowship, 1985-86

National Science Foundation Fellowship, 1982-85

Phoenix Memorial Laboratory Energy Research Fellowship, 1981-82

Rackham First Year Graduate Fellowship, 1980-81

Phi Beta Kappa, Highest Distinction Honors, 1980

Andrew W. Mellon Natural Resource Economics Fellowship, 1980

Paul R. Richter Fellowship, 1979-80

Research Grants

National Science Foundation, “NSF, "Computational Markets for Decentralization of Complex Time-Dependent Activities," CSS- , 2000-2003, with Michael Wellman.

DARPA, "Market-Based Adaptive Architectures for Information Survivability," 1997-2000, with Mike Wellman and Sugih Jamin. DARPA/ITO grant F30602-97-1-0228.

IBM, University Partnership Grant, "Competition in Product Space for a Multi-Agent Information Goods Economy," 1999, with Ed Durfee

Council on Library Resources, "Pricing Electronic Scholarly Information," 1997-99

National Science Foundation Grant, "Economics of the Internet," SBR-9230481, 1994-99, with Hal Varian

National Science Foundation Grant, "Measuring Distortions from the Differential Tax Treatment of Corporate and Noncorporate Income," SES-9122240, 1992-94, with Roger Gordon

National Science Foundation Grant, "Interactions Between Seasonal Cycles and Business Cycles," SES-8921506, 1990-92, with Jeff Miron and Robert Barsky

University of Michigan Faculty Recognition Fund Grant, 1990-93

Office of Tax Policy Research Grant, 1990

Faculty Assistance Fund Grant, 1990

Research Partnership Grant, UM, 1988-89

Rackham Faculty Research Grant, 1987-88

Biographical Listings

Who's Who in the World, 1996-present

Who's Who in Science and Engineering, 1995-present

Who's Who in America, 1993-present

Who's Who in the Midwest, 1991-present

Who's Who in Economics, 1991-present

Who's Who in Finance, 1990-present

Journal Editorial Positions

Founding Editorial Board, Electronic Commerce Research, 1999-present

Editorial Board, Telecommunication Systems, 1996-present

Founding Editorial Board, Netnomics: Economic research and Electronic Networking, 1996-present

Associate Editor, RAND Journal of Economics, 1995-present

Advisory Board, The Ecommerce Research Forum (MIT Sloan and INFORMS), 1998-present

Conference Editorial Positions

Co-Chair, Program Committee, ACM Conference on Electronic Commerce (EC-00), 2000

Chair, Conference on Economics and Usage of Digital Library Collections, Ann Arbor, Michigan, 2000.

Board of Directors, Telecommunications Policy Research Conference, 1997-2000

Program Committee, Internet Quality of Service, Massachusetts Institute of Technology, December 2-3, 1999

Program Committee, ACM Conference on Electronic Commerce (EC-99), 1999

Co-Chair, Program Committee, First International Conference on Information Economies, October 1998

Program Committee, Second European Conference on Research and Advanced Technology for Digital Libraries, September 19-23, 1998

Chair, Program Committee, 25th Annual Telecommunications Policy Research Conference, September 1997

Organizing Committee, The Economics of Digital Information and Intellectual Property Conference, Harvard University, January 1997

NSF Panel on Instrumentation for Social, Behavioral and Economic Research, 1995, 1996, 1997

Organizing Committee, 24th Annual Telecommunications Policy Research Conference, October 1996

Organizing Committee, Internet Economics Conference, Massachusetts Institute of Technology, May 1995

Organizing Committee, 10th Michigan Conference on Public Utility Regulation, April 1994

Conference Chair, NBER Universities Research Conference on Environmental Economics, Cambridge, MA, 1992

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Paying the Piper: Scholarly Publishing on the Electronic Network, Association of Research Libraries Conference Proceedings. Also in The Journal of Electronic Publishing, online at http://www.press.umich.edu/jep/works/mackiemason.usage.html.

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http://www.fcc.gov/Bureaus/Common_Carrier/Comments/report2congress/rtcreply.zip.

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MacKie-Mason, Jeffrey K. and Hal R. Varian, "Pricing Internet Usage," Internet Business Journal, 1993.

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Journal of Economic Behavior and Organization

Journal of Economic Dynamics and Control

Journal of Economics

Journal of Economics and Business

Journal of Economics and Management Strategy

Journal of Finance

Journal of Financial and Quantitative Analysis

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University of Michigan Press

Conference and Seminar Presentations

"System Design, User Cost and Electronic Usage of Journals", Conference on Economics and Usage of Digital Library Collections, March 23-24, 2000, Ann Arbor, MI.

"Variable QoS From Shared Web Caches: User-Centered Design and Value-Sensitive Replacement," MIT Workshop on Internet Service Quality Economics, December 2-3, 1999, Cambridge, MA.

"Competition Between Firms that Bundle Information Goods", Industrial Organization Workshop, Department of Economics, University of California, Berkeley, 19 October 1999.

"Automated Strategy Searches in an Electronic Goods Market: Learning and Complex Price Schedules," ACM Conference on Electronic Commerce 1999 (EC-99), November 1999.

"One Size Doesn't Fit All: Improving Network QoS Through Preference-Driven Web Caching," 27th Annual Telecom Policy Research Conference, Alexandria, Virginia, September 25-27, 1999.

"Competition Between Firms that Bundle Information Goods," 27th Annual Telecom Policy Research Conference, Alexandria, Virginia, September 25-27, 1999.

"Pricing and Bundling Electronic Information Goods: Field Evidence", 27th Annual Telecom Policy Research Conference, Alexandria, Virginia, September 25-27, 1999.

"Mechanisms, Institutions and Multi-Agent Systems," Northwestern/MEDS Workshop on Microeconomic Theory, Northwestern University, Evanston, Illinois, July 22-25, 1999.

"Competition Between Firms that Bundle," Invited presentation, U.S. Federal Trade Commission, Washington, DC, April 15, 1999.

"Bilateral Negotiation with Fees," Workshop on Automated Negotiation, IBM T. J. Watson Research Labs, Yorktown Heights, NY, March 18, 1999.

"Auction Protocols for Decentralized Scheduling," Computer Science Colloquium, Purdue University, March 1, 1999.

"Market-Biased Replacement Policies for QoS Web Caching," Invited presentation, Microsoft Research, Redmond, WA, February 25, 1999.

"Institutions and Multi-Agent Systems," Bell Atlantic Distinguished Lecture, Carnegie-Mellon University, Pittsburgh, PA, February 18, 1999.

"Multi-Agent Systems, Mechanism Design and Institutions," invited talk, First International Conference on Information and Computation Economies (ICE'98), Charleston, SC, October 25-27, 1998.

"Pricing, Bundling and Electronic Access to Information," Columbia University Business School, New York, NY, invited lecture, October 14, 1998.

"Economics in the Design of Computer-Assisted Auctions," invited paper at the IBM Conference on Trends and Research in Advanced E-Commerce, November 2-3, 1998, Ruschlikon, Switzerland.

"Economics of Electronic Access to Scholarly Journals," American Libraries Association, Workshop on PEAK, Washington, DC, June 28, 1998.

"Mechanism Designs for Distributed Network Scheduling," IBM T. J. Watson Research Labs lecture, Hawthorne, NY, June 18, 1998.

"Mechanism Designs for Distributed Network Scheduling," Microeconomics Seminar, University of Iowa, May 13, 1998.

"Cyberdoodling: Management in the Information Age," invited lecture at the Kellogg School of Management, Northwestern University, May 12, 1998.

"Network Architecture and Content Provision: An Economic Analysis," Columbia University Business School, New York, NY, May 4, 1998.

"Why Do Corporations Pay Too Much Tax?" Public Finance Seminar, University of Michigan, Ann Arbor, MI, April 20, 1998.

"Info Bundling: Exploring the Design Space," Conference on Electronic Markets and Economics 1998, Austin, TX, February 17, 1998.

"Mechanisms for Resource Allocation in Integrated Services Networks," Bell Labs, Murray Hill, NJ, November 21, 1997.

"A Smart Market for Resource Reservation in a Multiple QoS Network," 25th Annual Telecom Policy Research Conference, Alexandria, VA, September 28, 1997.

"Research and Policy Issues: Digital Libraries," Intellectual Property and Economics Workshop, Pisa, Italy, August 27-29, 1997.

"Why Do Some Corporations Pay More Tax Than Necessary?" NBER Summer Institute, Public Economics Workshop, Cambridge, MA, August 5, 1997.

"Allocating Bandwidth for Multiple Qualities of Service," IBM T.J. Watson Research Lab, Hawthorne, NY, June 23, 1997.

"Economic Issues For the Future Internet," Highlands Forum, Bell Labs, Murray Hill, NJ, April 28, 1997.

"Restricting and Leveraging Complementary Products After Kodak," ALI-ABA Conference, "Antitrust/Intellectual Property Claims in High Technology Markets," Boston, MA, April 24-25, 1997.

"Market-based Adaptive Architectures for Information Survivability," presented at Bell Labs, Holmdel, NJ, March 28, 1997.

"A Smart Market for Resource Reservation in a Multiple QoS Network," Columbia Workshop on Networking Games and Pricing, New York, NY, March 27, 1997.

"Economics of Distribution Restraints and Antitrust," Conference Board Conference on Antitrust, New York, NY, March 6, 1997.

"Pricing Electronic Access to Scholarly Journals: A Field Experiment," Conference on Economics of Digital Information and Intellectual Property, Harvard University, Boston, MA, January 23-25, 1997.

"Economic Issues of the Future Internet," North American Network Operators Group (NANOG), Ann Arbor, MI, October 24, 1996.

"PEAK: Pricing Electronic Access to Knowledge," PRIE Brownbag, Ann Arbor, MI, October 23, 1996.

"PEAK: Pricing Electronic Access to Knowledge," Conference on Electronic Subscriptions, Heemskerk, Netherlands, October 17, 1996.

"Aftermarket Antitrust and Intellectual Property Post-Kodak," American Bar Association Antitrust Section Annual Meetings, Orlando, FL, August 5, 1996.

"Layering and Leveraging: Making Sense of Telecom Market Structure," Federal Communications Commission, Washington, DC, July 17, 1996.

"Pricing Scholarly Information: Opportunities," Elsevier Conference on Scholarly Electronic Publishing, New York, NY, July 9, 1996.

"Digital Pricing: The University of Michigan Journals Pricing Experiment," Elsevier Conference on Scholarly Electronic Publishing, New York, NY, July 9, 1996.

"Research on Intellectual Property Economics," panel presentation, Digital Libraries Initiative Conference, School of Information, University of Michigan, Ann Arbor, MI, May 17, 1996.

"Information Economics," faculty education series, School of Information, University of Michigan, Ann Arbor, MI, April 19, 1996.

"Pricing in Information Networks," INFOCOM '96, San Francisco, March 28, 1996.

"The Role of Economics in Information Science," faculty seminar, School of Information, University of Michigan, Ann Arbor, MI, February 29, 1996.

"Network Architecture and Content Provision: An Economic Analysis," Allied Social Science Association Convention, San Francisco, CA, January 4-7, 1996.

"Pricing Congestible Resources," Allied Social Science Association Convention, San Francisco, CA, January 4-7, 1996.

"Network Architecture and Content Provision: An Economic Analysis," Microeconomics Workshop, Michigan State University, November 20, 1995.

"Network Architecture and Content Provision: An Economic Analysis," Telecommunications Policy Research Conference, Solomons, MD, September 30-October 2, 1995.

"A 'Smart' Spatial Market for Spot Electricity Exchanges," University of Michigan Business School, Ann Arbor, MI, April 14, 1995.

"Using Pricing for Efficiency in ATM Networks," 3rd International Telecommuncations Systems Analysis and Design Conference, Vanderbilt University, Nashville, TN, March 17, 1995.

"Allocating Resources in Future Integrated Services Information Networks," MIT Workshop on Internet Economics, Cambridge, MA, March 10, 1995.

"Reserving Network Resources in Advance," Computer Science Department Seminar, Auburn University, February 1, 1995.

"The Economics of Future Integrated Services Information Networks," Auburn University lecture, January 31, 1995.

"Economic Attributes of High Technology Markets: Antitrust Issues," American Law Institute / American Bar Association Conference, San Francisco, CA, January 26-27, 1995.

"The Economics of Future Integrated Services Information Networks," University of Michigan Telecommunications Symposium, Ann Arbor, MI, December 9, 1994.

"The Economics of Future Integrated Services Information Networks," Conference on the Future of Mathematical Communication, Math Sciences Research Institute, University of California, Berkeley, CA, December 1-4, 1994.

"A 'Smart' Spatial Market for Spot Electricity Exchanges," Harvard University, Boston, MA, November 16, 1994.

"Information Goods and Networks: Economic Issues," FARNET Conference on Health Care and Information Networks, Washington, DC, November 10-11, 1994.

"Pricing Congestible Resources," Microeconomics Workshop, Western Michigan University, November 3, 1994.

"The Economics of Future Integrated Services Information Networks," EDUCOM '94, San Antonio, TX, October 31-November 2, 1994.

"Economic FAQs About the Internet," Time-Warner Conference on Interactive Multimedia in the Classroom, University of Michigan, Ann Arbor, MI, October 20-22, 1994.

"Economic Issues in Data and Integrated Telecommunications Networks," Forum on the Economics of Information Infrastructure, National Science Foundation, Washington, D.C., July 20, 1994.

"Antitrust Policy in Aftermarkets," US Department of Justice, Federal Trade Commission and American Bar Association Antitrust Conference, Washington, DC, May 25-26, 1994.

"Comment on 'Market Failure in the Small Group Market: Evidence from Medical Insurance,' by David Cutler," Transatlantic Public Economics Seminar, Turin, Italy, May 19-21, 1994.

"Exercising Market Power in Proprietary Aftermarkets," Industrial Organization Workshop, University of California, Berkeley, CA, April 26, 1994.

"The Importance of Income Shifting to the Design and Analysis of Tax Policy," International Taxation Policy Conference, Washington, DC, April 19, 1994.

"The Coming Integrated Services Information Networks," Micronet Workshop, University of California, Berkeley, CA, April 12, 1994.

"Information Networks and Public Policy," Graduate School of Public Policy Faculty Seminar, University of California, Berkeley, CA, April 8, 1994.

"Pricing the Internet to Manage Congestion," 2nd International Conference on Telecommunication Systems Modelling and Analysis, Vanderbilt University, Nashville, TN, March 27, 1994.

"A 'Smart' Spatial Market for Spot Electricity Exchanges," California Energy Institute, March 18, 1994.

"Controlling Internet Congestion and Other Economic Problems," UNIX SIG Forum, University of California, Berkeley, CA, March 7, 1994.

"Local Telephone Calling Demand When Customers Face Optional and Nonlinear Price Schedules," Econometrics Workshop, University of California, Berkeley, CA, March 3, 1994.

"Why is There Corporate Taxation in a Small Open Economy? The Role of Transfer Pricing and Income Shifting," Public Economics Workshop, University of California, Berkeley, CA, February 14, 1994.

"Why is There Corporate Taxation in a Small Open Economy? The Role of Transfer Pricing and Income Shifting," NBER Conference on International Taxation, Cambridge, MA, January 14, 1994.

"Why is There Corporate Taxation in a Small Open Economy? The Role of Transfer Pricing and Income Shifting," Economics Workshop, Copenhagen Business School, Copenhagen, Denmark, December 6, 1993.

"Why is There Corporate Taxation in a Small Open Economy? The Role of Transfer Pricing and Income Shifting," Public Economics Workshop, Uppsala University, Uppsala, Sweden, November 1993.

"Tax Distortions to the Choice of Organizational Form," Finance Workshop, Norwegian School of Management, Oslo, Norway, October 14, 1993.

"Why is There Corporate Taxation in a Small Open Economy? The Role of Transfer Pricing and Income Shifting," Faculty Research Seminar, Institute of Economics, University of Oslo, Norway, October 7, 1993.

"Tax Distortions to the Choice of Organizational Form," Business Economics Workshop, Norwegian School of Business and Economics, Bergen, Norway, September 27, 1993.

"Pricing the Internet," Harvard Conference on NREN Implementation, JFK School of Government, Harvard University, Boston, MA, May 1993.

"Local Telephone Calling Demand When Customers Face Optional and Nonlinear Price Schedules," 12th Annual Conference of the Advanced Workshop in Regulation and Public Utility Economics, Cape Cod, MA, May 1993.

"Tax Distortions to the Choice of Organizational Form," NBER Public Economics Meetings, April 14-15, 1993.

"Multi-national Taxes and the Financing of Foreign Direct Investment," Nordic Council Conference on International Taxation, Reykjavik, Iceland, April 1-4, 1993.

"Some Economics of the Internet," 10th Michigan Public Utilities Conference, University of Western Michigan, March 25-27, 1993.

"Exercising Market Power in Proprietary Aftermarkets," Business Economics Seminar, University of Michigan Business School, Ann Arbor, MI, March 5, 1993.

"The Excess Burden from Different Taxation of Corporate and Noncorporate Businesses," University of Michigan Public Finance Seminar, Ann Arbor, MI, December 14, 1992.

"Taxes and the Choice of Organizational Form," NBER Finance Program Meetings, December 11, 1992.

"The Economics of Customer Lock-in and Market Power in Services," Conference on the Service Industry, Wharton Graduate School of Management, University of Pennsylvania, Philadelphia, PA, October 20, 1992.

"The Excess Burden from Different Taxation of Corporate and Noncorporate Businesses," Michigan State University Microeconomics Seminar, May 11, 1992.

"The Excess Burden from Different Taxation of Corporate and Noncorporate Businesses," Northwestern University Microeconomics Seminar, May 3, 1992.

"Comment on 'Energy Tax Credits and Residential Conservation Investment', by Kevin Hassett and Gilbert Metcalf," NBER Public Economics Program Meetings, April 2-3, 1992.

"Taxes and the Choice of Organizational Form," University of Toronto Business Economics Workshop, Toronto, Canada, March 6, 1992.

Ongoing Consulting

SBC, 2000-present
Strategic consulting

Henrico County, Virginia, 2000-present
Cable open access litigation, defendant against AT&T

Cable & Wireless Optus (Australia), 2000-present
Regulatory proceeding against Telstra (Internet service provider (ISP) merger)

City and County of San Francisco, 1999-present
Antitrust litigation against Hearst Newspapers

Gravity et al., 1999-present
Antitrust litigation against Microsoft

Lingo et al., 1999-present
Antitrust litigation against Microsoft

Intergraph, 1998-present
Antitrust and patent litigation against Intel

Biotechnology Developer (confidential engagement), 1998-present
Biotechnology patent and antitrust litigation

HPS, Inc., *et al.,* 1996-present
Private plaintiff and class action antitrust litigation concerning Caller ID; plaintiff vs. AT&T

Creative Copier Services, Inc., 1996-present
high-volume copier antitrust litigation; plaintiff vs. Xerox

Past Consulting

America OnLine, Inc., 1998-1999
Cable modem access proceedings and universal service proceedings before the FCC

GTE, 1997-1999
Internet content and services antitrust litigation

Disc Manufacturing, Inc., 1996-1999
Disc manufacturing antitrust and patent litigation; plaintiff vs. Pioneer Electronics

Borg-Warner, Inc., 1998
Antitrust litigation against United Technologies, Inc.

Alfred Stephenson et al. (residential phone customer class), 1998
Class action antitrust litigation against Bell Atlantic

Nationwide *et al.,* 1996-98
High-volume copier antitrust litigation; plaintiff vs. Kodak

Acquisition Specialists, Inc., 1995-97
High-volume copier antitrust litigation; plaintiff vs. Xerox

Telcom Technical Services, Inc., *et al.,* 1995-97
Telecommunications equipment maintenance litigation; plaintiff vs. Rolm Company

America OnLine, 1995
Antitrust consulting

AT&T, 1995
Antitrust consulting

Sun Microsystems, 1995
Antitrust consulting

Electronic Data Systems, Inc. (EDS), 1994-95
Computer services antitrust litigation; defendant - prevailed in Federal District Court

Image Tech Services (ITS) *et al.,* 1994-98
High-volume copier and micrographics antitrust litigation; plaintiff vs. Kodak - prevailed in Federal District Court

Independent Service Network International, 1994-96
Antitrust consulting in re: IBM motion to lift the 1956 Consent Decree

Bell Atlantic Business Systems Services, 1994-96
Antitrust consulting

Southeastern Express, Inc., 1994
Computer maintenance antitrust and litigation; plaintiff

Micro Rim Corporation, 1993-97
Replacement urethane bumper antitrust litigation; plaintiff vs. The Colonel's

Datasat Company, Inc., 1992-94
Computer maintenance antitrust and intellectual property litigation; plaintiff vs. Unisys

St. John's Hospital, 1992-93
Hospital monopolization litigation; defendant vs. private plaintiff

Comm-Tract, Inc., 1991-97
Telecommunications switching equipment antitrust litigation; plaintiff vs. Northern Telecom

Systemcare, Inc., 1991-93
Computer maintenance antitrust and intellectual property litigation; plaintiff vs. Wang

Grumman Systems Support Corporation, 1990-94
Computer maintenance antitrust and intellectual property litigation; plaintiff vs. Data General

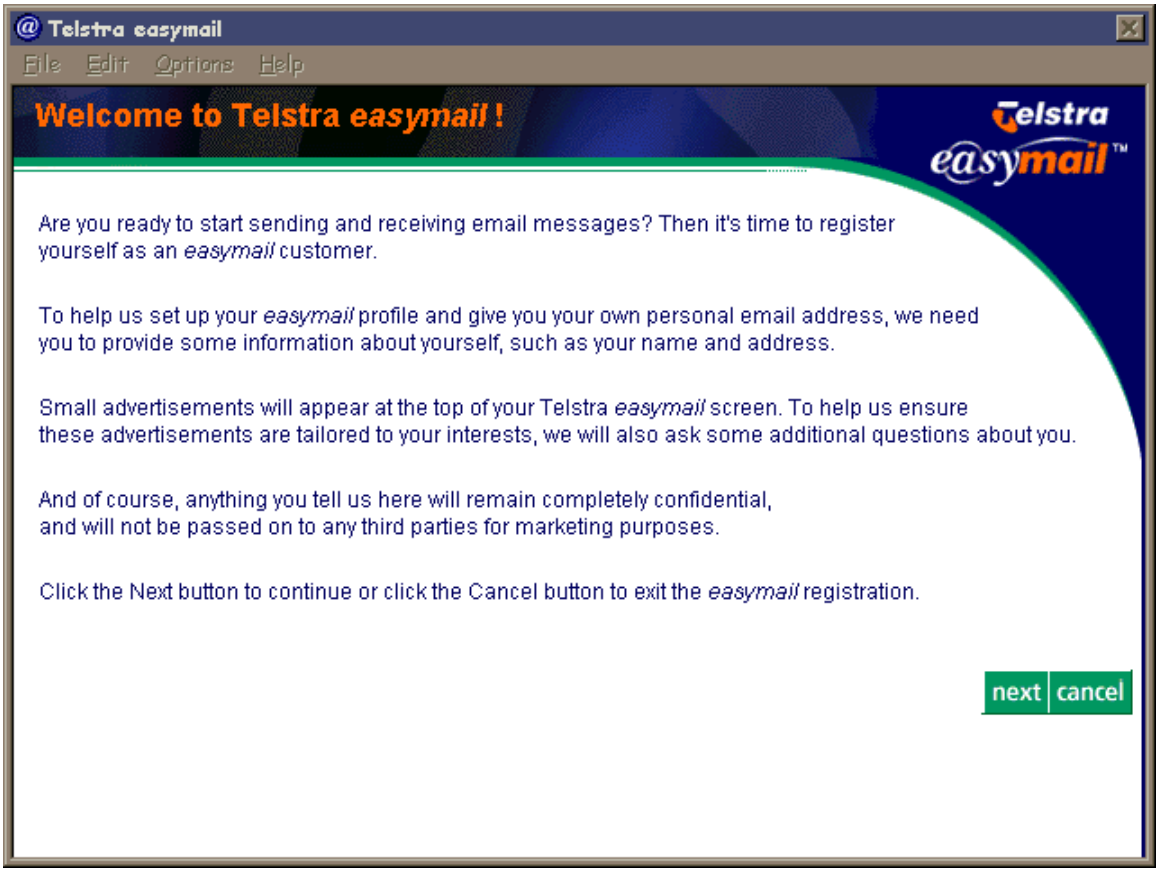
Virtual Maintenance, Inc., 1989-94
Computer maintenance antitrust litigation; plaintiff vs. Prime Computer - prevailed in Federal District Court; settled while on appeal

Intel, 1988
Semiconductor patent protection and antitrust proceedings; plaintiff vs. Hyundai

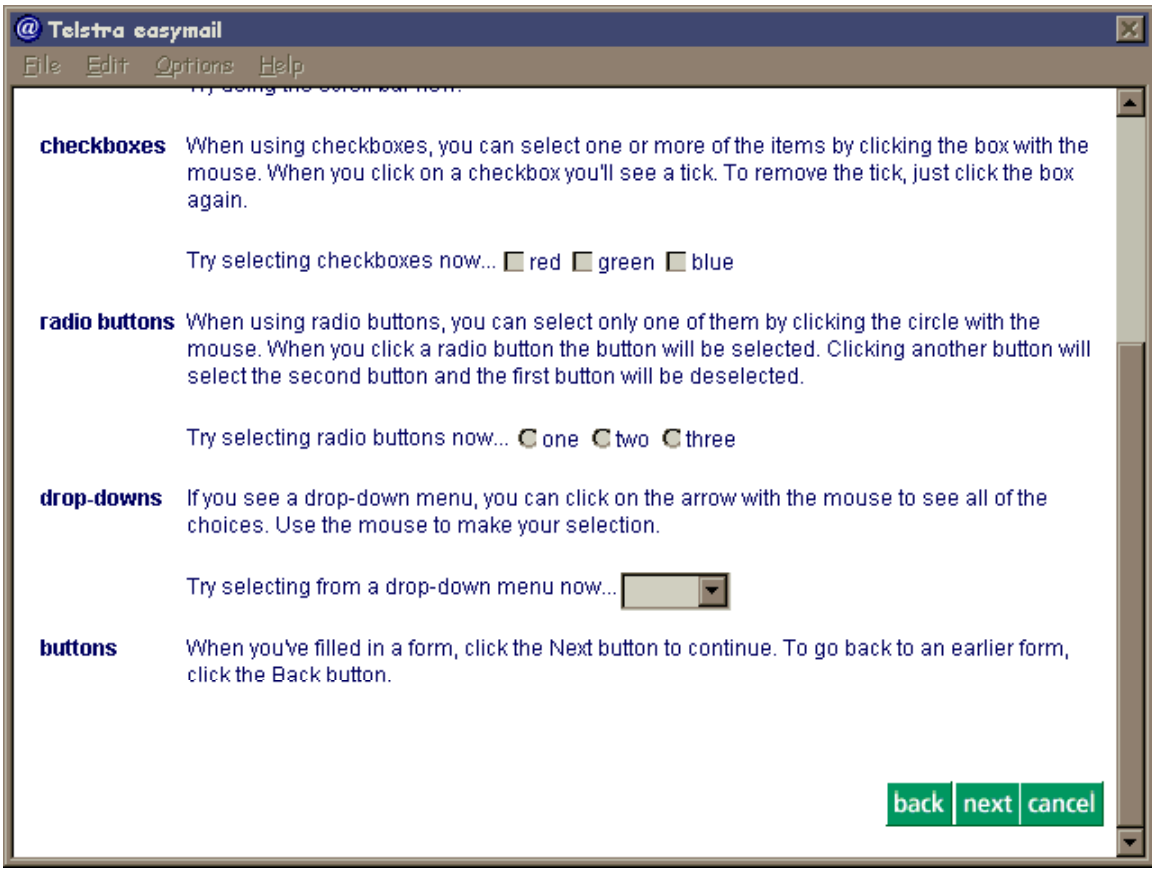
Special consultant to National Economic Research Associates, 1984-89
Antitrust and patent economics. Projects included: Pacific Telesis, 1986, cellular radio licencing and merger proceedings; Bristol-Myers, 1986, antitrust proceedings

du Pont, 1984-85
Aramid fiber patent protection and antitrust proceedings; plaintiff vs. Akzo NV - prevailed at ITC and in Federal Circuit Court

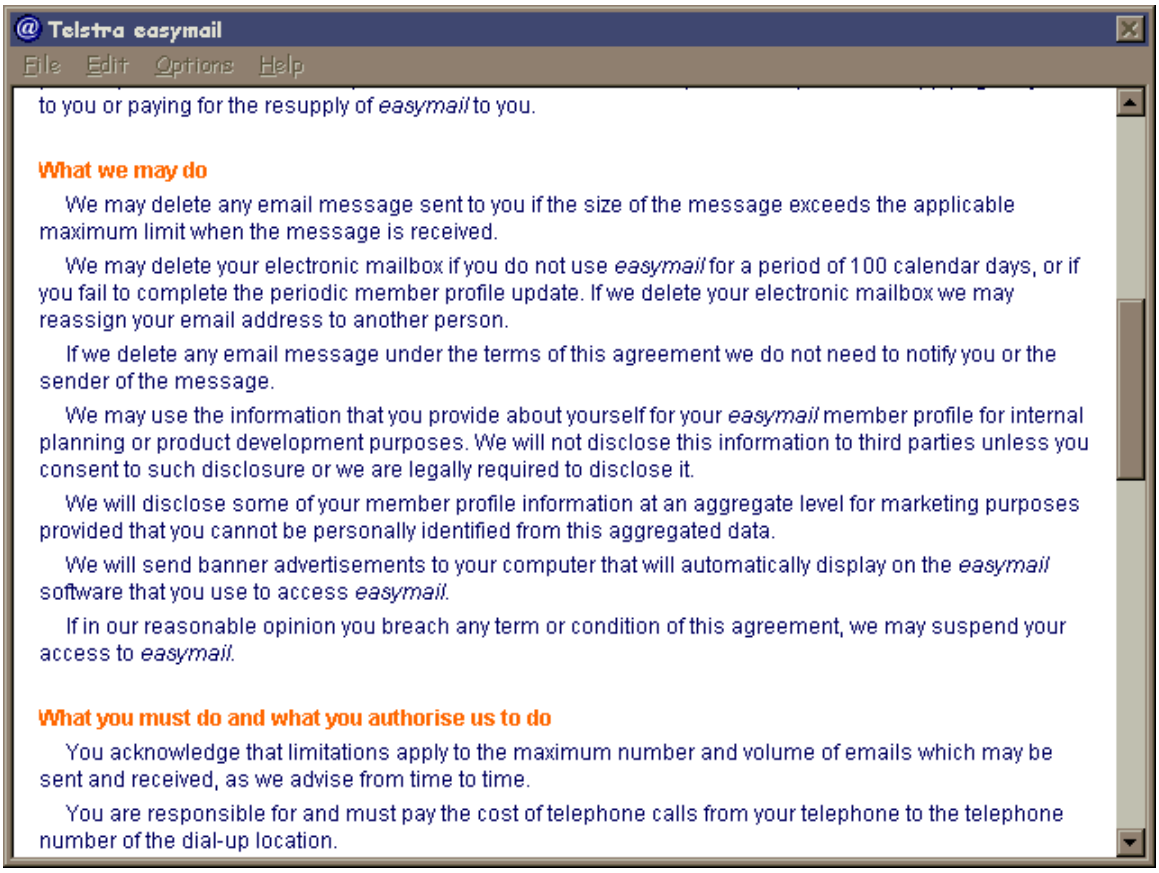
Exhibit 2, Telstra *easymail* Setup Screens

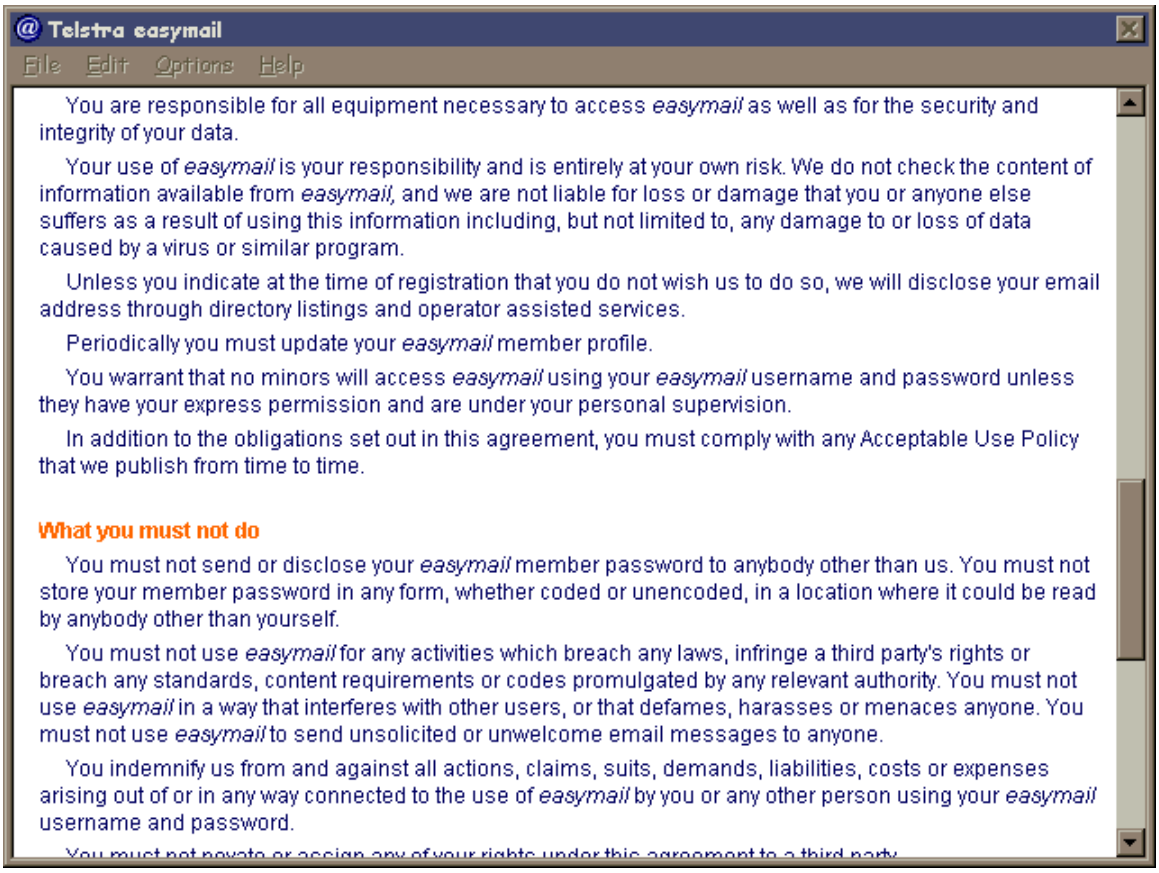


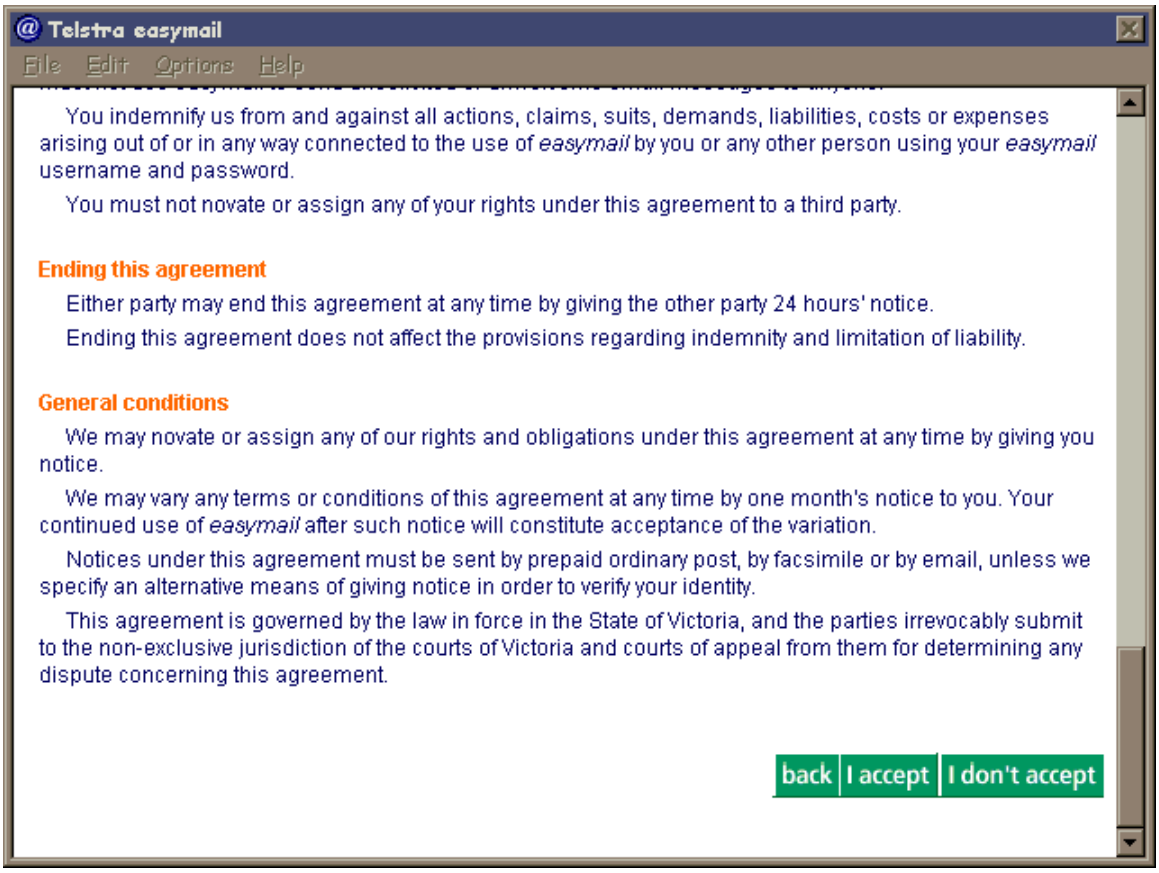

Telstra easymail
File Edit Options Help
Filling in the registration forms (an optional lesson)
Telstra
easymail
During this registration process you'll need to fill in some electronic forms. These forms are easy to fill in, but they do have some special features that you may not have seen before.
scroll bars
If the form is longer than what can be displayed in this window, use the scroll bar at the right of the screen to move the form up and down. Drag the scroll bar with the mouse, or click on the arrows at the top and bottom of the bar, to move up and down.
Try using the scroll bar now.
checkboxes
When using checkboxes, you can select one or more of the items by clicking the box with the mouse. When you click on a checkbox you'll see a tick. To remove the tick, just click the box again.
Try selecting checkboxes now... red green blue
radio buttons
When using radio buttons, you can select only one of them by clicking the circle with the mouse. When you click a radio button the button will be selected. Clicking another button will select the second button and the first button will be deselected.
Try selecting radio buttons now... one two three
drop-downs
If you see a drop-down menu, you can click on the arrow with the mouse to see all of the

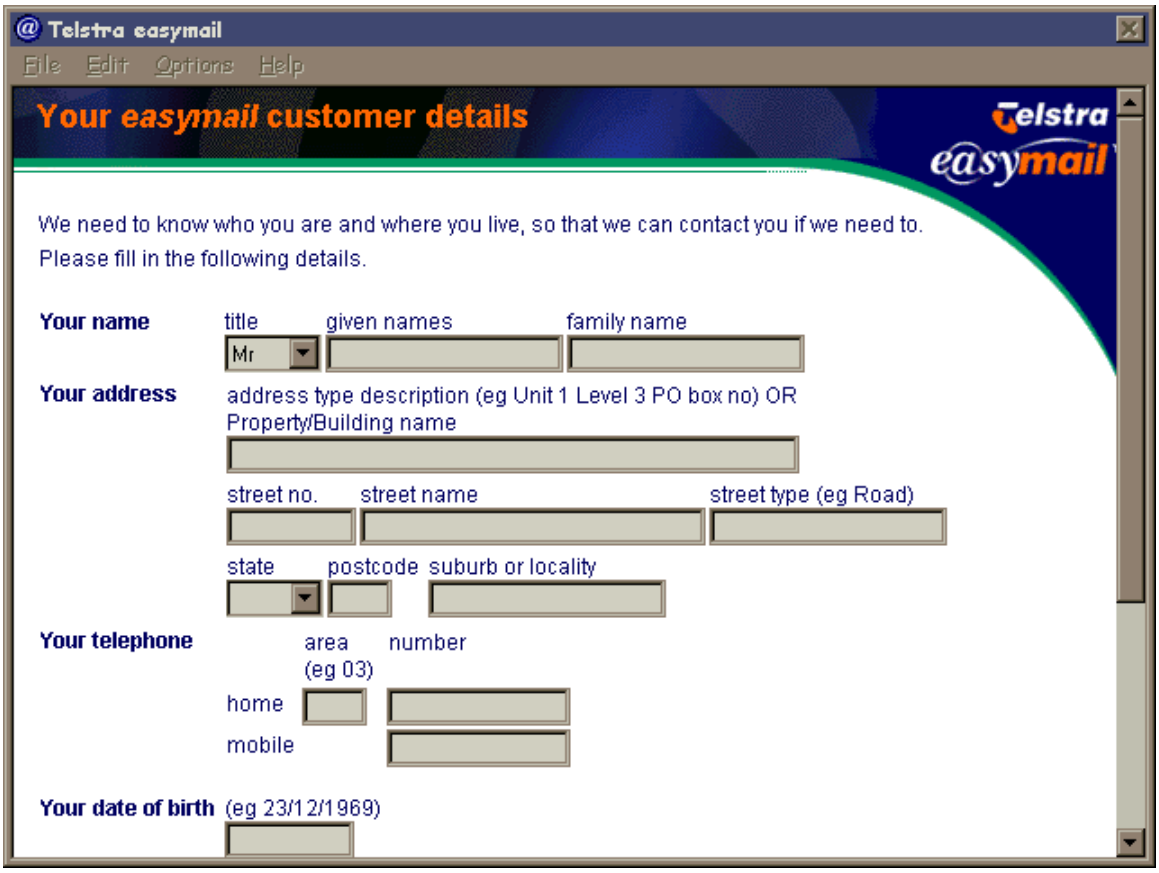

Telstra easymail
File Edit Options Help
checkboxes
When using checkboxes, you can select one or more of the items by clicking the box with the mouse. When you click on a checkbox you'll see a tick. To remove the tick, just click the box again.
Try selecting checkboxes now... red green blue
radio buttons
When using radio buttons, you can select only one of them by clicking the circle with the mouse. When you click a radio button the button will be selected. Clicking another button will select the second button and the first button will be deselected.
Try selecting radio buttons now... one two three
drop-downs
If you see a drop-down menu, you can click on the arrow with the mouse to see all of the choices. Use the mouse to make your selection.
Try selecting from a drop-down menu now...
buttons
When you've filled in a form, click the Next button to continue. To go back to an earlier form, click the Back button.
back next cancel


Telstra easymail
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Telstra easymail service agreement
Telstra
easymail
About this agreement
In this agreement...
- easymail means the Telstra easymail service
- our, we or us means Telstra Corporation Limited (ACN 051 775 556).
Your use of easymail is subject to the terms and conditions of this agreement. Please read these terms and conditions carefully.
This agreement begins when we accept your registration application and continues until terminated by either party.
What we must do
The easymail service enables you to send and receive electronic mail (email) by means of a dial-up session from an appropriately configured personal computer.
We must use our best efforts to provide you with easymail and an easymail username and password to access easymail . We must notify you by mail or email of any variation to this agreement.
We must make all reasonable efforts to ensure the continuity of easymail. However liability for negligence, breach of contract or contravention of any law as a result of our failure to provide easymail or any part of it, if it cannot be excluded, is limited to the maximum extent permitted by law to resupplying easymail


Telstra easymail
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to you or paying for the resupply of *easymail* to you.
What we may do
We may delete any email message sent to you if the size of the message exceeds the applicable maximum limit when the message is received.
We may delete your electronic mailbox if you do not use *easymail* for a period of 100 calendar days, or if you fail to complete the periodic member profile update. If we delete your electronic mailbox we may reassign your email address to another person.
If we delete any email message under the terms of this agreement we do not need to notify you or the sender of the message.
We may use the information that you provide about yourself for your *easymail* member profile for internal planning or product development purposes. We will not disclose this information to third parties unless you consent to such disclosure or we are legally required to disclose it.
We will disclose some of your member profile information at an aggregate level for marketing purposes provided that you cannot be personally identified from this aggregated data.
We will send banner advertisements to your computer that will automatically display on the *easymail* software that you use to access *easymail*.
If in our reasonable opinion you breach any term or condition of this agreement, we may suspend your access to *easymail*.
What you must do and what you authorise us to do
You acknowledge that limitations apply to the maximum number and volume of emails which may be sent and received, as we advise from time to time.
You are responsible for and must pay the cost of telephone calls from your telephone to the telephone number of the dial-up location.


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You are responsible for all equipment necessary to access easymail as well as for the security and integrity of your data.
Your use of easymail is your responsibility and is entirely at your own risk. We do not check the content of information available from easymail, and we are not liable for loss or damage that you or anyone else suffers as a result of using this information including, but not limited to, any damage to or loss of data caused by a virus or similar program.
Unless you indicate at the time of registration that you do not wish us to do so, we will disclose your email address through directory listings and operator assisted services.
Periodically you must update your easymail member profile.
You warrant that no minors will access easymail using your easymail username and password unless they have your express permission and are under your personal supervision.
In addition to the obligations set out in this agreement, you must comply with any Acceptable Use Policy that we publish from time to time.
What you must not do
You must not send or disclose your easymail member password to anybody other than us. You must not store your member password in any form, whether coded or unencoded, in a location where it could be read by anybody other than yourself.
You must not use easymail for any activities which breach any laws, infringe a third party's rights or breach any standards, content requirements or codes promulgated by any relevant authority. You must not use easymail in a way that interferes with other users, or that defames, harasses or menaces anyone. You must not use easymail to send unsolicited or unwelcome email messages to anyone.
You indemnify us from and against all actions, claims, suits, demands, liabilities, costs or expenses arising out of or in any way connected to the use of easymail by you or any other person using your easymail username and password.


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You indemnify us from and against all actions, claims, suits, demands, liabilities, costs or expenses arising out of or in any way connected to the use of easymail by you or any other person using your easymail username and password.
You must not novate or assign any of your rights under this agreement to a third party.
Ending this agreement
Either party may end this agreement at any time by giving the other party 24 hours' notice.
Ending this agreement does not affect the provisions regarding indemnity and limitation of liability.
General conditions
We may novate or assign any of our rights and obligations under this agreement at any time by giving you notice.
We may vary any terms or conditions of this agreement at any time by one month's notice to you. Your continued use of easymail after such notice will constitute acceptance of the variation.
Notices under this agreement must be sent by prepaid ordinary post, by facsimile or by email, unless we specify an alternative means of giving notice in order to verify your identity.
This agreement is governed by the law in force in the State of Victoria, and the parties irrevocably submit to the non-exclusive jurisdiction of the courts of Victoria and courts of appeal from them for determining any dispute concerning this agreement.
back
I accept
I don't accept


Telstra easymail
File Edit Options Help
Your easymail customer details
Telstra easymail
We need to know who you are and where you live, so that we can contact you if we need to.
Please fill in the following details.
Your name
title
given names
family name
Mr
Your address
address type description (eg Unit 1 Level 3 PO box no) OR Property/Building name
street no.
street name
street type (eg Road)
state
postcode
suburb or locality
Your telephone
area (eg 03)
number
home
mobile
Your date of birth
(eg 23/12/1969)

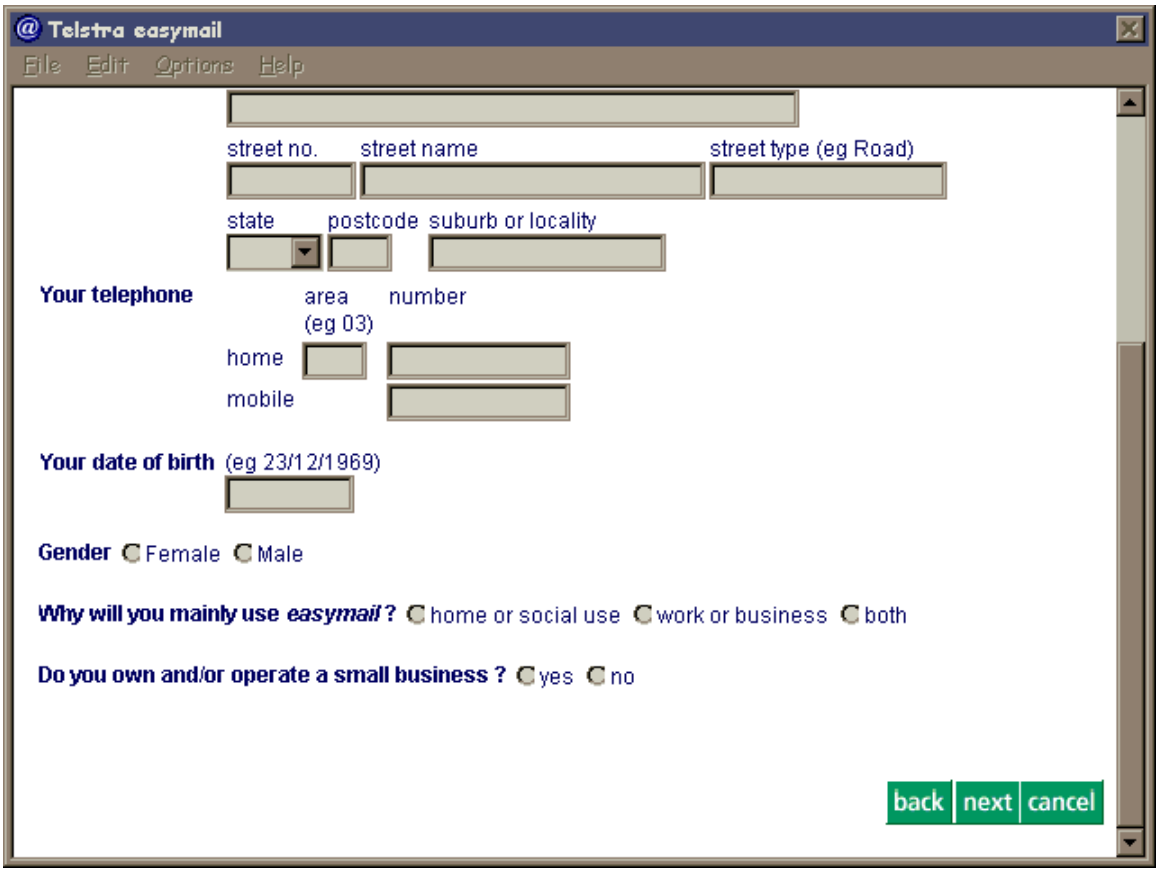

Telstra easymail
File Edit Options Help
street no.
street name
street type (eg Road)
state
postcode
suburb or locality
Your telephone
area (eg 03)
number
home
mobile
Your date of birth (eg 23/12/1969)
Gender Female Male
Why will you mainly use easymail ? home or social use work or business both
Do you own and/or operate a small business ? yes no
back
next
cancel

Exhibit 2, Telstra *easymail* Setup Screens

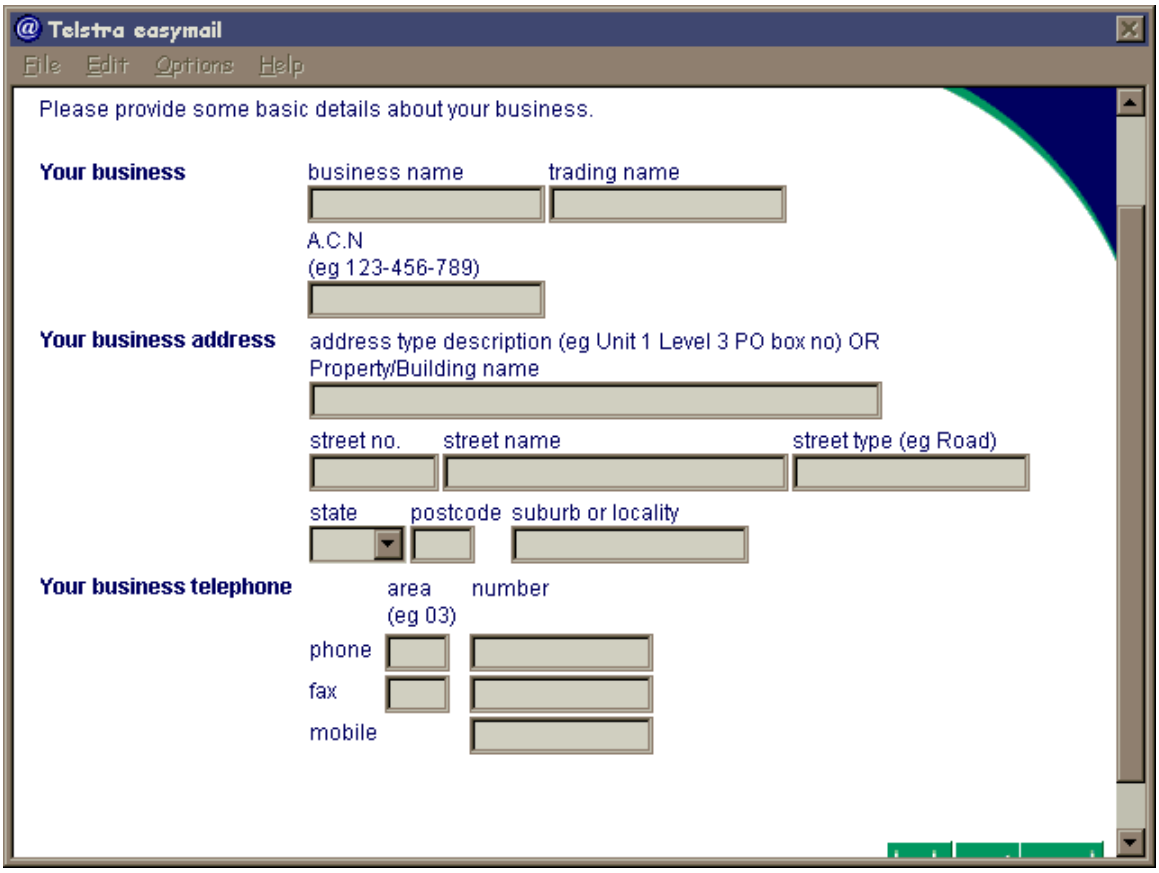
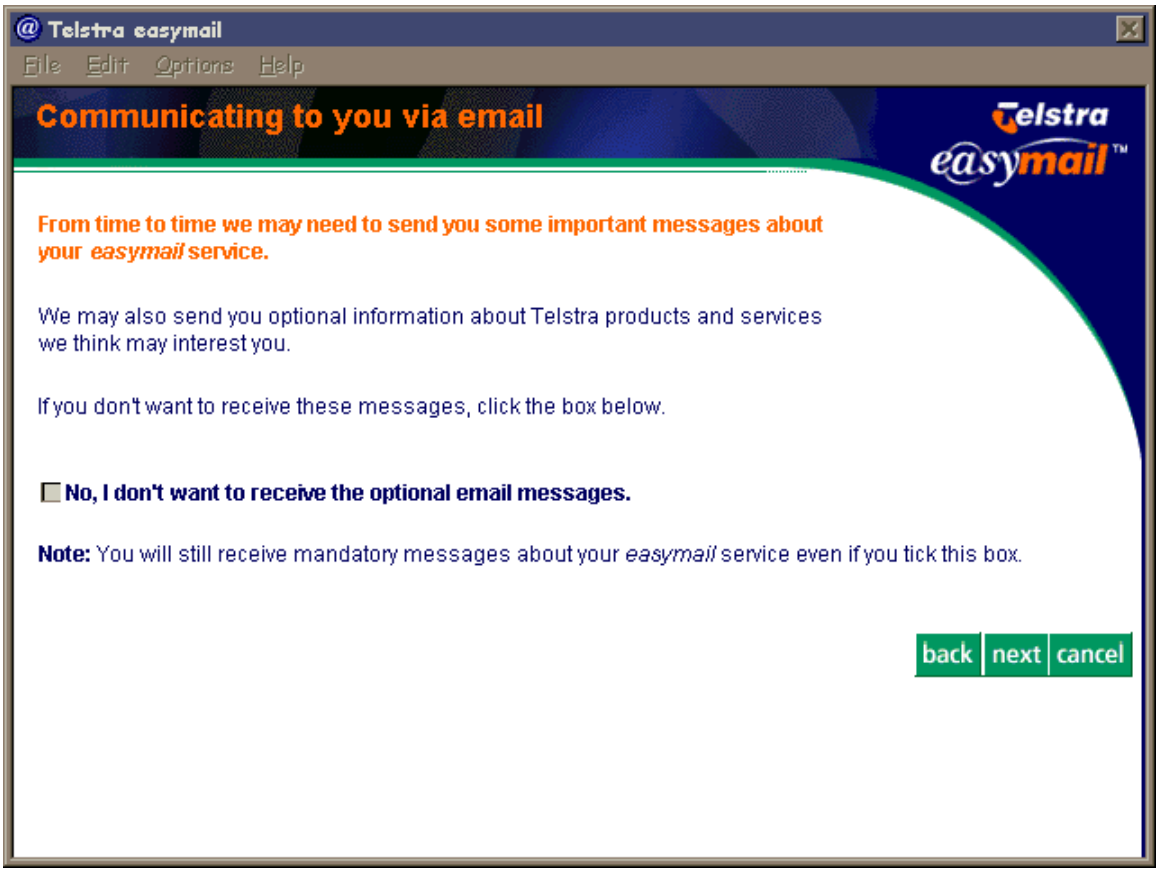


Exhibit 2, Telstra *easymail* Setup Screens



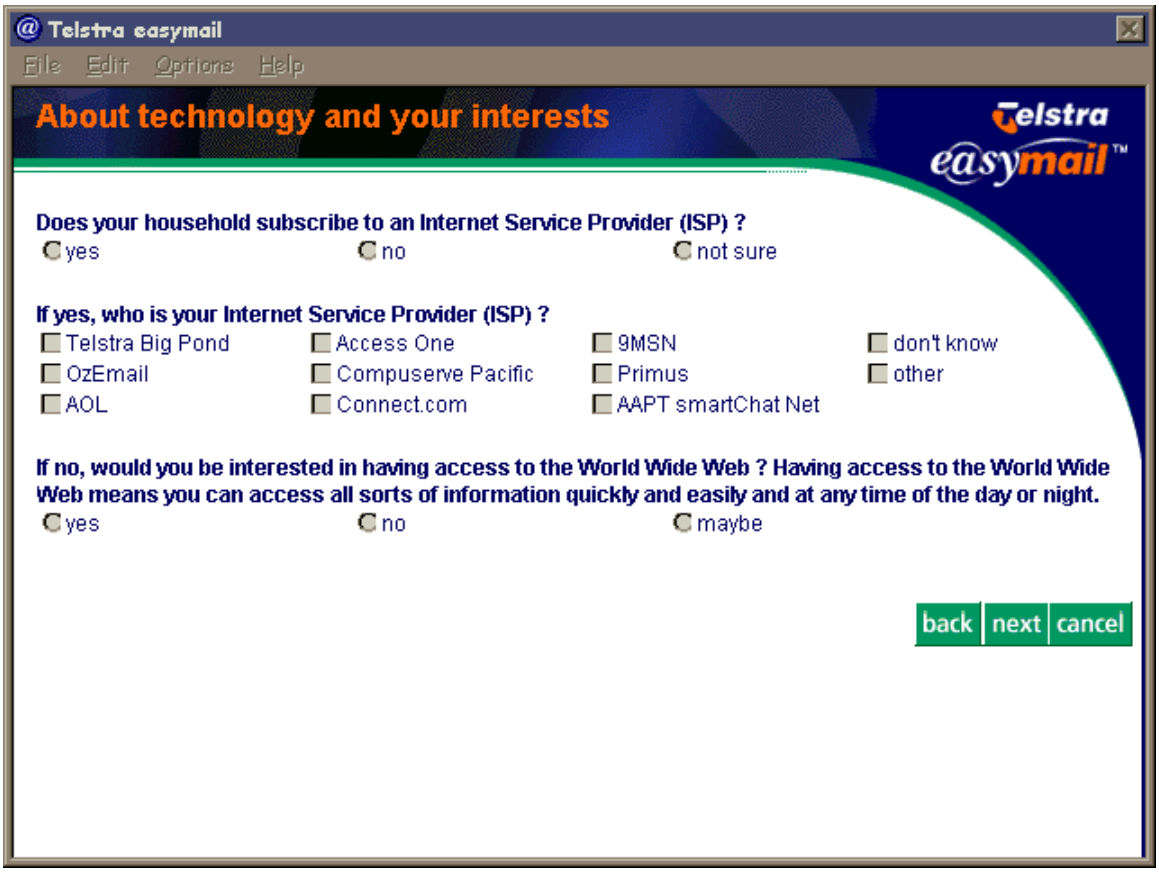
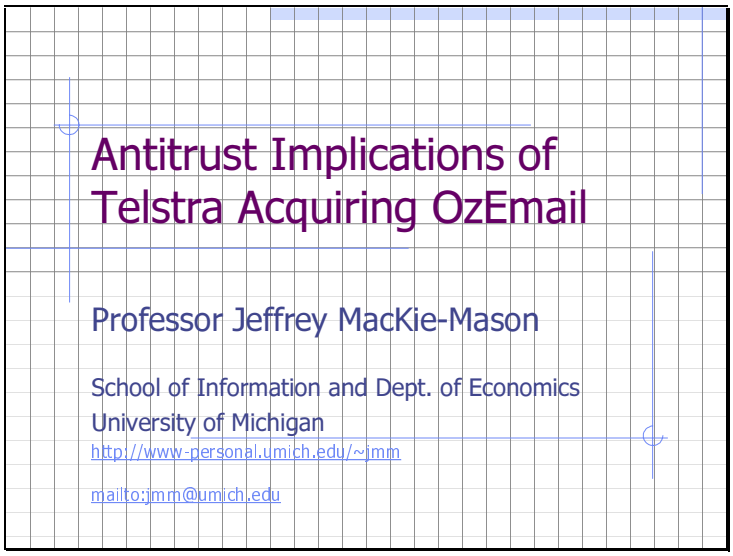
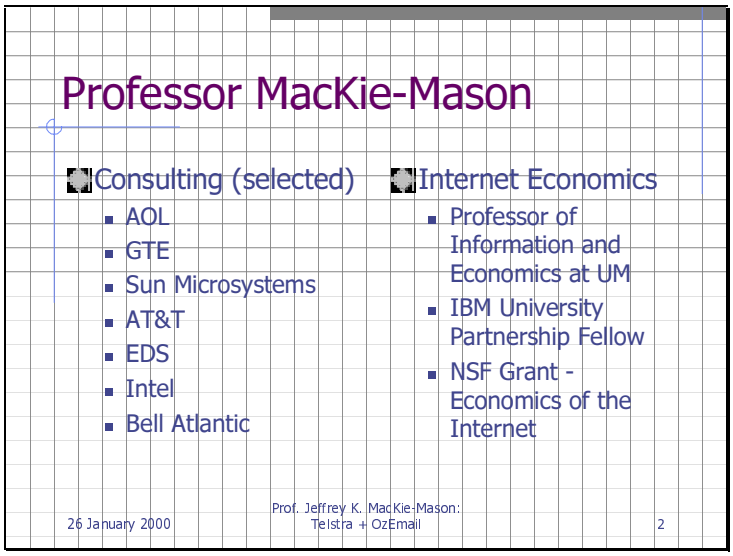

Telstra easymail
File Edit Options Help
About technology and your interests
Telstra easymail
Does your household subscribe to an Internet Service Provider (ISP) ?
yes
no
not sure
If yes, who is your Internet Service Provider (ISP) ?
Telstra Big Pond
Access One
9MSN
don't know
OzEmail
Compuserve Pacific
Primus
other
AOL
Connect.com
AAPT smartChat Net
If no, would you be interested in having access to the World Wide Web ? Having access to the World Wide Web means you can access all sorts of information quickly and easily and at any time of the day or night.
yes
no
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Exhibit 3: Slide Presentation to the ACCC on 26 January 2000





Overview

- Merger will dramatically **increase concentration**
- The "Portal" business model increases concerns about the Telstra's dominance
- **Vertical integration** of Telstra is very important in analyzing this merger
- Concentrated, dominant firm market: several harms follow

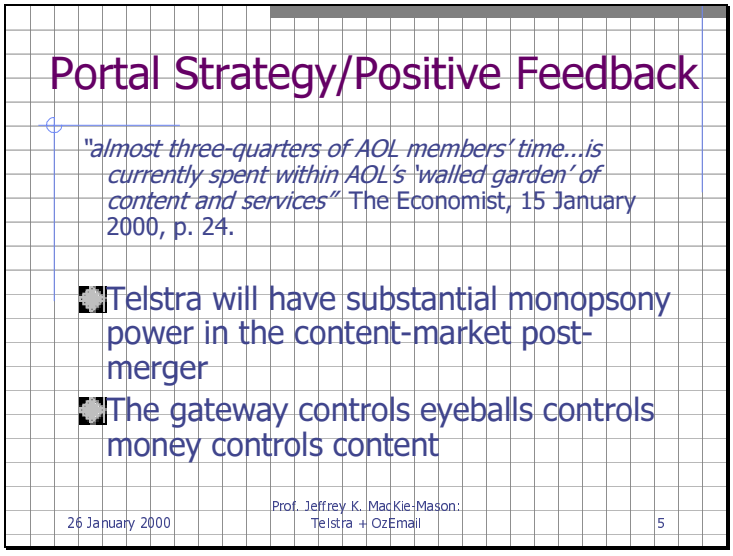
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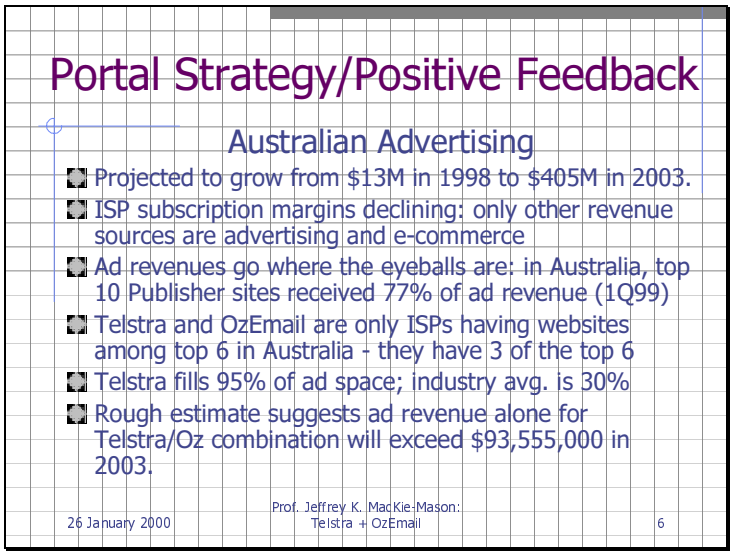
Concentration Measures

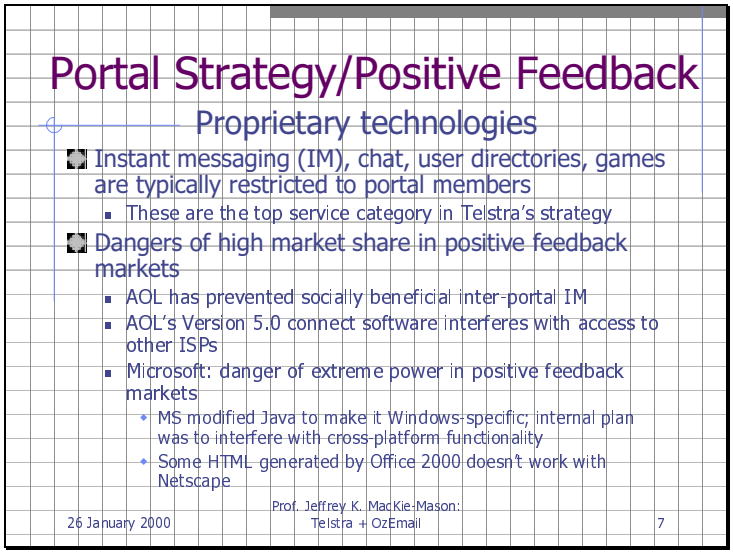
	Pre-Merger	Post-Merger	Δ
CR4	53%	58%	5%
Telstra	24%	42%	18%
HHI	1011	1871	860

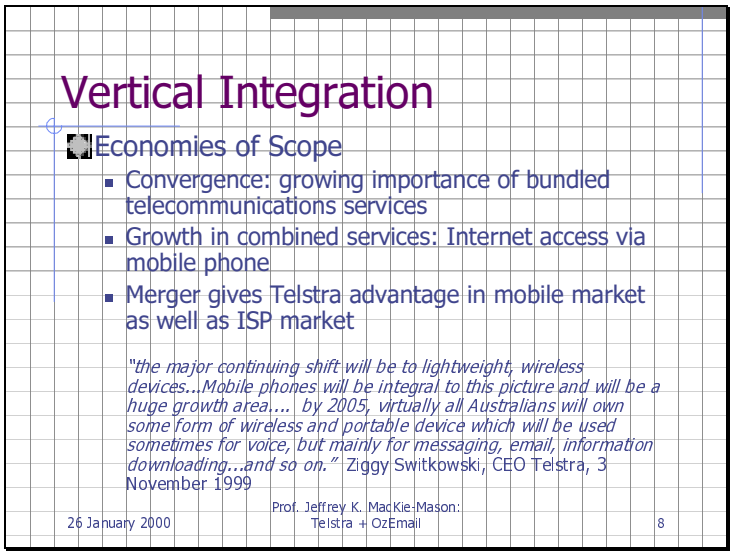
US Merger Guidelines:
"1.51 b) Post-merger HHI between 1000 and 1800 ...Mergers producing an increase in the HHI of more than 100 points in [such markets] potentially raise significant competitive concerns..."
1.51 c) Post-merger HHI above 1800. The Agency regards markets in this region to be highly concentrated. ... Mergers producing an increase in the HHI of more than 50 points in [such markets] potentially raise significant competitive concerns..."

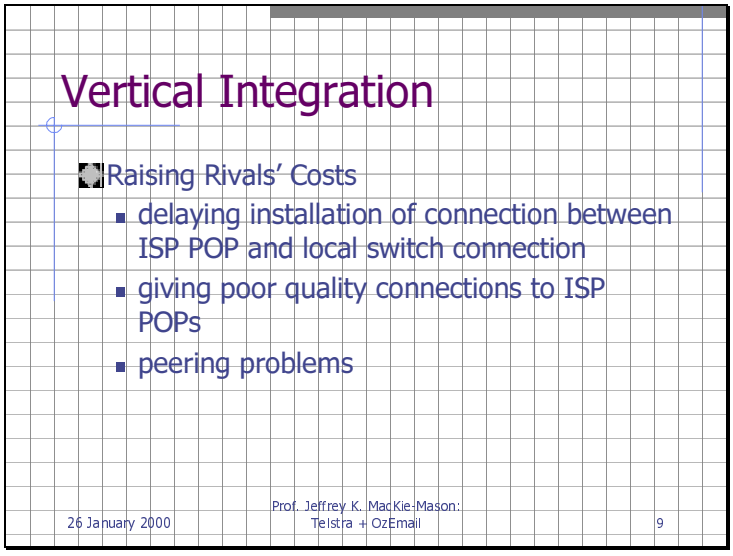
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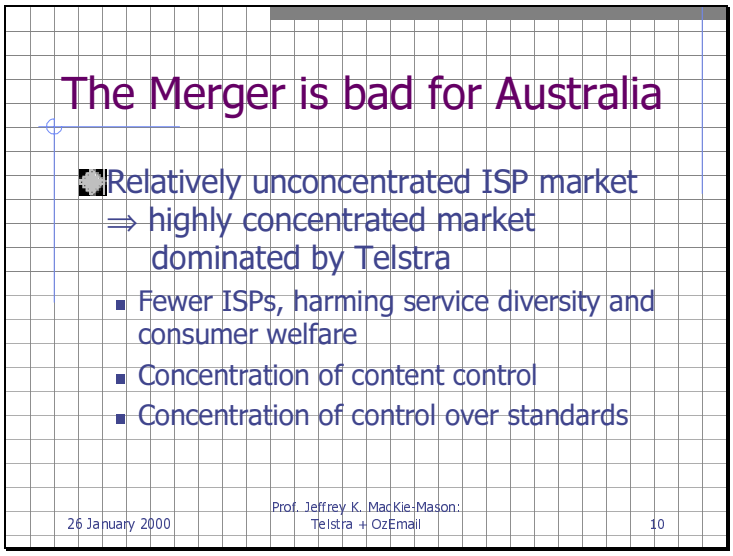

Portal Strategy/Positive Feedback
"almost three-quarters of AOL members' time...is currently spent within AOL's 'walled garden' of content and services" The Economist, 15 January 2000, p. 24.
Telstra will have substantial monopsony power in the content-market post-merger
The gateway controls eyeballs controls money controls content
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Portal Strategy/Positive Feedback
Australian Advertising
Projected to grow from $13M in 1998 to $405M in 2003.
ISP subscription margins declining: only other revenue sources are advertising and e-commerce
Ad revenues go where the eyeballs are: in Australia, top 10 Publisher sites received 77% of ad revenue (1Q99)
Telstra and OzEmail are only ISPs having websites among top 6 in Australia - they have 3 of the top 6
Telstra fills 95% of ad space; industry avg. is 30%
Rough estimate suggests ad revenue alone for Telstra/Oz combination will exceed $93,555,000 in 2003.
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Portal Strategy/Positive Feedback
Proprietary technologies
Instant messaging (IM), chat, user directories, games are typically restricted to portal members
These are the top service category in Telstra's strategy
Dangers of high market share in positive feedback markets
AOL has prevented socially beneficial inter-portal IM
AOL's Version 5.0 connect software interferes with access to other ISPs
Microsoft: danger of extreme power in positive feedback markets
MS modified Java to make it Windows-specific; internal plan was to interfere with cross-platform functionality
Some HTML generated by Office 2000 doesn't work with Netscape
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Vertical Integration
Economies of Scope
Convergence: growing importance of bundled telecommunications services
Growth in combined services: Internet access via mobile phone
Merger gives Telstra advantage in mobile market as well as ISP market
"the major continuing shift will be to lightweight, wireless devices...Mobile phones will be integral to this picture and will be a huge growth area.... by 2005, virtually all Australians will own some form of wireless and portable device which will be used sometimes for voice, but mainly for messaging, email, information downloading...and so on." Ziggy Switkowski, CEO Telstra, 3 November 1999
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Vertical Integration
Raising Rivals' Costs
delaying installation of connection between ISP POP and local switch connection
giving poor quality connections to ISP POPs
peering problems
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The Merger is bad for Australia
Relatively unconcentrated ISP market
⇒ highly concentrated market dominated by Telstra
Fewer ISPs, harming service diversity and consumer welfare
Concentration of content control
Concentration of control over standards
26 January 2000
Prof. Jeffrey K. MacKie-Mason: Telstra + OzEmail
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