

Class 10 social issues

- The Internet and social issues
- Is Inet decreasing people's social contacts?
- Cocooning?

Social Issues

- What are the facts – what do people use Internet for?
- What are the demographics of Internet users?
- Does the Internet foster social contact or reduce social contact
- Social nets – how do they evolve?
- Does spreading use of the Internet create a:
 - utopia – a democratic global community –
 - or
 - dystopia – disjoint isolated individuals

Social Networking

- Facebook: 500M users globally
- Tend to attract 'younger' users, teenagers, college students
- Is social networking a trend - given the youthful user base – are users unusually vulnerable to the next 'new new' thing?
- Does it have long-term possibilities – how can the interest of members be retained?

Social Networking - Facebook

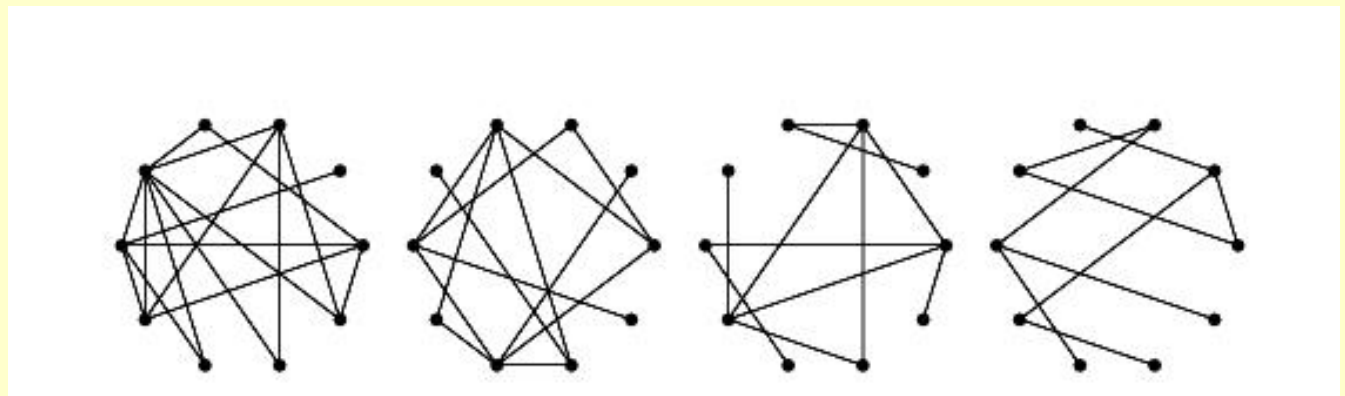
- Launched in February 2004 by Mark Zuckerberg (then aged 19)
- Membership initially limited to Harvard students, but later expanded to include any university student, then high school students, and finally to anyone aged 13 and over
- Most popular website for uploading photos-14 million uploaded daily
- Valuation \$50B

Social Networking - Facebook

- Cost of gaining new customers is practically nothing because users join voluntarily and provide their own content In addition, the cost of running the sites' web servers is relatively low
- Revenue advertising-driven
- On May 24, 2007, Facebook launched the Facebook Platform, which provides a framework for developers to create applications that interact with core Facebook features. Facebook markup language was introduced, which was used primarily to customize the "look and feel" of applications that developers created.
- Enabled Facebook itself to launch several new applications that tightly integrated with the Facebook system
- Concerns expressed regarding the use of Facebook as a means of surveillance and data mining
 - The policy states *"We may use information about you that we collect from other sources, including but not limited to newspapers and Internet sources such as blogs, instant messaging services and other users of Facebook, to supplement your profile."*

Some facts about social networks

- Social network as a graph: nodes, edges
- Node degree: how many edges connected to this node
- Diameter: max # of edges need to be traversed to connect any two nodes (3, 4, 5, 7 below)



A bit of history of network dynamics...

- The random topology idea of the 1950s
- The “six handshakes” principle (1929)
- The “small world” hypothesis:
 - most nodes are not neighbors of one another, but most nodes can be reached from every other by a small number of edges.
 - the typical distance L between two randomly chosen nodes (the number of steps required) grows proportionally to the logarithm of the number of nodes N in the network
 - In the context of a social network, this results in the small world phenomenon of strangers being linked by a mutual acquaintance.
 - the connectivity of the Internet, Wikipedia, and gene networks all exhibit small-world network characteristics

More recent research...[Barabasi]

- Power laws: e.g. probability that a webpage has k links is approx. $k^{-\gamma}$
- This is also true for network of actors linked by movies or network of authors linked by co-authored papers
- Known as *scale-invariance* of networks

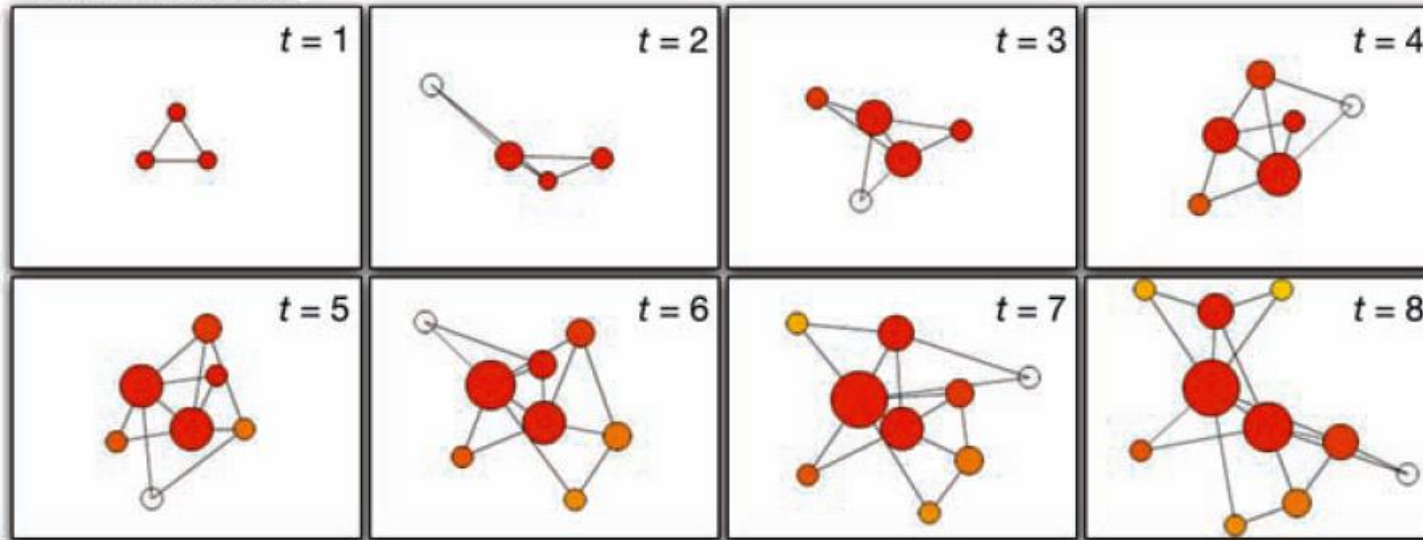
Dynamics of social networks

Three laws:

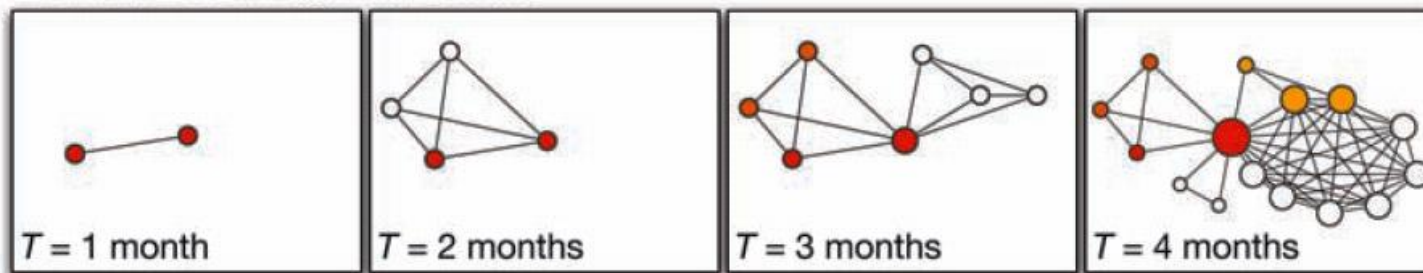
- Diameter shrinkage: as the graph grows, the diameter decreases: because new nodes are mainly connected to existing nodes
- Densification: after a while fewer nodes and more connections are added
- How are edges added: the probability of connecting to a node is proportional to the degree of that node! (i.e. “the rich get richer” model). Known as Preferential Attachment (PA) [Barabasi]

Scale-free growth and power law

Scale-Free Model



Scientific Collaboration Network



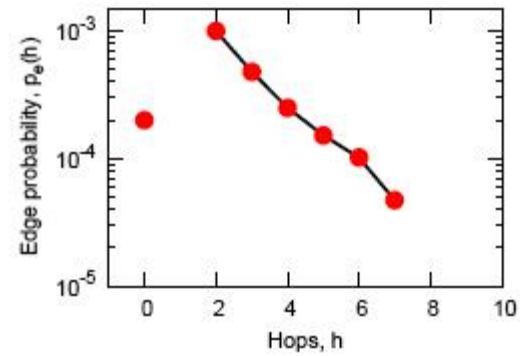
- Network grows according to the Preferential Attachment law
- Resulting graph obeys the Power law with $\gamma=3$

Popular social nets obey these laws

- Flickr, Answers, Linked show shrinking: diameter reaches 10 at 50K nodes and then decreases to 7.5
- They also obey the PA (LinkedIn is a special way) [Leskovec et al. 2008 *Microscopic Evolution of Social Nets*]

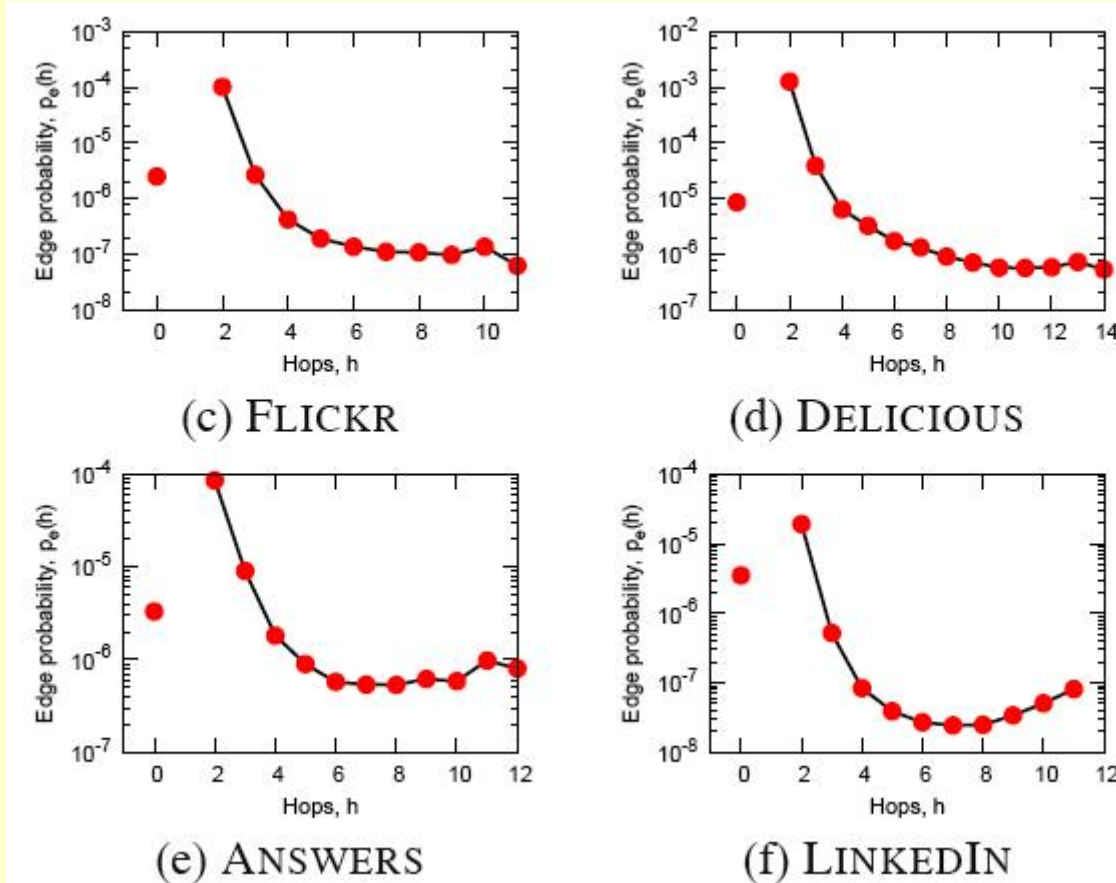
But whom do we connect to?

- PA doesn't say



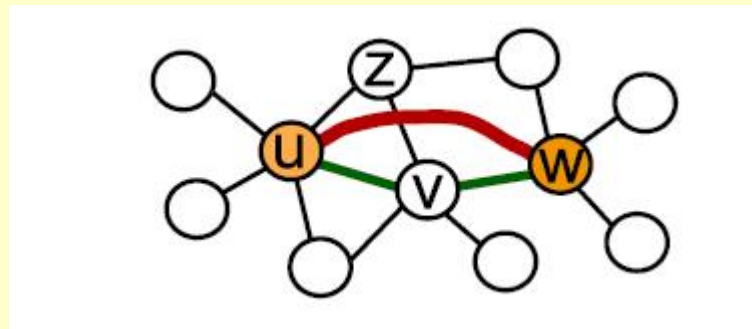
(b) PA

- But in fact we connect to friends of friends:



- Most new edges close triangles

Closing a triangle



- u creates an edge by selecting v , which then selects w to which edge (hop) (u, w) is created

Social Computing – Real- and Virtual-life: Example Second Life

- Second Life (SL) is an Internet-based virtual world launched in 2003
- A downloadable client program called the Second Life Viewer enables its users, called "Residents", to interact with each other through motional avatars, providing an advanced level of a social network service combined with general aspects of a metaverse.
- Residents can explore, meet other Residents, socialize, participate in individual and group activities, create and trade items and services
- Second Life has its own economy and a currency referred to as Linden Dollars (L\$)
- Estimated that Second Life's 2007 GDP was between \$500 million and \$600 million

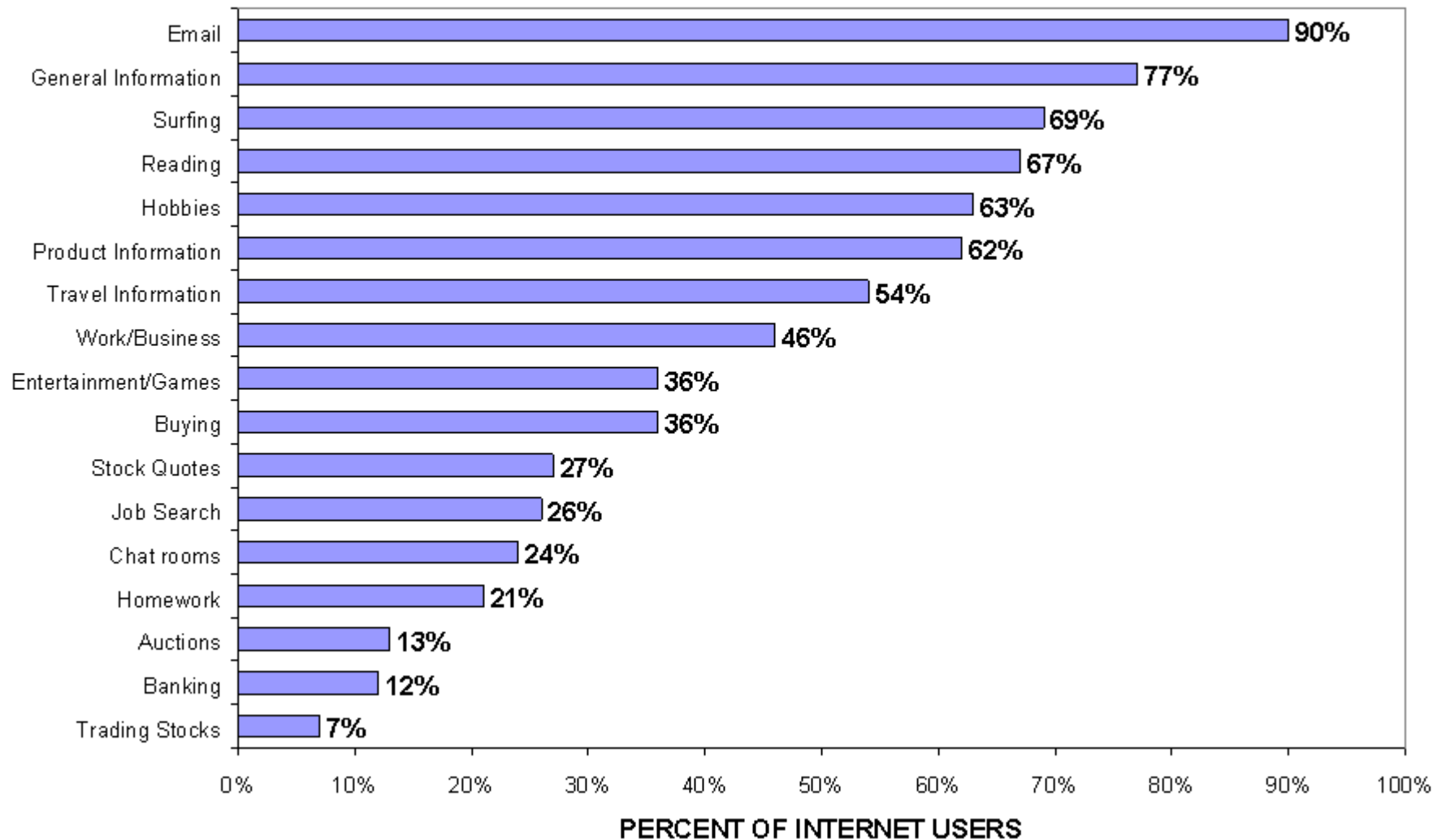
Social Computing – Real- and Virtual-life: Example Second Life

- Second Life is sometimes referred to as a game, however, it does not have points, scores, winners or losers, levels, an end-strategy
- Approximately 13 million accounts have been registered
 - no fee for registering an account or participating in *Second Life*, however registration of "payment information" (i.e. a credit card) is mandatory in order to participate in some functions, such as owning land
- Blurs the boundary between real and fictitious worlds
 - For example, you can buy “real estate” with virtual money but you can also visit the virtual store of a real world company and buy real products
- What are the implications/projections of such an “application”
- Are there innovative/beneficial ways to use it?

Stanford Report (SIQSS, 2002)

- In the US, 43% of households are connected (US behind Canada @ 67%, some Asian countries, some EU countries)
- 55% have Internet access
- Email the most common activity
- Searching for general information 77%
- > 33% some form of entertainment
- Chat rooms used mostly by the young (<25)
- E-commerce. E-banking, share trading – only 15% (much more in Canada)

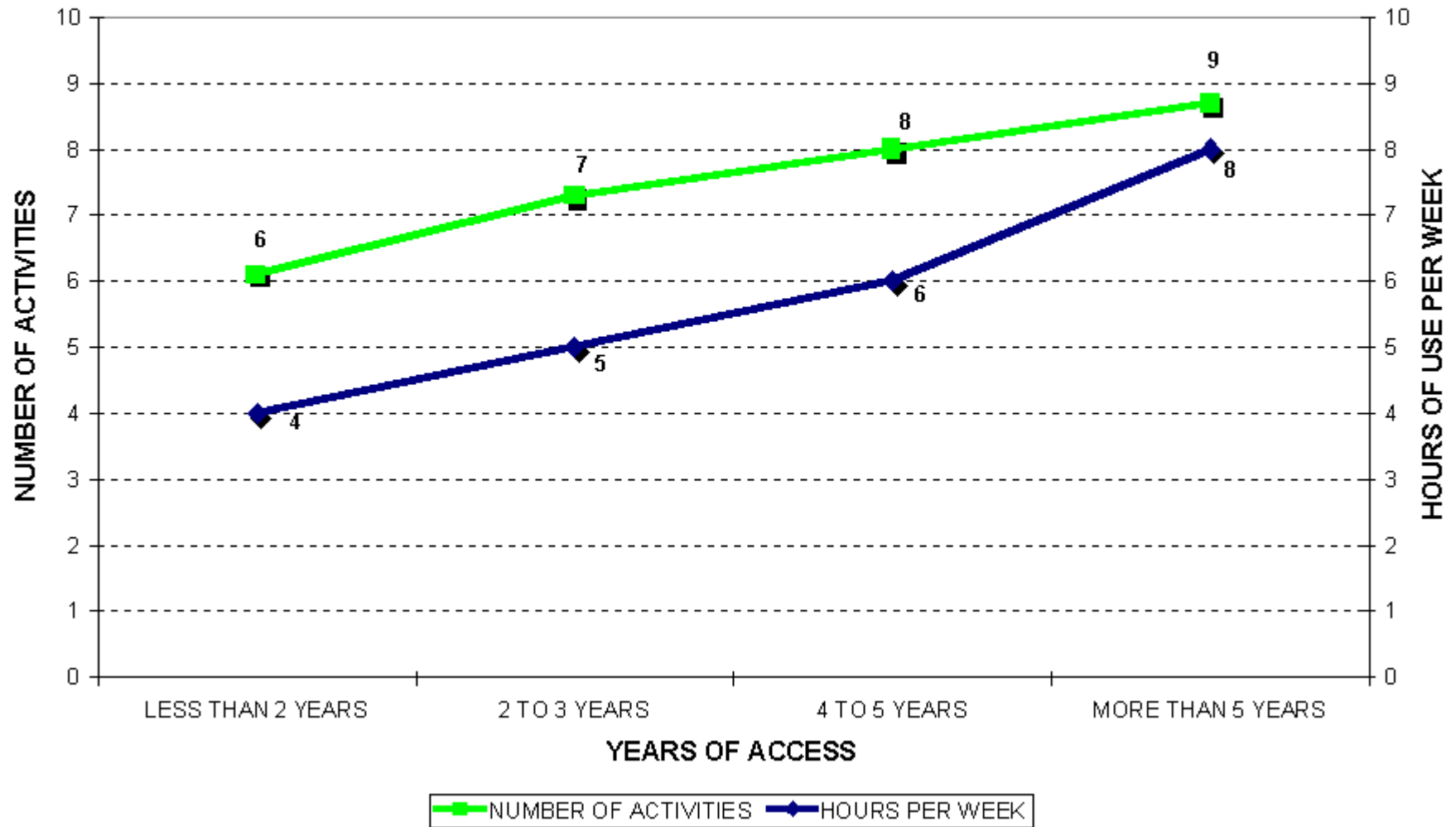
WHAT USERS DO ON THE INTERNET



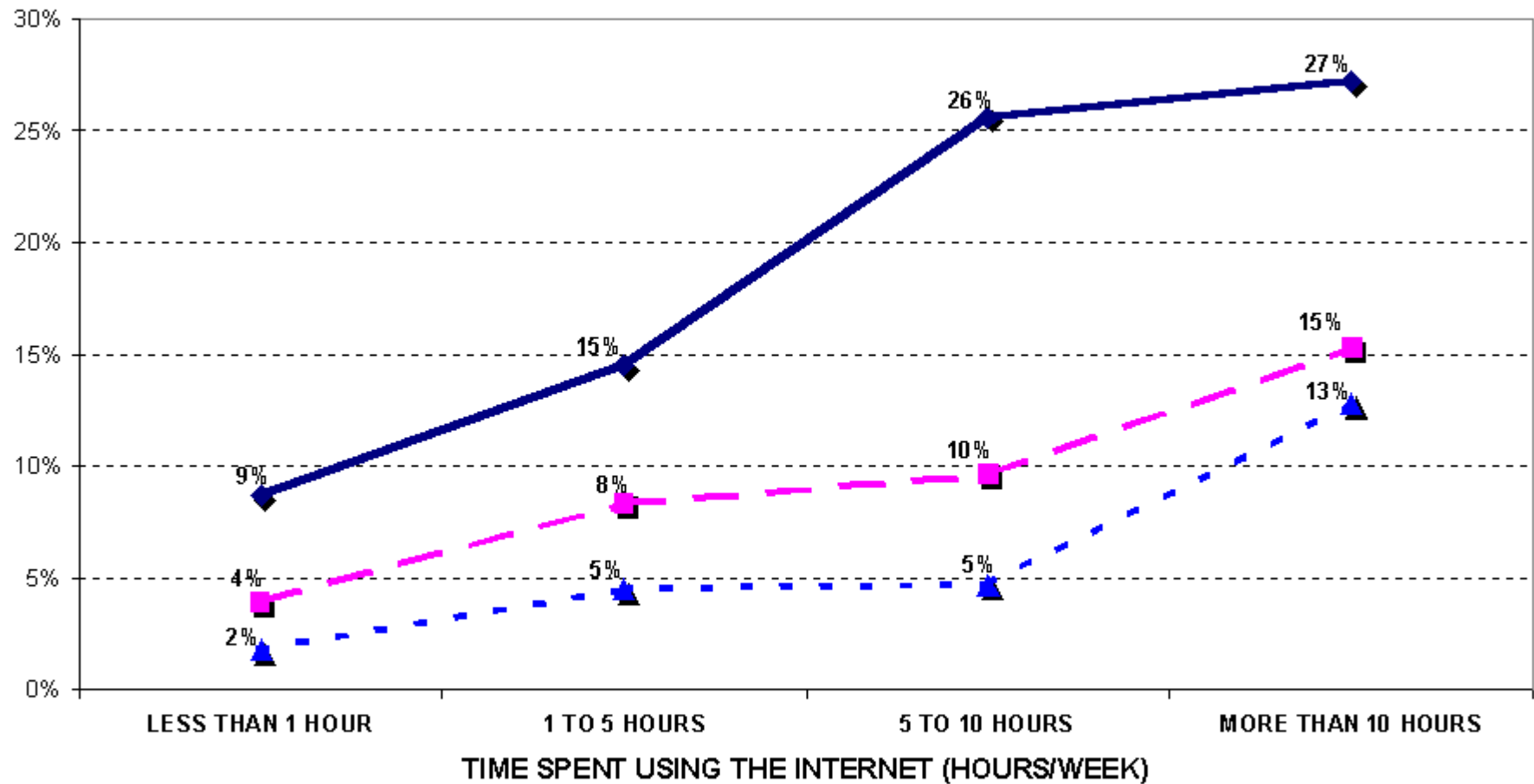
Social Issues and the Internet

- The longer people are on the Internet, the more they use it
- The more people use Internet:
 - The more they lose contact with their social environment
 - Or is it a different form of contact?
 - For example do people who are socially awkward communicate more because of e-mail than they would do without it
 - The less they use traditional media
 - E.g. TV *and especially newspapers*
 - The more time they spend working at home, and even at the office – longer working hours
- Is working on a computer more isolating than reading a book – an activity that is usually applauded?

AVERAGE HOURS OF USE AND NUMBER OF ACTIVITIES BY YEARS OF ACCESS

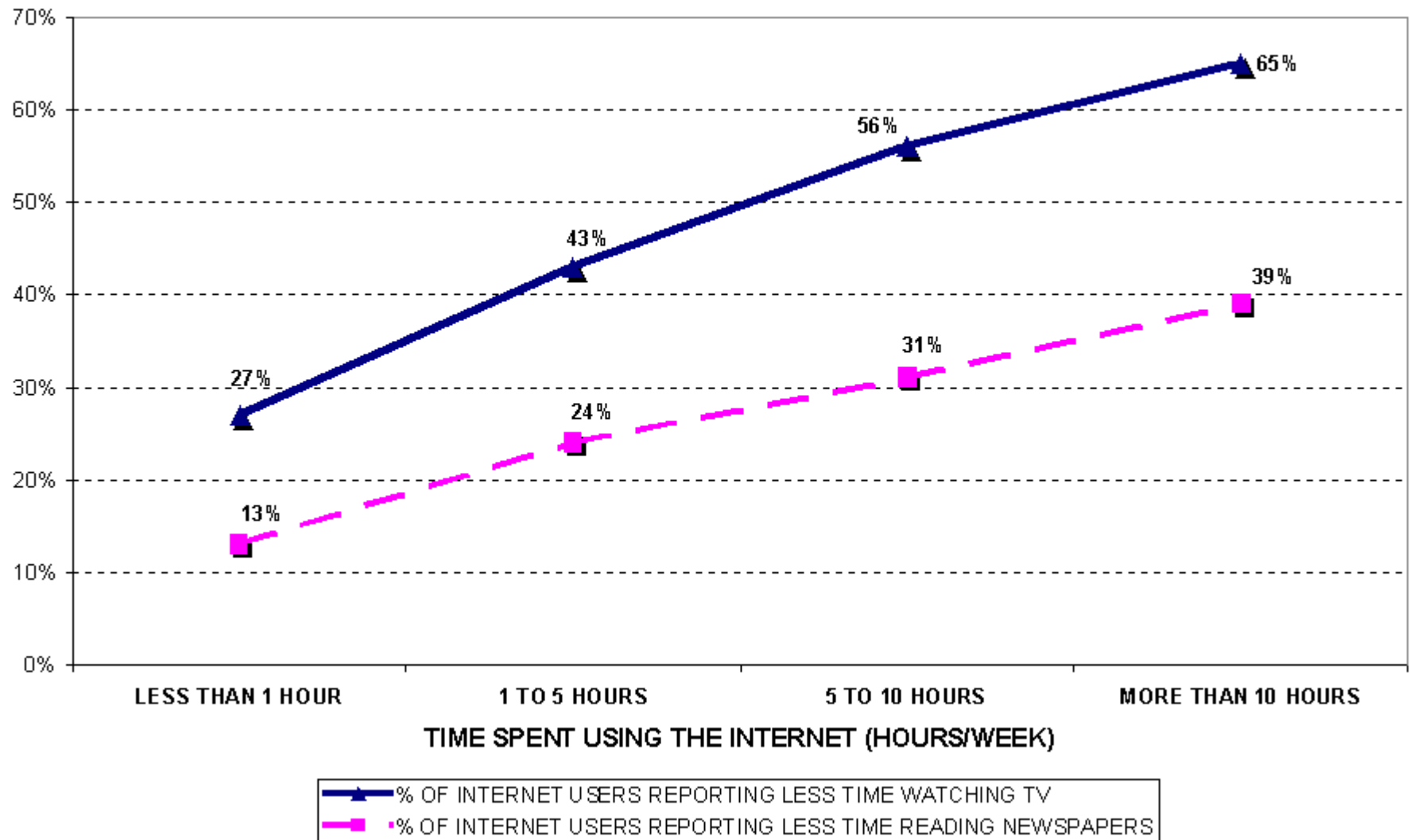


SOCIAL ISOLATION INCREASES



- ◆ % OF INTERNET USERS REPORTING LESS TIME TALKING TO FRIENDS AND FAMILY OVER PHONE
- % OF INTERNET USERS REPORTING LESS TIME WITH FAMILY AND FRIENDS
- ▲ % OF INTERNET USERS REPORTING LESS TIME ATTENDING EVENTS OUTSIDE OF HOME

INTERNET USERS DESERT THE MASS MEDIA



Pew 2009 Report on Social Isolation and New Technology

- Core discussion network (CDN) as a base concept
- CDN = network of people with whom you discuss important matters
- the GSS 2006 report by McPherson, Smith-Lovin & Brashears: CDNs have shrank and become less diverse since 1985.
- Attributed to Internet and mobile phone (IMPh) growing use as a means of communication

Importance of CDN

- Influential in opinion formation
- Larger CDNs lead to more trust and tolerance
- Cope better with daily troubles and trauma, tend to be physically and mentally healthier

Are Americans more socially isolated because of IMPh?

- Small to modest downward trend in the size of CDN. 12% $|CDN| = 0$; 6% of adults $|CDN| = 0$
- Mean $|CDN|$ dropped by a third, i.e. by one confidant
- Diversity has declined

...but NOT because of growing IMP
use:

- [methodology that holds other factors (education, gender) constants= in analysing relationships between technology use and network size was used]
- |CDN| 12% larger for cellphones users, 9% larger for people who share photos on-line, 9% for IM users

- 45% discuss important matters with someone other than family member, but 55% IMPh
- Avg 37% of IMPh rely exclusively on partner/spouse for CDN, while 59% do so in general population
- Photo uploaders are 61% more likely to have discussion partners across political lines
- Bloggers increase likelihood of cross-race in CDN 95% , frequent Inet users at home – 53%
- Technology users have larger and more diversified core networks

Is Inet use leading to less face-to-face contact with closest or local social ties?

- Avg face-to-face contact with a connection in CDN 210 days/yr
- Mobile phone contact 195 days
- Text/SMS 125 days
- Email 72, IM 55, social nets 39
- Inet technologies are used as much for local contact as they are for global

- 71% of social network users list a CDN member as a friend
- Highest use of soc net to maintain CDn in 18-22 yrs old

Is Inet use related to less interaction with neighbours/lesser level in local voluntary groups?

- IMPH are as likely as general population to know some of their neighbours. BUT users of soc net are 30% less likely
- IMPH are as likely to talk to their neighbour at least once a month
- Inet users are 26% less likely to rely on neighbours for small services, but are as likely to help neighbours with the same activities
- ...are more likely to belong to a neighbourhood volunteer group

“cocooning”: withdrawal from public spaces

- Public spaces = parks, libraries, community centres, cafes, restaurants
- Inet users are 42% more likely to visit a public park or plaza, 45% - a café
- Significant proportion of people accessed Inet while at these places

CDN diversity

- Users of Inet and of soc net have CDNs that are 20% more diverse

Internet effects on children

- A recent study by the APA www.apa.org/releases/youthwww0406.html states that the effects are both good and bad
- Examples of BAD effects: on-line boards normalize and encourage self-injurious behaviors
- Examples of GOOD effects: in under-privileged children (\$15K median income, mostly AA, mostly single-parent): 30 min/day Inet access resulted in higher test scores and GPAs 1 year into the study
 - Attributed mostly to improved reading skills

Internet Addiction

- 13.7 percent found it hard to stay away from the Internet for several days at a time
- 12.4 percent stayed online longer than intended very often or often
- 12.3 percent had seen a need to cut back on Internet use at some point
- 8.7 percent attempted to conceal non-essential Internet use from family, friends and employers
- 8.2 percent used the Internet as a way to escape problems or relieve negative mood
- 5.9 percent felt their relationships suffered as a result of excessive Internet use
 - Stanford University School of Medicine 2006