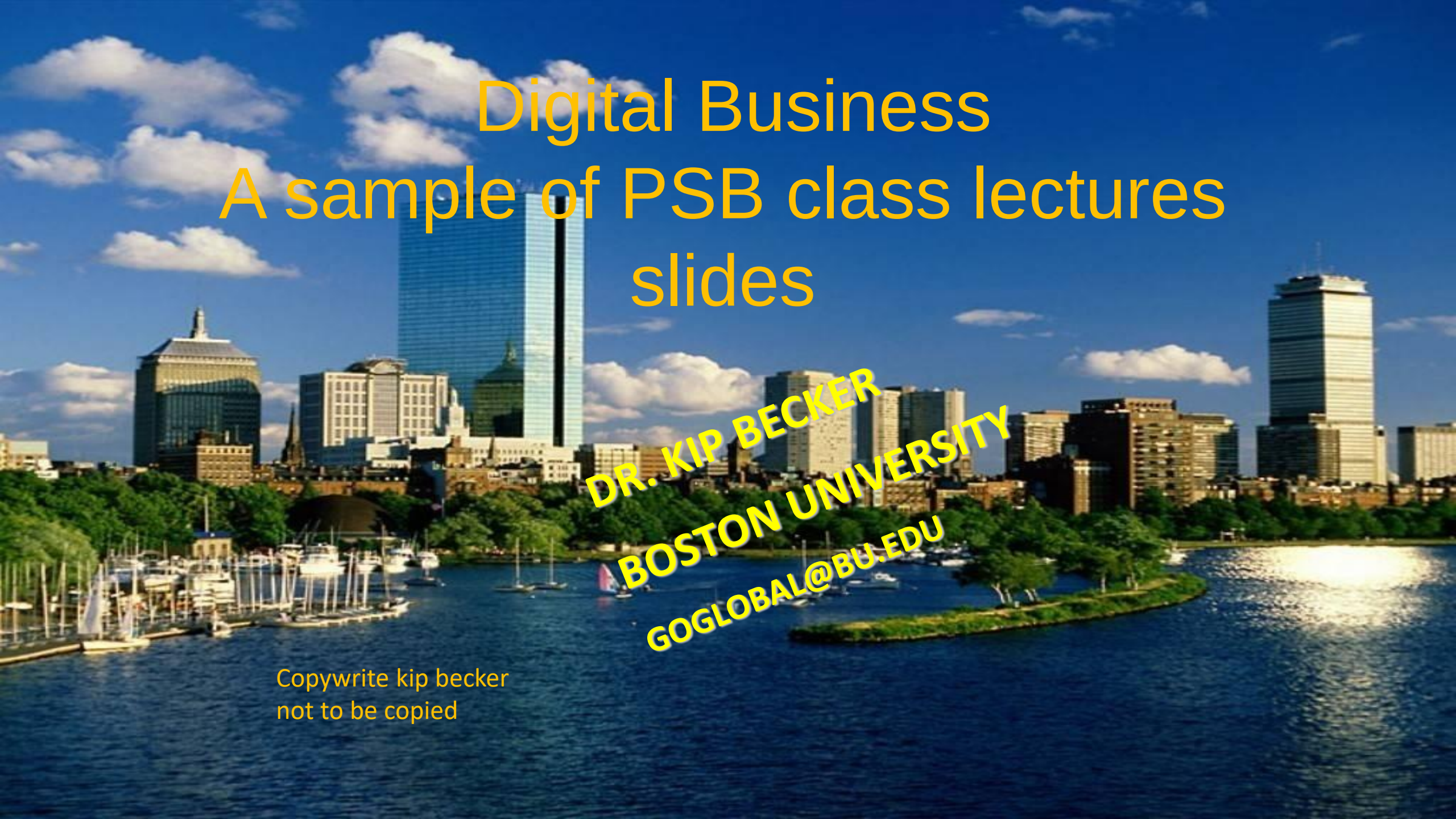
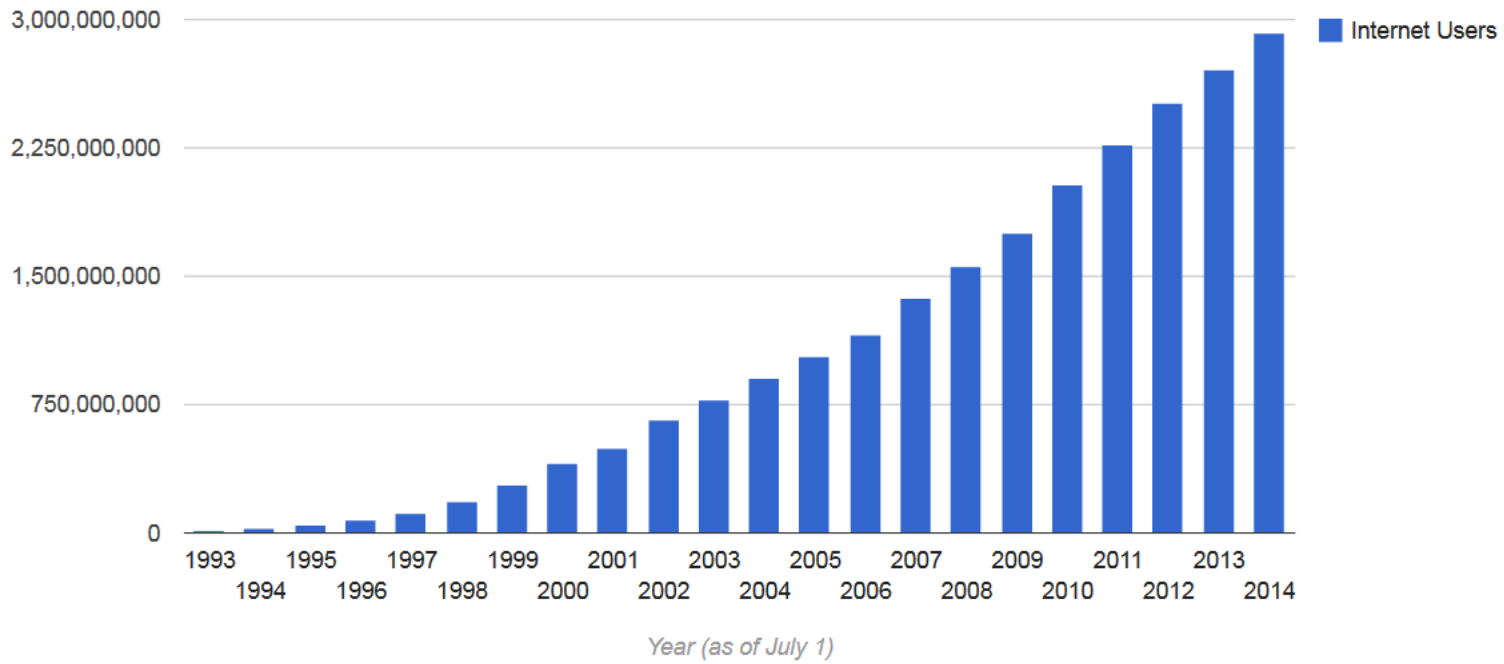


Digital Business
A sample of PSB class lectures slides

DR. KIP BECKER
BOSTON UNIVERSITY
GOGLOBAL@BU.EDU

World Internet Users

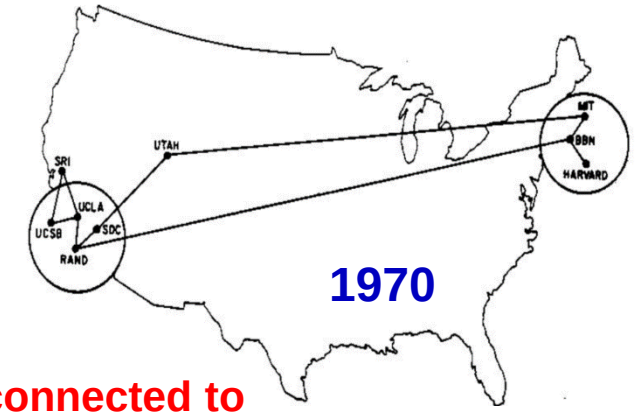
The first billion 2005, **Second 2010**, **Third 2014**

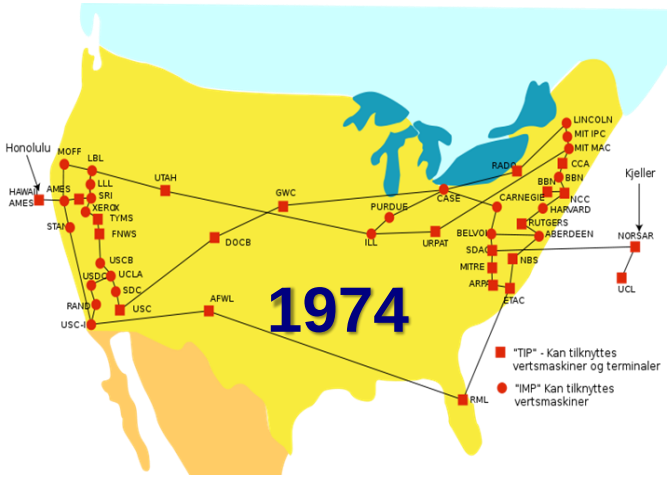


http://www.internetlivestats.com/internet-users/#trend

ECommerce Transaction types

- business -to- business
- business -to- customer
- business - to - government
- Individual - to- government
- Customer -to- business
- Customer -to- customer
- Peer* -to- peer

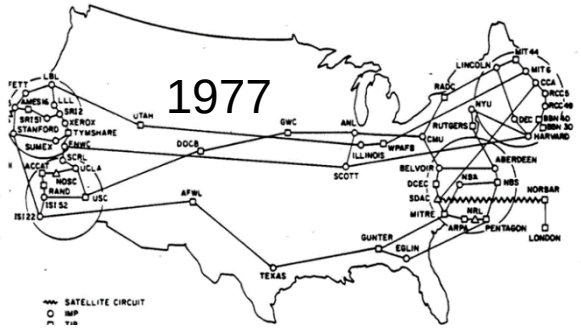




1969 Stanford & UCLA connected to what would become the Internet.

WHY CARE? WHY INVENT WEB ?

ARPA (Advanced Research Projects Agency)



TO DEVELOP multiuser Platforms of redundant information

Wide Area Network (WAN)

LET'S MEET "INVENTORS"

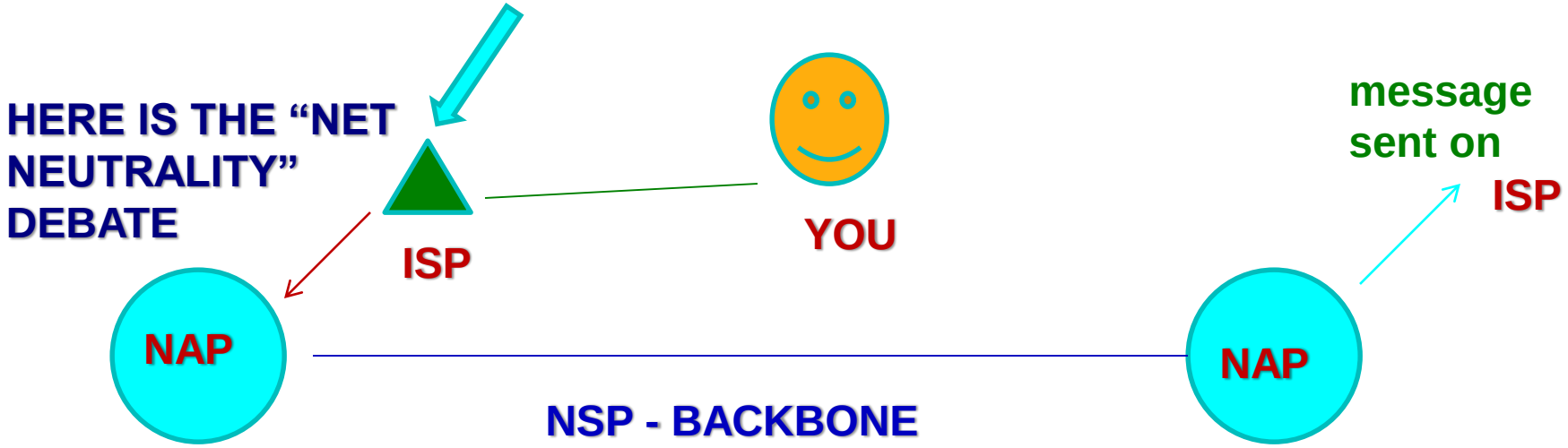
Clinton – Gore, 1997

The Initial U.S. Policy For Internet Development

1. Private sector should lead
2. Governments should avoid undue restrictions on EC
3. Where government involvement is needed, its aim should be to support and enforce a predictable minimalist, consistent and simple legal environment for commerce (intel protection, fraud etc.)
4. Governments should recognize the unique qualities of the Internet
5. Electronic commerce on the Internet should be facilitated on a global basis

INTERNET
A NETWORK OF NETWORKS

- **ISPs**
  - INTERNET SERVICE PROVIDERS
- **NAPs**
  - NETWORK ACCESS POINTS/ PACIFIC BELL NAP IN SANFRANCISCO & AMERITEC NAP CHICAGO
- **NSPs**
  - “BACKBONE” NETWORK SERVICE PROVIDERS\ MCI, PSINET ETC.



Early Networking Stage technologies not compatible

ARPANET: THE ABILITY FOR COMPUTERS TO "TALK" TO EACH OTHER

2 Options

1. Allow groups to have network technology best suited to them – not flexible
2. Have a Standard

World of : Cats versus Dogs

Individuals/Companies wanted a network technology best suited to them.
Industrial focus "*Kill off Competition*"
NOT FLEXIBLITY

RESEARCH CENTERS

Looking for solutions not pushing agenda

@ CERN: **Tim Berners-Lee / Kahn**

TCP Standardization

HARD/SOFTWARE To share access of data

1. **Unique identification each computer**

   network of millions of computers - thousands networks..

   Important each computer be uniquely identified

   Internet Protocol (IP) address. **198.108.95.145**

2. **Human-friendly addressing** ↑

   Domain Name System(DNS) gave address recognizable letters & words instead of IP address. http://www.**bu.edu/*GoGlobal***

3. **Packet Switching**

   Remedy delays associated unequally sized data transfers, instead of transferring files in their entirety, whole files broken into data packets before transferred over network

4. **Routing**

   Dedicated, special-purpose computers which serve as an intermediary between networks. Route packets efficiently through networks and are building blocks of the internet. Packets used **TCP software insures safe delivery of packets**

INITIAL 7 ORIGINAL DOMAINS

- IDN: support for internationalized domain names (IDN)
- DNSSEC: presence of DS records for Domain Name System Security Extensions

Name	Entity	Notes	IDN	DNSSEC
.com	commercial	This is an open TLD; any person or entity is permitted to register. Though originally intended for use by for-profit business entities, for a number of reasons it became the "main" TLD for domain names and is currently used by all types of entities including nonprofits, schools and private individuals. Domain name registrations may be successfully challenged if the holder cannot prove an outside relation justifying reservation of the name, to prevent "squatting".	Yes	Yes
.org	organization	This is an open TLD; any person or entity is permitted to register. Originally intended for use by non-profit organizations, and still primarily used by some.	Yes	Yes
.net	network	This is an open TLD; any person or entity is permitted to register. Originally intended for use by domains pointing to a distributed network of computers, or "umbrella" sites that act as the portal to a set of smaller websites.	Yes	Yes
.int	international organizations	The .int TLD is strictly limited to organizations, offices, and programs which are endorsed by a treaty between two or more nations. However, there are a few grandfathered domain names that do not meet these criteria.	No	No
.edu	educational	The .edu TLD is limited to specific educational institutions such as, but not limited to, primary schools, middle schools, secondary schools, colleges, and universities. In the US, its usability was limited in 2001 to post-secondary institutions accredited by an agency on the list of nationally recognized accrediting agencies maintained by the United States Department of Education. This domain is therefore almost exclusively used by US colleges and universities. Some institutions that do not meet the current registration criteria have grandfathered domain names.	No	Yes
.gov	governmental	The .gov TLD is limited to governmental entities and agencies in the US.	No	Yes
.mil	US military	The .mil TLD is limited to use by the United States military.	No	Yes

WHY HAVE PEOPLE WANTED SOCIAL CONNECTION

HERE THE “ACTION” IS

CONNECTION = PROSPERITY

WHY BE THERE ?

2/3 OF THE GLOBAL INTERNET POPULATION VISIT SOCIAL NETWORKS

3 OF 4 AMERICANS USE SOCIAL TECHNOLOGY

Forrester, The Growth Of Social Technology Adoption, 2008

Social Networks
BOADER APPLICATIONS

1. VERTICAL SOCIAL NETWORKING
2. CORPORATE CONSUMER INFORMATION
3. SHIFT FROM OUTBOUND TO INBOUND COMMUNICATIONS

OUTBOUND VS INBOUND

Interruption Based

PERMISSION BASED
NOT INTERRUPTION BASED

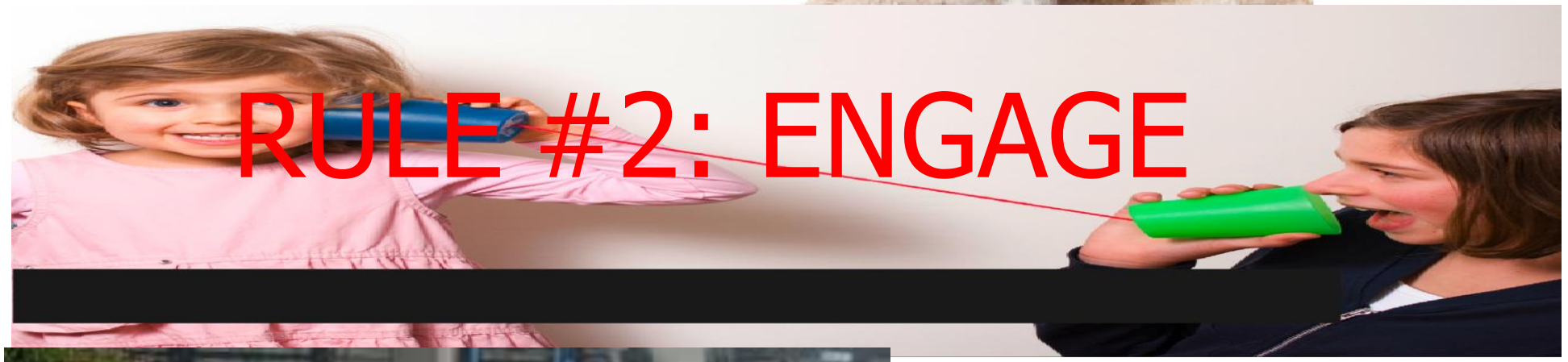
Outbound Marketing

- Telemarketing
- Trade shows
- Direct mail
- Email blasts
- Print ads
- TV/radio ads

INBOUND MARKETING

SEO
BLOGGING
SOCIAL MEDIA
DATA MINING
TWITTER RELATIONSHIPS
DRAWING ATTENTION

RULE #1: LISTEN



RULE #3: RESPECT

A CHANGING BUSINESS ENVIRONMENT

MASS PRODUCTION
Engineering Model
Make it → Sell it (Engineering Demand Model)

Then Came 70s

Early Information Importance & 4Ps
LEAN JAPANESE MODEL
Just In Time (JIT), TQM, 6 SIGMA,
Make it with – Marketing/ Consumer Research/ Modify

INTERNET/ INFORMATION AGE

Today's Competition

Create VALUE through → Information and–> Innovation

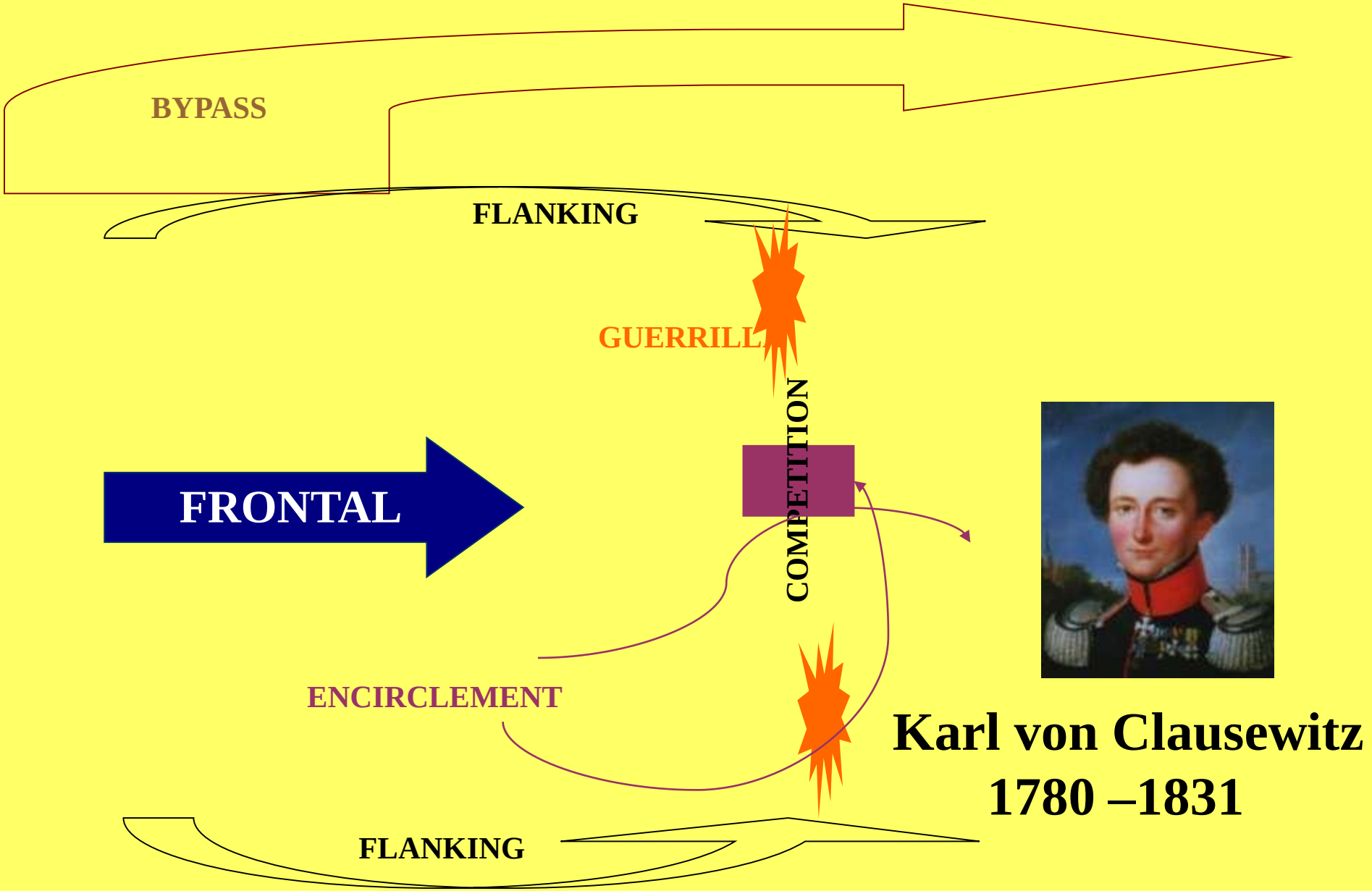
Consumer Driven – Consumer Power

Looking @ Old Marketing 4 Ps Mix	Internet EnabledMix
Price	
Place	
Promotion	
Product	

4 Ps Concept Designed in 60s
INTERNET WORLD HAS CHANGED
and it's not going back

How 4 Ps and Corporate Control
have been Shattered

DEFINING THE DIGITRAL STRATEGY



Karl von Clausewitz
1780 –1831

DISRUPTIVE TECHNOLOGY 6 Ds

KODAK

1. DIGITALIZATION — No film
2. DECEPTION — Will not effect us
3. DISRUPTION — Small to Large
4. DEMONETIZATION — No longer pay develop
5. DEMATERIALIZATION — Phone cameras
6. DEMOCRATIZATION — Built in All have

1996 Kodak 14,000 Employees **28$ billion Market Value** **2012 bankruptcy**
2010 INSTAGRAM, **2012 Facebook 1$billion** **13 Employees**

Diamandis and Kotler, Bold, Simon & Schuster, 2015

Digital and Physical Security

THREE TYPES OF SECURITY DIMENSIONS

Duplicate Physical World

1. Infrastructure security (hard/software)

2. Transactions security (web/moving)

3. Data/information security (message itself)

9

PAYMENT SECURITY NEEDS
4 FACTORS

1. AUTHENICATION

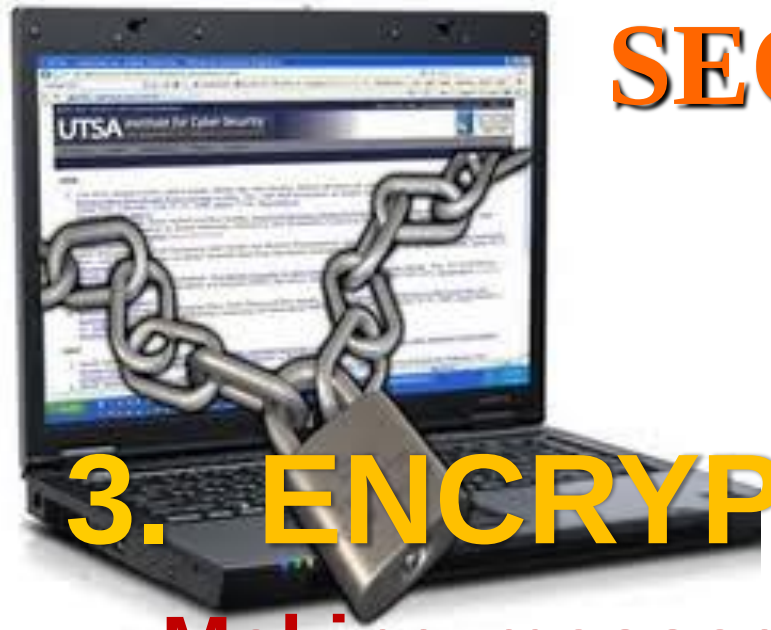
Way to verify user's identity before payments are made

2. INTEGRITY

Ensuring that information will not be accidentally or maliciously altered or destroyed during transmission

SECURTY NEEDS

4 FACTORS



3. ENCRYPTION

Making messages indecipherable except by those with authorized decryption key

4. NON-REPUDIATION

Merchants protection - customer's unjustifiable denial of placed orders

customers protection -against merchants'

DATA SECURITY ENCRYPTION

1. PRIVATE/SECRET KEY

Some believe penetrable. Maybe secure “enough”

2. PUBLIC KEY

Most popular algorithm is **RSA (Rivest, Shamir and Adelman)** Various key sizes (e.g. 1,024 bits)
Most secure - Never known to be broken (to date)

Managers Need to Know WHO IS Hacking

Hacker: intends to gain unauthorized access systems

Cracker: Hacker criminal intent

Cybervandalism: Intentionally disrupting, defacing or destroying a Web site

HATS

- **White hats**
- **Black hats**
- **Grey hats**