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**ICT- REVOLUTIONIZES E-COMMERCE AND E-BUSINESS**

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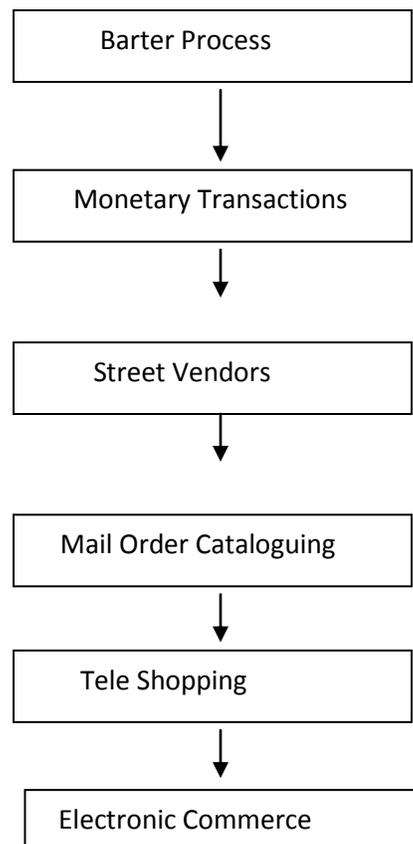
**Abstract**

*In the emerging global economy, E-commerce and E-Business have increasingly become a necessary component of business strategy and a strong catalyst for economic development. The integration of information and communications technology (ICT) in business has revolutionized relationships within organizations and those between and among organizations and individuals. Specifically, the use of ICT in business has enhanced productivity, encouraged greater customer participation, and enabled mass customization, besides reducing costs.*

**Introduction:**

Until the last few centuries, there were two main Revolutions – the Industrial Revolution and the Electronic Revolution. The Industrial revolution transformed our society from agricultural based to industrial based and the electronic revolution transferred our society from mechanical to electronic based. This 21st Century is the beginning of new revolution, i.e. network revolution. It interconnects the different parts of the world together and the concept of globalisation comes into existence. The internet is the engine of this revolution and E-commerce is the fuel. The idea of conducting business transaction via electronic media is an integral part of many businesses for several decades. But due to the advancement of internet technologies and advanced cryptographic techniques, E-commerce comes into the existence.

Evolution of Commerce: Commerce has evolved over the centuries. Prior to the evolution of money, it was a simple barter process; the evolution of money brought with it the concept of “market place”. In market place, commerce is function of 4p’s – Product, Price, Place and Promotion. It was realised that with the slightest modification of 2Ps i.e. Price and Place, can bring the convenience to the customer of getting product at their home. With this concept of street vendor was born, afterwards the concept of mail-order cataloguing and tele-shopping came into existence with development of media vehicle



The latest generation of commerce is one that can be done over internet. Internet provides a virtual platform to buyers and sellers to sell and buy the goods and services. The commerce over internet is known as “Electronic commerce” or “E-commerce”. E-commerce has emerged as boundary less trade medium in the era of globalization

**Global recession:** A global recession is a period of global economic slowdown. The International Monetary Fund (IMF) takes many factors into account when defining a global

recession, it states that global economic growth of 3% or less is "equivalent to a global recession".

**Recession:** Period of general economic decline, defined usually as a contraction in the GDP for six months (two consecutive quarters) or longer.

**Electronic Business:** It is commonly referred as "**E-Business**", it may be defined as the utilization of information and communication technologies (ICT) in support of all the activities of business.

**Electronic Commerce:** Electronic commerce or E-commerce (E com) is a subset of E-Business. E-commerce is the purchasing, selling, and exchanging of goods and services over computer networks (such as the Internet) through which transactions or terms of sale are performed electronically.

**Types of Ecommerce:** Ecommerce can be broken into four main categories:

- **B2B (Business-to-Business):** Companies doing business with each other such as manufacturers selling to distributors and wholesalers selling to retailers. Pricing is based on quantity of order and is often negotiable. Like alibaba.com is B2B website.
- **B2C (Business-to-Consumer):** Businesses selling to the general public typically through catalogs utilizing shopping cart software. Google is the good example of B2C website.
- **C2B (Consumer-to-Business):** A consumer posts his project with a set budget online and within hours companies review the consumer's requirements and bid on the project. The consumer reviews the bids and selects the company that will complete the project. Ebay.com is C2B website.
- **C2C (Consumer-to-Consumer):** where individuals can buy and sell thanks to online payment systems like Paypal where people can send and receive money online with ease.

#### **New technological innovation: E-Business**

Year 1830-1900 was a time of rapid economic growth and technological innovation which has been well documented and analyzed. Business historians Chandler (1977) and Porter and Livesay (1971) discuss changing patterns of production and distribution over this period.

In 1830, almost all goods were generic. Production processes used relatively simple technology and were low volume, with nearly all products distributed within a small locality.

The historical trend identified is the increasingly concentrated nature of the market, and the reduced costs of exchange. Changes in technology and market conditions created an economic situation that favored manufacturer-controlled distribution systems. However, that new technology (E-Business) is an important contributing factor to the changing organizational structure of firms. The four ways in which technological innovations can have impact: by necessitating new organizational structures to handle complexities, by encouraging administrative or other process changes that reduce costs or improve efficiency, by facilitating the development of new distribution channels, and by changing the power relations amongst organizations.

### **E-Business Worldwide:**

With over 1.2 billion Internet users worldwide in 2007, E-commerce has seen unprecedented growth over the last decade. Most retailers have taken advantage of this lucrative arena and have created a presence on the Internet, targeting the immense buying power of worldwide online shoppers. In 2009, online spending by consumers online purchases will rise by a substantial 13.3% to £20.9 billion although the internet is undoubtedly starting to slow and become a much more competitive environment, online retail is still set to reach £31.2 billion by 2013, accounting for 10.0% of total retail spending. In 2009, total retail growth will contract by 0.6% as consumer spending is ravaged by the effects of the recession. However, the online market will expand by a substantial 13.3% over the course of the year, driven by the continued increases in the number of internet shoppers and higher expenditure per head. This follows on from the trend of 2008 when there was a 1.0% increase in internet users—to 34.4m—and an 18.1% increase in online shoppers—to 26.7m—with each of these individuals spending an average of 5.8% more in comparison to 2007. Although online growth in 2008 represented a substantial out performance of wider retail, it was also the smallest rise in the channel's sales since the dotcom bubble burst in 2002. There are a growing number of signs that the internet is beginning to mature and enter a new, more subdued phase of growth, Growth in the number of online shoppers in 2008 was strong, but considerably less than the growth seen in 2007. It is predicted that these growth rates will continue to fall over the next five years, as penetration of the population begins to level out.

**Korea's total** E-commerce transaction for year 2006-2007 is

Transaction Category	2006 (US \$ thousand)		2007 (US \$ thousand)		COMPARISION 2006 vs 2007 (US \$ thousand)	
	RATE		RATE			
E-commerce Total	413,584	100%	516,514	100%	102,930	24.9%
B2B	366,191	88.3%	464,456	89.9%	98,264	26.8%
B2C	9,132	2.2%	10,226	2.0%	1,094	2%
C2C	3,826	0.9%	5,032	1.0%	1,206	31.5%

The **world wide E-commerce** transactions are

YEAR	US\$ Billion
2007	240
2006	190
2005	150
2004	130
2003	100
2002	80
2001	70
2000	50

1999	25
1998	10

The share of B2B in total global E-commerce was 79.2% during 2000 and rose to 87% during 2004. According to the regions B2B E-commerce in \$ billions during 2000-04 were as under

Year Region	2000	2001	2002	2003	2004	As % of world wide B2B commerce 2004
North America	159.2	316.8	563.9	964.3	1600.8	57.7
Asia/ Pacific	36.2	68.6	121.2	199.3	300.6	10.8
Europe	26.2	52.4	132.7	334.1	797.3	28.7
Latin America	2.9	7.9	17.4	33.6	58.4	2.1
Africa/ Middle East	1.7	3.2	5.9	10.6	17.7	0.6
Total	226.2	448.9	841.1	1541.9	2774.8	100

**The worldwide sales for B2B category is**

YEAR	B2B Sales(including EDI) US\$ Billion
2007	6800
2006	5300
2005	4100
2004	2800

<b>2003</b>	<b>1600</b>
<b>2002</b>	<b>900</b>
<b>2001</b>	<b>730</b>
<b>2000</b>	<b>600</b>
<b>1999</b>	<b>550</b>
<b>1998</b>	<b>520</b>

The world wise E-commerce revenue in percentage in year 2000 and 2004 was

<b>Region</b>	<b>Year 2000</b>	<b>Year 2004</b>
<b>Asia</b>	<b>5%</b>	<b>10%</b>
<b>Western Europe</b>	<b>46%</b>	<b>83%</b>
<b>Rest of the world</b>	<b>7%</b>	<b>7%</b>

### **E-Business in India.**

The low cost of the PC and the growing use of the Internet has shown the tremendous growth of Ecommerce in India, in the recent years. According to the Indian Ecommerce Report released by Internet and Mobile Association of India (IAMAI) and IMRB International, "The total online transactions in India was Rs. 7080 crores (approx \$1.75 billion) in the year 2006-2007 and grow by 30% to touch 9210 crores (approx \$2.15 billion) by the year 2007-2008. Although, as compared to the western countries, India is still in its initial stage of development. Although business-to-business transactions play an important part in E-commerce market, a share of E-commerce revenues in developed countries is generated from business to consumer transactions. Railway and Airlines have played a vital role in E-commerce transactions in India. Travel portals are exploding in India. Recently MakeMyTrip.com has shown Rs 1000 crores of turnover. Travel alone constituted 50% of Rs 4800 crore online market in 2007-08. In

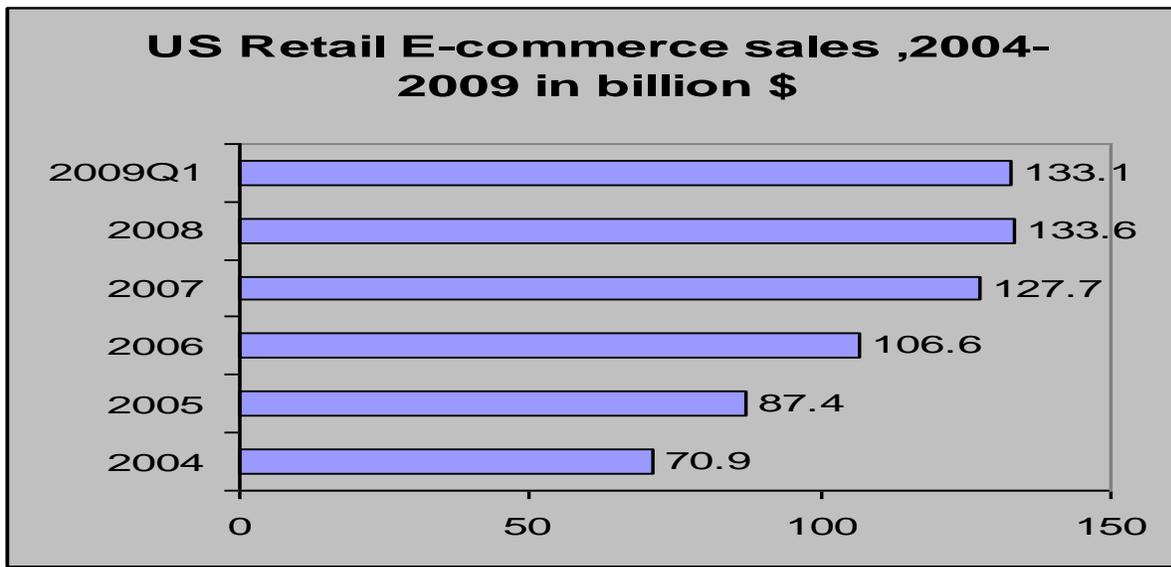
India, online services like ticketing, banking, tax payment, bill payment, hotel room booking, entertainment, online games, matrimonial sites, job sites, etc. are showing signs of development in business-to-customer transactions. There has been tremendous boost in the online E-Business with the stock exchange coming online. Online valentine gifts and Diwali gifts are also becoming popular along with the birthday cakes. No doubt, the total value of the B2B transactions is much larger than that of the B2C transactions, because typically B2B transactions are of much greater value than B2C transactions. It seems that the B2C market in India will take time to grow as compared to the B2B market.

### **E-Business in the Era of Recession**

The economic downturn is leading to the internet playing an increasingly bigger role. The net effect of the recession is likely to make the web a bigger part of retailing because retail chains and consumer goods manufacturers have seen during the recession how consumers use the web to research, even if they buy offline. Actual purchase is not the only aspect of online shopping for customers.

According to the report by Forrester Research and others on E-commerce indicates that E-commerce is one of the very few markets with growth expectations in 2009 and beyond. According to the report E-commerce revenue will grow from \$204B to \$335B by 2012. It has been believed that online sales will continue to grow through the recession due to accelerating shifts in consumer buyer patterns.

Drop in real U.S. GDP of 1.5% to 1.9% occurs for three to four quarters, it is believed that online retail E-commerce would still increase by 18%. In US the E-commerce rose 14.3% in 2008, but 26.5% overseas. That adds up to 21.5% combined, and even if economic growth slows globally



## **Performance of various B2B and B2C Companies in the Era of Recession**

### **1. Amazon**

Company seeks to offer the Earth's Biggest Selection and to be the Earth's most customer-centric company, where customers can find and discover anything they may want to buy online.

Amazon.com, Inc. operates as an online retailer in North America and internationally. It operates various retail Web sites, including amazon.com, amazon.co.uk, amazon.de, amazon.fr, amazon.co.jp, amazon.ca, and amazon.cn. The company serves its consumer customers through its retail Websites and focuses on selection, price, and convenience. It also offers programs that enable seller customers to sell their products on its Websites and their own branded Websites. In addition, the company serves developer customers through Amazon Web Services, which provides access to technology infrastructure that developers can use to enable virtually any type of business. Further, it offers co-branded credit card programs, fulfillment, and other marketing and promotional services, such as online advertising. Amazon.com, Inc. was founded in 1994 and is headquartered in Seattle, Washington.

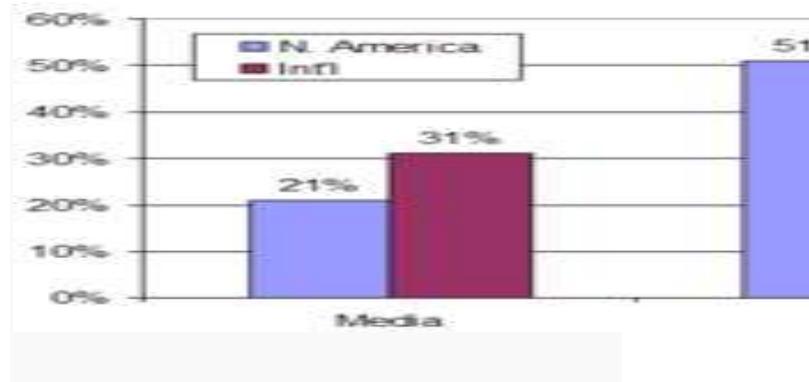
### **Recent stock performance**



Category Expansion

#### Amazon Historical Performance

	2006	2007	2008
Net Sales (\$millions)	10,711	14,835	19,166
Net Income (\$millions)	190	476	645
Operating expenses(\$millions)	1,966	2,513	3,153
Cash (\$millions)	1,022	2,539	2,769
Current Ratio	N/A	1.39	1.30



Although 64% of Amazon's worldwide revenue still comes from media categories (books, music, video), Amazon's product footprint in the US has expanded into over 40 categories. New product categories represent significant growth opportunities for the company, given the lower online penetration rates in many of these categories. Revenue and

income growth rates for these categories have regularly outpaced the growth in media categories both in the US and abroad. Q3 2007 saw the launch of Apparel & Shoes, Home & Kitchen, and Baby stores for several of Amazon's international presences, and the highly successful Fulfilment by Amazon was expanded to the UK, Germany and Japan as well.

Global Selection							
	US	UK	Germany	France	Japan	Canada	China
Books	'95	'98	'98	'00	'00	'02	'04
Music/Video	'98	'99	'99	'00	'01	'02	'04
DVD/Rental*	'98	'99/'04*	'99/'05*	'00	'01	'02	'04
Video Games & Software	'99	'00	'00	'01	'01	'03	'04
Electronics	'99	'01	'01	'05	'03		'04
Toys & Baby	'99	'01	'04	'07	'04		'04
Tools & Hardware	'99	'04	'04				
Kitchen & Housewares	'00	'04	'04		'03		'06
Magazines	'01		'02		'04		
Office Products	'02						
Apparel & Accessories	'02						
Sports & Outdoors	'03	'07	'06		'05		
Gourmet Food	'03						
Jewelry/Watches	'03	'07	'07		'07		'06
Health & Personal Care	'03				'06		'06
Beauty	'04						'06
Musical Instruments	'04						
Grocery	'06						
Automotive	'06						
Third Party Sellers							
Marketplace	'00	'02	'02	'03	'02	'03	
Merchants®	'02	'06	'06		'07		

Expect More Category and Country Expansion Over Time

International businesses have represented a significant area of growth for Amazon. Although Amazon ships to almost any country in the world, it has selectively chosen to establish country-specific websites and fulfilment networks. Beginning with its expansion into the UK and Germany in 1998, and subsequently to France (2000), Japan (2000), Canada (2002), and expansion into China, Amazon has expanded its geographic footprint into the world's major E-commerce markets. International growth rates have consistently beaten that of North America, with growth rates in revenue.

**Revenue/GPM:** Amazon.com spent \$3.74 billion to make \$4.89 billion in revenue. This Gross Profit Margin totaled 23.5 %.

#### Comparison of Growth in Sales between Fiscal Years (2005-2008)

Years	FY08-FY07	FY07-FY06	FY06-FY05
<b>North America (%)</b>	26	38	25
<b>International (%)</b>	33	39	28

This is due in part to the relative maturity of the US market, as well as to the strategy Amazon has employed in rolling out new product categories and features to its international properties. Amazon has typically introduced most of its new stores and features in the US market first, eventually replicating the most successful ventures in international markets. Amazon's international businesses have thus been able to benefit from experience gained through US experiments to grow at an accelerated pace.

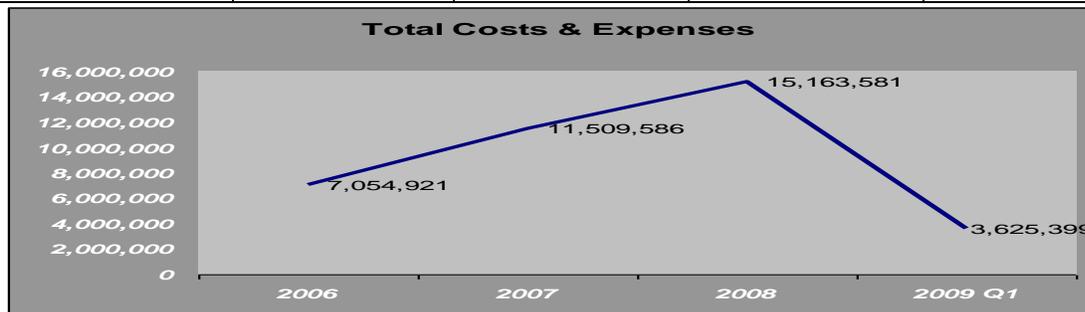
<b>REVENUE BY GEOGRAPHY (USD)</b>					
PERIOD ENDING	31-DEC 2004	31-DEC 2005	31-DEC 2006	31-DEC 2007	31-DEC 2008
<a href="#">Revenue - North America</a>	3.85B	4.71B	5.87B	8.10B	10.2B
<a href="#">Revenue - International</a>	3.07B	3.78B	4.84B	6.74B	8.94B
<a href="#">Total Revenue</a>	6.92B	8.49B	10.7B	14.8B	19.2B
<b>REVENUE BY SEGMENT (USD)</b>					
PERIOD ENDING	31-DEC 2004	31-DEC 2005	31-DEC 2006	31-DEC 2007	31-DEC 2008
<a href="#">Revenue - Media</a>	5.10B	5.93B	7.07B	9.24B	11.1B
<a href="#">Revenue - Electronics &amp; Other General Merchandise</a>	1.69B	2.33B	3.36B	5.21B	7.54B
<a href="#">Total Revenue</a>		6.92B	8.49B	10.7B	14.8B

## 2. Google

Google Inc. is an American public Corporation, earning revenue from advertising related to its Internet search, email, online mapping, offline productivity, social networking and video sharing services as well as selling advertising-free versions of the same technologies. The Google headquarters, the googleplex, is located in Mountain view, California. As of March 31, 2009, the company has 20,164 full-time employees. Google was founded by Larry Page and Sergey Brin while they were students at Stanford University and the company was first incorporated as a privately held company on September 4, 1998. The initial public offering took place on August 19, 2004, raising US\$ 1.67 billion, implying a value for the entire corporation of US\$23 billion. Google has continued its growth through a series of new product developments, acquisition, partnership, environmentalism; philanthropy and positive employee relation have been important tenets during the growth of Google. Google's mission is "to organize the world's information and make it universally accessible and useful".

The Investment made by the Google during the year 2006, 2007, 2008 and 2009Q1 is as follows

<b>COST</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009Q1</b>
Cost of revenues	4,225,027	6,649,085	8,621,506	2,101,504
Traffic Acquisition Cost	3,308,777	4,933,878	5,938,951	1,435,960
Other Cost of Revenues	916,250	1,715,207	2,682,555	665,544
Research & Development	1,228,589	2,119,985	2,793,192	641,643
Sales & Marketing	849,518	1,461,266	1,946,244	433,941
General & Administrative	751,787	1,279,250	1,802,639	448,311
<b>Total Costs &amp; Expenses</b>	<b>7,054,921</b>	<b>11,509,586</b>	<b>15,163,581</b>	<b>3,625,399</b>



Even during the period of recession Google has invested more than the prior years.

**Revenues** earned by Google:

<b>Revenues</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009 Q1</b>
Revenues	10,604,917	16,593,986	21,795,550	5,508,990
Google web sites	6,332,797	10,624,705	14,413,826	3,692,823
Google Network web	4,159,831	5,787,938	6,714,688	1,638,042

sites				
Total Advertising Revenues	10,492,628	16,412,643	21,128,514	5,330,865
Licensing & other revenues	112,289	181,343	667,036	178,125



Google has earned good revenues during the period of recession, as the chart indicates the revenue is increasing year by year; there is less effect of recession on B2C companies.

<i>Revenues</i>	2006	2007	2008 Q1	2008 Q4	2009 Q1
International market place					
Gold Supplier members	967,858	1,503,331	447,630	475,438	492,683
International Trust pass members	24,011	32,825	8,994	12,083	12,876
Other Revenues	-	11,539	7,540	1,583	-
Sub-total	991,869	1,547,695	46,164	489,104	505,559

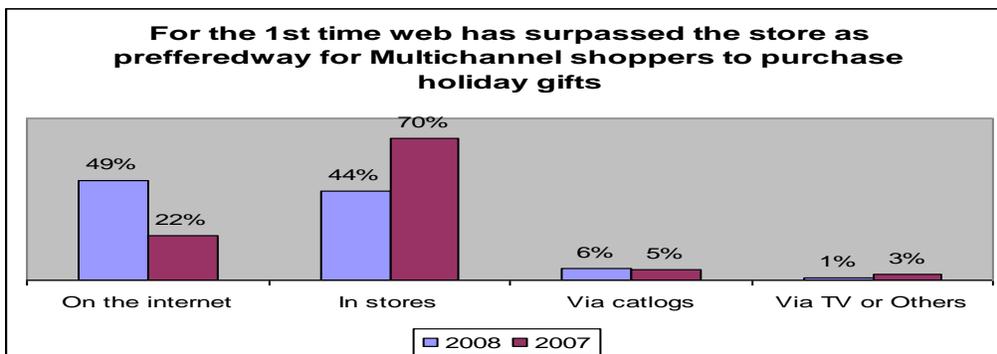


### Key Highlights

- E-payment solutions are an important part of E-commerce transactions; however security issues continue to tarnish the industry.
- BuddeComm estimates revenue from mobile content and services (excluding SMS), accounts for around 7-10% of total mobile revenues worldwide. SMS remains popular and accounts for a further 10% of total mobile data revenues.
- Online advertising growth is set to continue for the next few years, but will slow slightly in the wake of the US financial crisis. It is expected that online advertising will eventually account for around 20% of all advertising spend in some markets.
- Search services are central to almost everything that users do online, and this places leading search companies such as Google and Yahoo at an advantage. In the emerging Chinese market, Baidu and Alibaba also have a good foothold.
- Google is still the most popular website property worldwide; however individual countries and regions show unique differences with many local sites remaining popular. Other web properties proving popular across multiple markets include Yahoo, Microsoft and Wikipedia sites, Apple Inc, eBay and Amazon.

### Conclusion:

### Preferences of online purchasing over stores



In 2008 the web has surpassed the stores for multichannel shoppers to purchase holiday gifts. In 2008 around 49% people purchased the products through web, while in 2007 this figure was 22% only. This shows that in recession has positive impact on E-commerce.

The future of E-commerce is going to depend upon a positive confluence of technology, regulation, laws. Culture, social issues, economics, vendors, competitors and all consumers. From the estimated future sales figures, that appears to be happening. Overall, E-commerce is and will be important for countries and firms that already possess the environment and the capabilities and capacity to utilize the Internet for sales purposes. While E-commerce may offer little initially to bring them to the industrial nation status, there will be dramatic increases in the well being of many third world countries. Economics, politics and competitive forces will also help bring them into the 21st Century of electronics, driven by the Internet that has no boundaries and is owned by no nation. A restructuring of worldwide channels of distribution will occur with concomitant new sales, sometimes to the detriment of existing industrialized nations, with a major contribution to the economic development of both industrialized and developing nations.

Even in this period of recession the E-commerce especially E-tailing, B2C companies have shown the growth towards positive side. When companies are cutting down their budgets, these companies are investing in E-Business during recession and reaping the profits because E-Business is a global business and the impact of recession is not same every where.

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