

## It's a small, connected world

As voice revenue streams diminish, mobile device players will expand into non-voice services. According to Informa Telecoms & Media's Global Mobile Forecasts, annual revenues from the global mobile market will top US\$1.03 trillion by 2013, when the number of subscriptions worldwide will have risen to more than 5.3 billion out of a world population estimated to be about 6.756 billion.

That is, almost everyone on the planet will have a mobile device. It took over 20 years to reach three billion subscriptions, but in the next six years, 1.9 billion net additions are forecast to bring the global total to 5 billion in 2011. With this extraordinary growth, total annual revenues derived from mobile operators will grow by over a third, jumping from \$769 billion in 2007 to \$1.03 trillion six years later.

Informa Telecoms & Media forecasts 78 percent of global net additions between 2007 and 2013 will come from markets in Asia Pacific, Africa, and Latin America. Forty seven percent will come from just five markets—India, China, Indonesia, Brazil, and Russia. The mature markets of North America and Western Europe will contribute only eight percent of total global net adds. Globally, mobile phone subscriptions will approach the 75 percent mark in 2013, while some countries will push past 100 percent: Romania (152 percent), Russia (153 percent), Italy (168 percent), Ukraine (173 percent), and Greece (183 percent). One phone may have multiple SIMs.

SIM (Subscriber Identity Module) is a detachable card which is inserted into a mobile phone to identify a mobile phone subscriber of a specific network service provider. Growth in subscriptions (the number of SIMs) will outstrip growth in subscribers (the number of unique users), pointing to greater multi-SIM ownership.

The global ratio of subscriptions to subscribers will increase from 1.29 in 2007 to 1.32 in 2013. In Western Europe, the ratio will reach 1.55 in 2013, and even higher (1.75) in Eastern Europe.

Reductions in voice tariffs and availability of cheap 2G and 2.5G handsets will open mobile services to low-income sub-

scribers who have never previously owned a mobile phone. 2G will remain the dominant technology by subscription numbers until 2013. Its market share will fall from 66.9 percent in 2007 to 32.7 percent in 2013, and 3G+ technologies gaining ground. 3.5G technologies accounted for 1.2 percent of total subscriptions in 2007 but will represent 22.9 percent of the global subscription base by 2013 and exceed the number of 3G subscriptions. With migration to next-generation technologies already under way, operators will focus increasingly on demand for mobile broadband.

With increasing consumer familiarity and growing ease of use, mobile applications for financial services companies—particularly banks and other financial services—could become the new “killer app” for telecommunications. The number of people banking through a mobile device could hit half a billion worldwide by 2013, according to ABI Research. Mobile financial services may potentially have more subscribers than mobile TV and premium mobile content in terms of numbers of subscribers.

The drive for more and better mobile financial services applications is being fed by consumers who are more accustomed to banking online, using online banking to more than simply check their accounts. They will begin to use their mobile devices for those purposes as well. Growth will be in more sophisticated applications like bill payment and funds transfers.

But banks will have to work to make the mobile experience as simple and user-friendly as online services. In the U.S., the mobile banking leader is Bank of America which launched its mobile service in 2007, and by the end of 2008 had 1.5 million subscribers.

### DID YOU HEAR?

- The paper catalog is still the largest revenue generator among all channels averaging nearly 50 percent of sales in both 2007 and 2008 (Direct Marketing Association).
- Despite current economic conditions, 29 percent of marketers indicate they will increase planned spending in 2009. Over 40 percent say that their 2009 budgets will remain the same as 2008 (American Business Media).
- Close to 40 percent of consumers surveyed have tried a new business for the first time because of information received via direct mail. Nearly 70 percent renewed a relationship with a business after a period of time because they received a direct mailing or promotional item (DMNews/Pitney Bowes survey).
- The Sunday newspaper remains the number one place for acquiring household coupons. Fifty-three percent of households get their coupons from the Sunday paper. Analysis also shows that Internet coupons are of increasing interest to consumers, with 11 percent of households currently obtaining coupons via the Internet—an 83 percent increase since 2005. All coupon acquisition categories have experienced growth since 2005—with most experiencing double-digit growth (Scarborough Research).
- The North American market for transpromotional applications printed in full digital color represented 1.7 billion impressions in 2007. By 2012, the number of impressions may reach 12.8 billion (InfoTrends).
- Most consumers say that mail remains the preferred method of delivery for “must-read” documents like statements or bills (InfoPrint Solutions).

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**SHORT TAKES**

U.S. Ink is ready to help companies improve their taste in newspaper advertising. The Ink supplier introduced sticky notes with an edible film that smells and tastes like an advertiser's flavored product embedded. The film was developed in concert with suburban Philadelphia-based First Flavor Inc., whose patent-pending Peel n Taste marketing system was first used in 2007. This product is not a flavored ink. It is an edible film that smells and tastes like an advertiser's flavored product.

Financial services direct mail volume for 2008 fell 25 percent from 2007 levels, according to Mintel Comperemedia. For the first 11 months of 2008, the direct marketing tracking firm estimated financial services direct mail volume at 10.3 billion pieces. In 2007, Mintel estimated that volume at 13.9 billion. When compared to the same period of 2006, the report indicates a 32 percent decline for the 2008 11-month total. Mintel estimates the number of credit card offers sent to new customers dropped 24 percent last year. Mortgage and loan mail fared worse as lenders reduced acquisition volume by 37 percent.

Flexible electronics—the kind that might be used in “smart” clothing or in foldable displays for making news read more like real print—are still far from an everyday reality. In a paper in *Nature*, Jae-Young Choi of the Samsung Advanced Institute of Technology, Keun Soo Kim and Byung Hee Hong of Sungkyunkwan University, and colleagues describe a technique for making stretchable thin electrodes out of graphene. Graphene is a single layer of carbon atoms and making graphene sheets of a practical size has been problematic. The researchers use a process called chemical vapor deposition in which methane gas mixed with hydrogen and argon is flowed over nickel foil at high temperatures, depositing carbon atoms from the methane on the nickel. By cooling the foil quickly, just a few layers of graphene are obtained. The graphene can be patterned by creating a pattern in the nickel first. Etching away the nickel obtains an ultrathin film of graphene that can be easily transferred to a different substrate like flexible plastic. The films are not affected by bending or stretching.

Newspapers are ramping up presses to ensure they don't miss out on an inauguration day windfall. Publishers of the *New York Times*, *Washington Post*, and newspapers across the country are planning to sell millions of extra copies, special editions, books and other memorabilia. November 5th newspapers attracted bids of \$100 on eBay. Stores sold out copies of an inauguration-day issue of “The Amazing Spider-Man.” The *New York Times* will sell its November 5th and January 21st issues together for \$14.95. *Washington Post* will also offer a replica of the metal plate used to print its January 21st front page for \$49.95. The *Los Angeles Times*, owned by Tribune, will sell printing plate replicas for \$79.99 each. Rand McNally & Co. is selling commemorative waterproof fabric maps of the area around the U.S. Capitol and White House for inauguration-goers at \$9.95 each.

According to a Gallop Poll, Americans' use of the Internet has almost doubled over the last five years; 48 percent now use the Internet more than an hour per day compared to 26 percent in 2002. Post-graduates, those making more than \$75,000 per year, and those under age 30 are the most frequent users of the Internet with more than six out of ten in each group saying they use the Internet more than an hour per day.

Media must become comfortable with the economics of fragmentation, not scale, according to Troy Mastin, media analyst for William Blair & Co. “We will see hyper-local products, targeted at specific suburban populations. Young people will associate based on personal interest, passion, and professional affiliation.” Mastin was very bullish on community newspapers, particularly those smart enough to be open to consumer-generated content, as “the cross-roads for rural areas.” Advertising will be the primary revenue source for media, not subscriptions. There was great resistance to putting all content online because media are not paid as well to do it. But now it is clear that there will be an advertising-supported media model; media cannot charge enough on the subscription side to have quality. Mastin cited a 2007 Blair study which said that 81 percent of college students in the U.S. prefer ad-supported to paid content, a number up from 73 percent in 2006.

## EDSF RESEARCH IN COLOR DIGITAL PRINTING PRESS SATISFACTION IN TAIWAN

The EDSF study “A Satisfaction Study of Color Digital Printing Presses in Taiwan” by Dr. Tsung-Yu Hao with graduate student Yung-Hui Yen and senior students Yi-Ru Chen, Zhen-Wan Huang, Yung-Ting Kan, and Zi-Yi Lee at Shih Hsin University, Taipei, Taiwan, R.O.C. was made possible through a research grant provided by EDSF and is available at [www.edsf.org](http://www.edsf.org).

This research investigated the digital printing business of Taiwan. The study had the following objectives: (1) understand the current state of digital printing markets in Taiwan; (2) analyze a study of satisfaction among digital printing service providers about their digital presses; (3) understand their satisfaction with the sales representatives, maintenance, and technical services provided by digital printing equipment suppliers.

### Key findings

- Typical digital printing businesses focus on photo books, document printing, and copying.
- Digital printing services providers were generally pleased with the performance of their digital presses.
- Digital printing services providers were not happy with the overall performance of vendor sales representatives. However, they were satisfied with the post-installation service by technical support engineers.
- Online editing services providers used digital printing with photo book applications leveraging their expertise in information technology as an advantage to gain higher profits.
- Business strategies for successful digital printing services must be tailored to meet customers’ needs.
- Capital and operation costs are still major problems for digital printing services providers.

### Major implications

- Copy shops and digital printing specialists compete in the market. Commercial printers are currently only a minor factor in the digital printing market of Taiwan.
- The overall performance of digital printing presses satisfied their owners, but there is room for improvement.
- Sales representatives and technical support engineers should work together as a team to provide the best quality service to digital printing services businesses.
- Photo books are one of the most popular digital printing products. Digital printing services providers should expand their offerings with unique products to increase profits.
- For digital printing services providers to survive in the near future, they should have well-thought plans, work to maintain good relationships with customers and equipment providers, and seek to educate customers about new applications.
- The costs of capital and operations will drop as technology improves. Having high-quality internal management is essential at this critical moment in the market’s development.

There are nearly 100 high-end digital printing presses installed (color or B/W) in Taiwan. Some of the digital printing services providers have more than one digital printing press. The 29 digital printing services providers surveyed can be divided as follows: (Copy Shops, Commercial Printers, and Digital Printing Specialists. Thirteen (45 percent) digital printing services providers are “Copy Shops,” 13 (45 percent) are “Commercial Printers,” and three (10 percent) are

“Digital Printing Specialists.” Interviews with owners of digital printing services businesses with at least two digital printing presses provided a clear view of the strategies they should have. They are:

- Maintain good relationships with clients and equipment providers. Business owners are pleased with the support teams of the equipment providers.
- Keep digital printing technologies up to date. Pay attention to print trade shows, magazines, and journals, as well as the academic research, and printing associations to gain knowledge.
- Focus on customers’ wants and needs. Customers decide whether the product quality is acceptable or not. It is important to build value for customers in areas beyond just pricing. Short-runs, job turnaround time, binding, price, and color quality are the major issues that consumers care about.
- Creating or finding new markets and applications are important. Uniqueness of applications is essential to avoid dealing with only pricing issues.
- Digital printing owners provide B2B and B2C business models to their customers in the spirit of CIP3 and CIP4.
- Provide supply chain and satellite printing services to meet customer needs.

Digital printing services providers are facing challenges as competitors enter this market faster than the market can expand. Problems that digital printing services providers need to identify and solve encompass technical expansion, new markets, personnel, and customer relationships. Once the unit cost drops close to the unit cost of conventional printing (for a certain quantity), digital printing business owners will have strong incentives to purchase newer equipment.

It is necessary to educate and promote the concepts of digital printing to the general public. Once consumers are better aware of the benefits of digital printing, market growth is more certain.

## Your contribution can make a difference

EDSF is currently accepting scholarship applications for 2009 – 2010, but we need your help.

No one has been more affected by the current economic problems than students. With other sources of financial aid disappearing or diminishing, many of them cannot return to school without help. More than ever before you can make a difference in the future generation of creative and influential young minds that will lead our industry in the future.

To make a contribution, you can donate online at [www.edsf.org](http://www.edsf.org) and designate 100 percent of your gift to be used for scholarships. For additional information, contact Brenda Kai at [brenda.kai@edsf.org](mailto:brenda.kai@edsf.org).

*Accepting Scholarship Applications through May 1st.* EDSF provides scholarships to full-time students worldwide pursuing careers in the document management and graphic communications industry. To apply, visit [www.edsf.org](http://www.edsf.org) for a scholarship application.

## TV VIEWING AND THE INTERNET

People who use the Internet most also watch the most television: the top fifth of Internet users spend more than 250 minutes per day watching television, compared to 220 minutes of television viewing by people who do not use the Internet at all. The Nielsen TV/Internet Convergence Panel found the reverse is also true—the lowest consumers of television have the lowest usage levels for the Internet.

The study shows that 31 percent of in-home Internet activity takes place while the user is watching television, indicating significant simultaneous Internet and television usage. Conversely, about four percent of television viewing occurs when the consumer is also using the Internet.

Half of the panelists viewed streaming content online. The demographics of those streaming the most were 82 percent of female teen panelists viewed streaming content, 64 percent of male teens, and 57 percent of men 18-34.

Nearly 60 percent of panelists and more than 80 percent of people who had watched TV and used the Internet that month had simultaneous sessions—watching TV and being online at the same minute. This group tends to be heavy users of both TV and Internet. Teens are the most likely demographic to have simultaneous TV/Internet usage, but adults 35-54 rack up the most simultaneous usage minutes.

Early trends indicate that online usage is complementing, not substituting for, traditional television viewing.

## DISPLAY TECHNOLOGY PRIMER

“OLED” is pronounced “OH-led” and stands for organic light-emitting diode. OLED is not yet competitive with plasma or LCD. Reasonably priced OLED TV screens won't reach the market until 2012 at the earliest; they are too difficult to mass-produce at this point.

Even though LCD has made enormous strides, and most of its traditional drawbacks have been eliminated, it's still reaching only half its potential in picture quality and other attributes. Improvements will make LED very competitive with OLED.

E-Ink is the company that makes extremely low-power, non-illuminated, grayscale displays on the Amazon Kindle, Sony Reader, and special newsstand editions of the December 2008 *Esquire* magazine. So far, the color is faded. Every e-book reader on the market uses E-Ink exclusively.

Pocket pico projectors are growing in use. An iPod can be connected to watch movies on a much bigger personal screen, or to make instant presentations anywhere you can find a wall. There is even a working prototype of a cellphone with pico projector built right in.

Laser-based projection TV screens reproduce a much larger range of color than plasma or LCD and the brightness blows away even LCD. Blacks are super-black. Laser TVs use about a quarter as much power as plasma or LCD. They're still projection TV sets, about 10 inches deep, so hanging one on the wall may not be an option.

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