

# Taiwan's xDSL equipment

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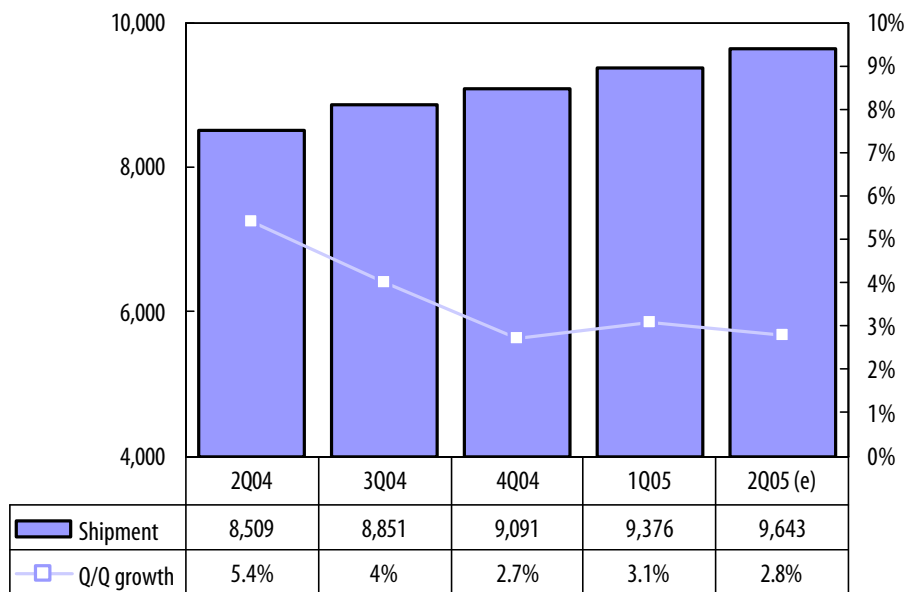
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# Introduction

With an over 80% share of the fast-growing worldwide xDSL market, Taiwan makers' shipments in the first quarter of 2005 reached 9.38 million units, registering a higher growth rate than the world's average. However, the growth in volume did not translate into value increases because of fierce pricing campaigns. The first-quarter production value dropped US\$8.2 million sequentially to US\$299 million.

Demand in the second quarter is expected to grow, with xDSL shipments from Taiwan increasing to 9.64 million units, up 2.8% sequentially. However, shipment value will continue to decline to US\$295 million. The shipment trend for the first and second quarters shows that demand for Taiwan's own-brand and high-end xDSL products is rising sharply.

**Chart 1: Taiwan xDSL shipments, 2Q04-2Q05 (k units)**

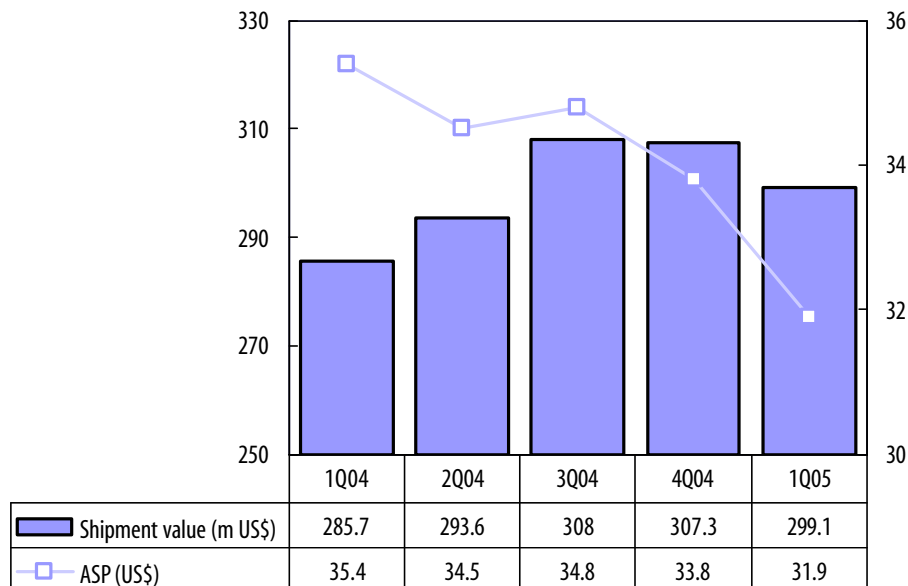


Source: DigiTimes Research, April 2005

# The first quarter

The average selling price (ASP) for xDSL equipment in the first quarter of 2005 dropped to US\$31.9 from US\$33.8 in the previous quarter. The lower ASP resulted in a decline in total production value despite a rise in shipment volume.

**Chart 2: Taiwan xDSL shipment value and ASP, 1Q04-1Q05**



Source: DigiTimes Research, April 2005

The ASP is being driven down by increased shipment to the telecom sector, which since the fourth quarter has seen many of its players adopt online bidding that has aggravated the price war. The online bidding practice started in southern Europe and has spread to other parts of Europe, including Italy, Germany, Czech Republic, France and Hungary. Some telecom players in Asia also have followed suit, making online bidding a prevailing trend.

Online bidding is creating tremendous price pressure for xDSL equipment makers. In one recent case, the competition for a project to supply consumer premise equipment (CPE) to Hungary ended with the ASP down to US\$11.4 from the opening bid of US\$23.3. The aggressive pricing in the CPE segment, which accounted for 95% of Taiwan's total xDSL shipments, is aggravating the value decline.

## Technology: ADSL and VDSL

With the FTTH (fiber to the home) construction slowing down in East Asia, and with the launch of high-speed ADSL2+ products, Taiwan's first-quarter shipments of VDSL equipment dropped to 3.2% of its entire xDSL shipments.

**Chart 3: Taiwan xDSL shipments by technology, 1Q04-1Q05**



Source: DigiTimes Research, April 2005

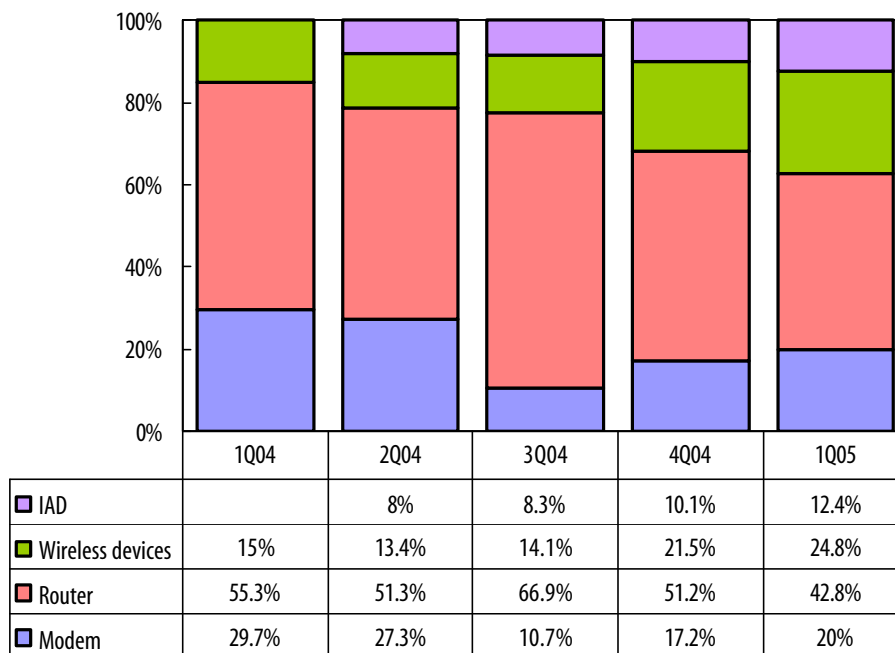
Compared to the VDSL and ADSL segments, other xDSL technologies play a negligible role in Taiwan shipments, and therefore the present study focuses on VDSL and ADSL.

## Products: Routers, modems, wireless devices and IADs

In the first quarter of 2005, the most significant growth among all of Taiwan's xDSL CEP segments belonged to wireless devices (which, in this report, includes those products with only wireless networking functions, and those integrating wireless networking and router functions). The wireless segment accounted for almost 25% of the total xDSL shipments. Vendors such as Linksys, Netgear and Belkin are now marketing wireless devices, while the telecom sectors in Western Europe and Taiwan have also increased their purchases of wireless ADSL routers.

IAD (integrated access device) shipments from Taiwan rose slightly in the first quarter, with demand still chiefly coming from Japan and Western Europe.

**Chart 4: Taiwan xDSL shipment breakdown by product type, 1Q04-1Q05**

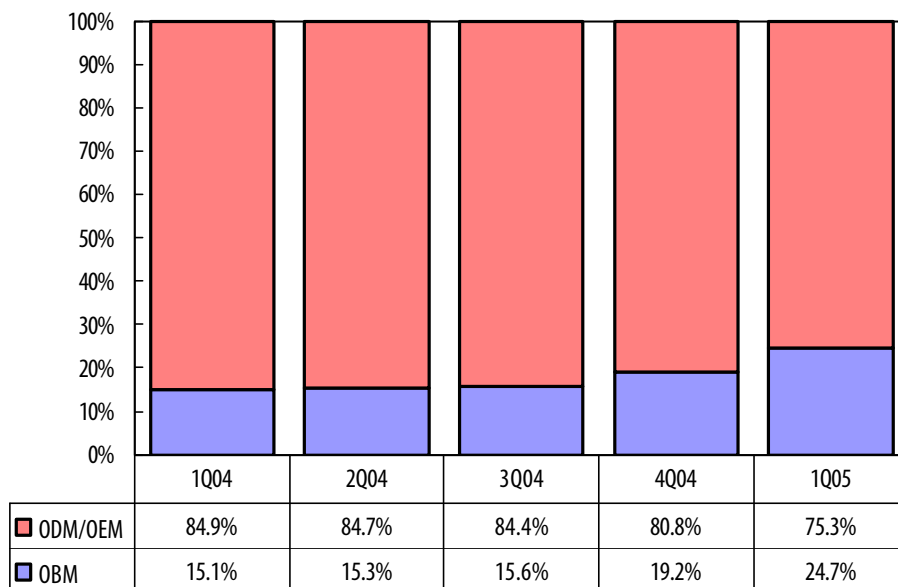


Source: DigiTimes Research, April 2005

## Production: OBM, OEM and ODM

A major development for Taiwan's xDSL equipment sector in the first quarter was the strong growth in own-brand products to 25% of the total shipments, up 5.5 percentage points sequentially. The major momentum for the growth came from Zyxel Communications and D-Link, both of which reported strong sales in Western and Eastern Europe, and in Central and South Americas. Asustek, Comtrend, and DrayTek, with increases in the proportions of their own-brand shipments, also contributed to the Taiwan sector's OBM growth in the first quarter.

**Chart 5: Taiwan xDSL shipment breakdown by production mode, 1Q04-1Q05**

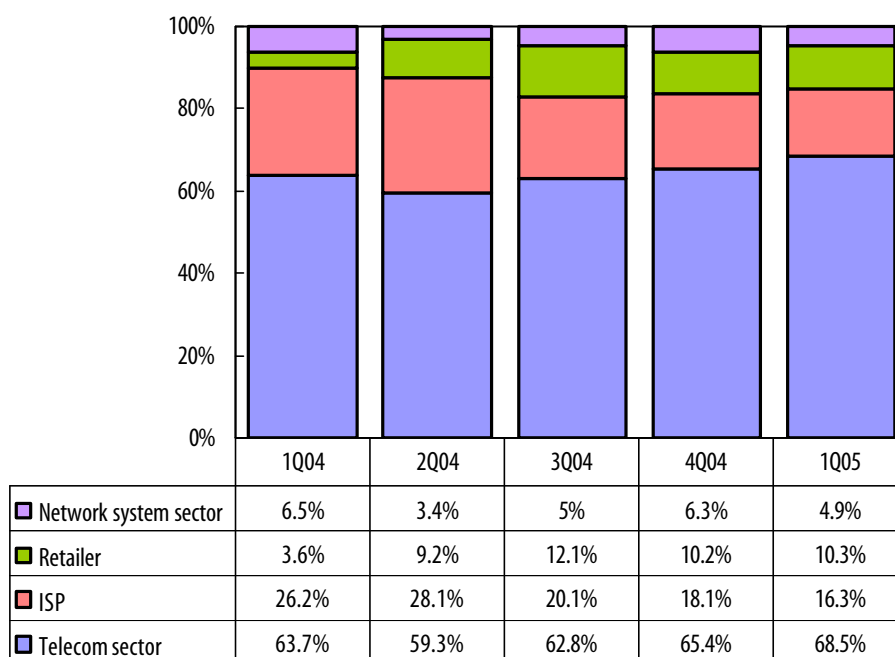


Source: DigiTimes Research, April 2005

## Clients: Telecom sector, ISP, retailer, and network system sector

Developing markets were the major push behind Taiwan's xDSL shipment growth in the first quarter. As Eastern Europe, India and Brazil saw more of their players in their telecom sectors adopt online bidding for procurements, Taiwan's xDSL shipments to the three country's telecom sectors grew.

**Chart 6: OEM shipment breakdown by OEM client type, 1Q04-1Q05**



Source: DigiTimes Research, April 2005

The ADSL business for Internet service providers (ISP) in the US and Japan stayed flat in the first quarter, which in turn caused a drop in the percentage of Taiwan's overall xDSL shipments to the Internet service sector. Taiwan's shipments to the network system sector also declined as the sector was giving up the low-margin CPE market.

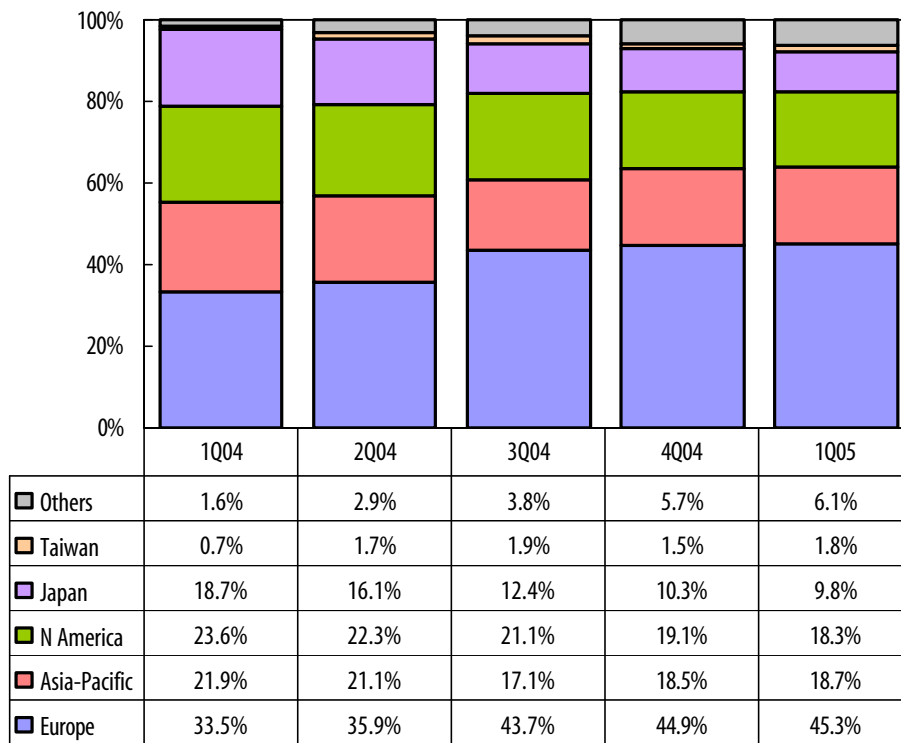
## Markets

In Western Europe, telecom players in such countries as Britain, France and Germany were gearing up efforts promoting broadband services. In Eastern Europe, Hungary and other countries continued taking delivery of xDSL shipments for government-run projects. Strong demand from Thomson Multimedia and Siemens helped boost Taiwan makers' overall shipments. Europe remained firmly on top of other markets, taking delivery of 45% of Taiwan's xDSL shipments in the first quarter.

Thanks to China's fast growing broadband market, which chiefly provides ADSL services, Asia's share of Taiwan's xDSL shipments in the first quarter increased to almost 19%.

Although ADSL operators in North America have lowered the prices of their services, cable modem remains the top choice in the region's broadband market. The region's share of Taiwan's xDSL equipment shipments dropped slightly in the first quarter.

**Chart 7: Taiwan xDSL shipment breakdown by region, 1Q04-1Q05**



Source: DigiTimes Research, April 2005

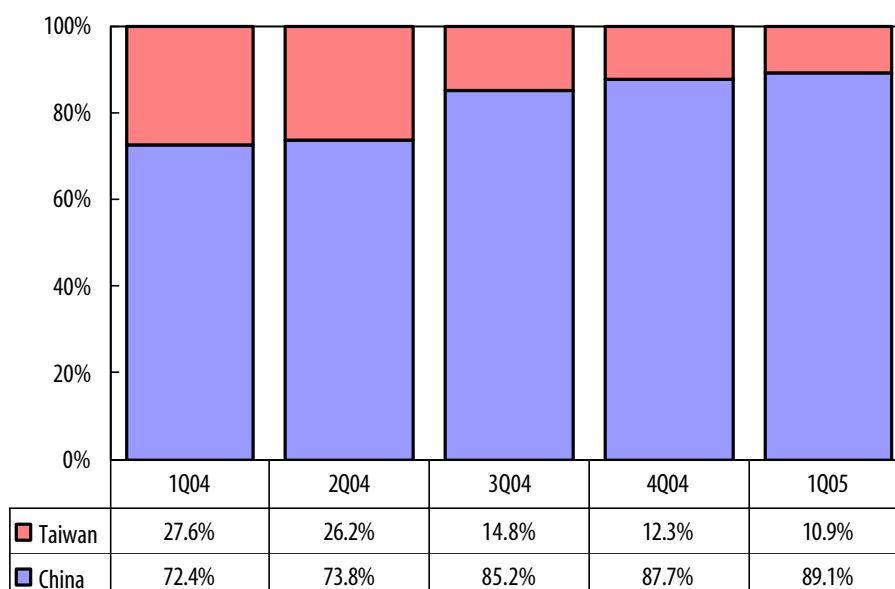
Taiwan's xDSL shipments to Japan declined slightly in the first quarter because of the slowing growth in subscriptions to the ADSL services offered by NTT East, NTT West (both being Nippon Telegraph & Telephone's regional carriers) and Softbank. In fact, FTTH remained Japan's chief option for broadband services, while at the same time there were a variety of other technologies, such as HomePlug, 3G mobile communications, and WiMAX to choose from.



## Production base: China and Taiwan

With cost pressure forcing makers to move more of their production to China, Taiwan saw a further drop in the proportion of xDSL products being shipped from domestic plants to less than 11% in the first quarter.

**Chart 8: Taiwan xDSL shipments by production base, 1Q04-1Q05**

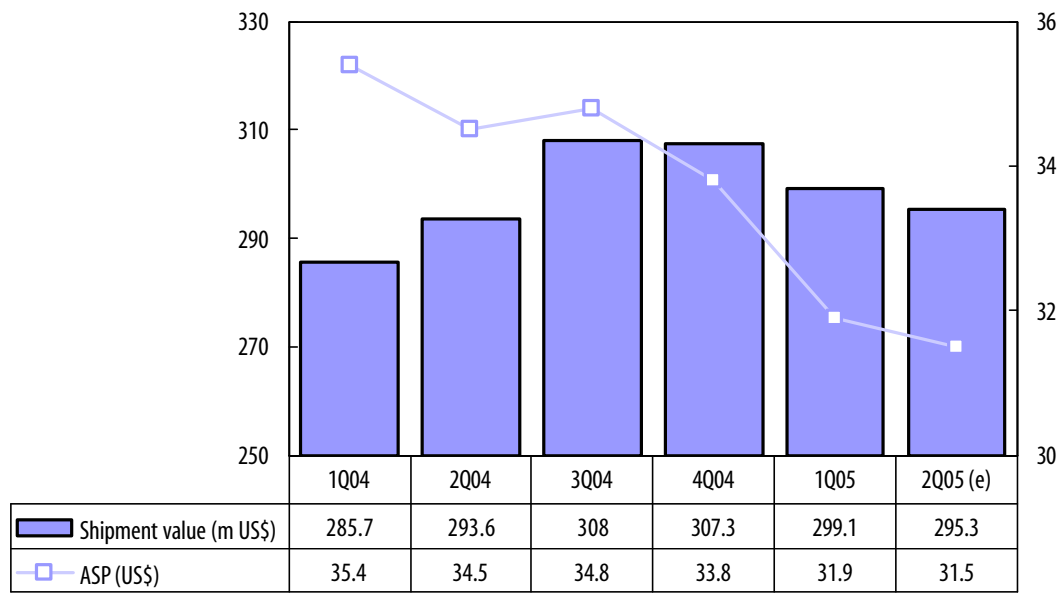


Source: DigiTimes Research, April 2005

## The second quarter

With the worldwide population of broadband subscribers growing, second-quarter xDSL equipment shipments from Taiwan are expected to continue growing. Shipment volume is estimated to reach 9.64 million units, up 2.8% sequentially. The figure is slightly lower than the one recorded in the first quarter.

**Chart 9: Taiwan xDSL shipment value and ASP, 1Q04-2Q05**



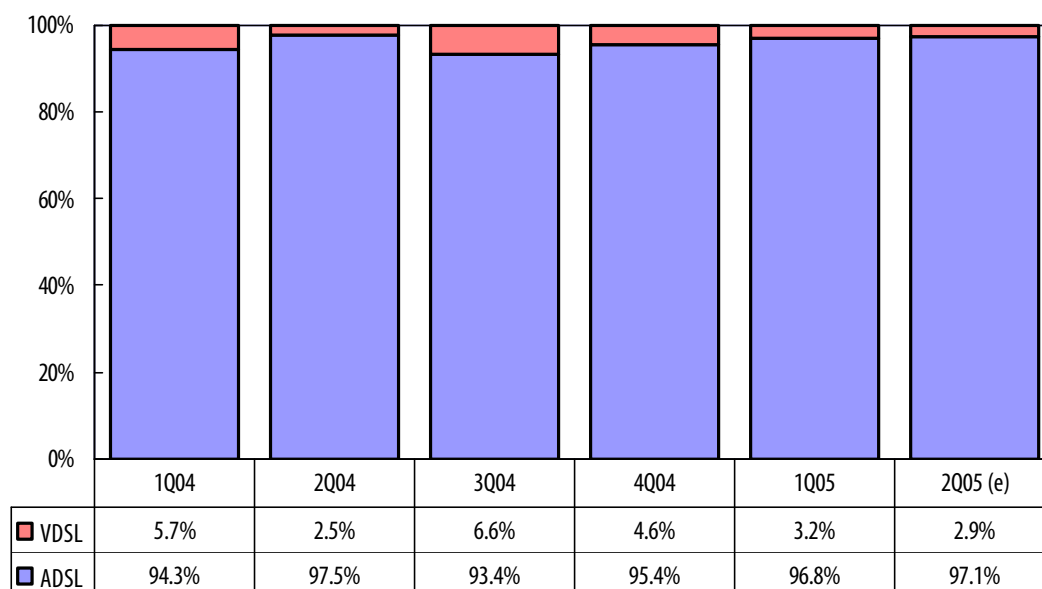
Source: DigiTimes Research, April 2005

The falling ASP for xDSL equipment will cause Taiwan's second-quarter shipment value to drop further in spite of the growth in volume. Production value is expected to fall to US\$295 million, with the ASP at US\$31.5.

## Technology

Weak demand for VDSL in Japan will continue to drive down the segment to 2.9% of the combined shipments of ADSL and VDSL equipment from Taiwan in the second quarter.

**Chart 10: Taiwan xDSL shipments by technology, 1Q04-2Q05**



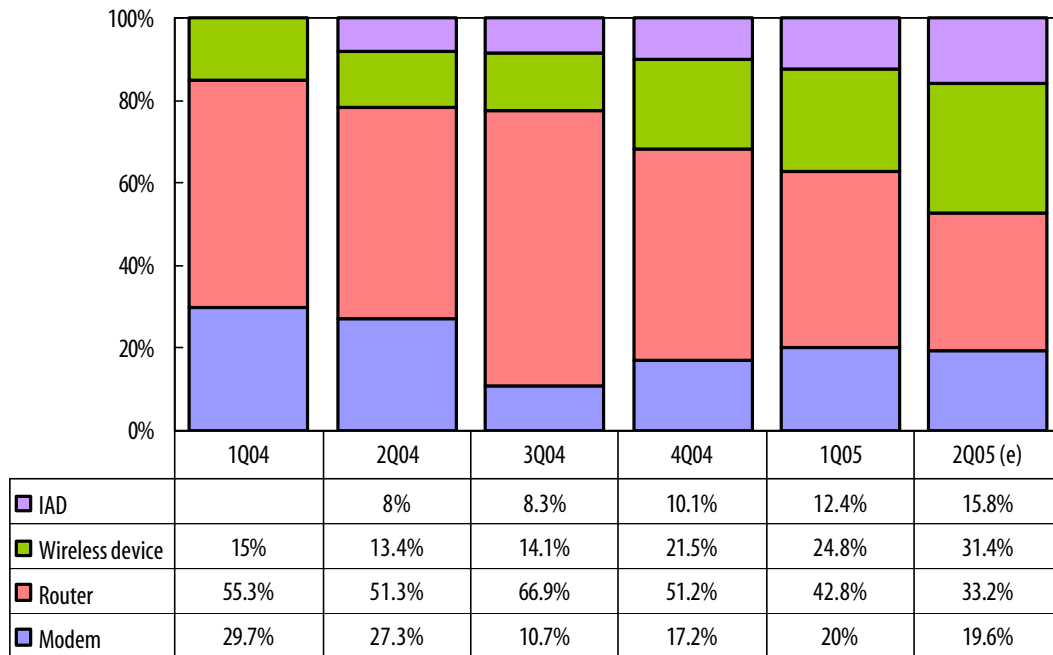
Source: DigiTimes Research, April 2005

## Products

With multipurpose xDSL equipment in strong demand in more developed markets, low-end xDSL modem will see substantial growth mostly in developing markets in the second quarter. Routers with wireless networking functions will carve a big portion out of the market for ordinary routers. CPE with wireless router functions will account for 31% of entire second-quarter shipments from Taiwan makers, up 6.6 percentage points sequentially, while ordinary routers will see a sharp decline in shipments. IAD shipments will grow on strong demand from the VoIP (voice over Internet Protocol) market.

Chunghwa Telecom (CHT), the largest fixed-line carrier and broadband service provider in Taiwan, recently awarded a consortium formed by Alcatel, Foxconn (the registered trade name of Hon Hai Precision Industry) and Zyxel a contract to supply about 900,000 lines of ADSL2+ equipment. The ADSL2+ equipment will include broadband solutions for central office equipment (COE) and CPE, and 80% of the CPE have to be equipped with built-in integrated 802.11g wireless capabilities. The procurement, the largest ever for a single bidding in the world's telecom sector, is expected to generate more demand for high-end xDSL equipment from other players.

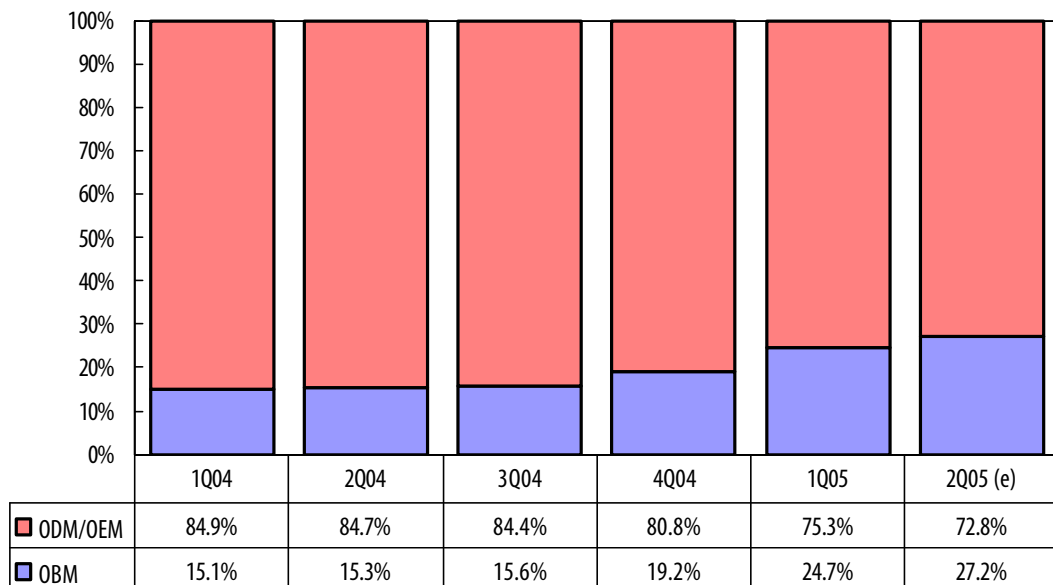
Lower production costs for ADSL2+ chips and wireless networking chips in the second quarter of 2005 will drive down the ASP for wireless xDSL CPE and increase their market penetration.

**Chart 11: Taiwan xDSL shipments by product type, 1Q04-2Q05**

Source: DigiTimes Research, April 2005

## Production mode

Online bidding has brought about changes in purchasing requirements, with many telecom players now accepting CPE shipped from other makers than major international vendors. Therefore, Taiwan makers' efforts in developing own-brand products have paid off. Their own-brand xDSL products' proportion will continue to grow to 27% of the total second-quarter shipments.

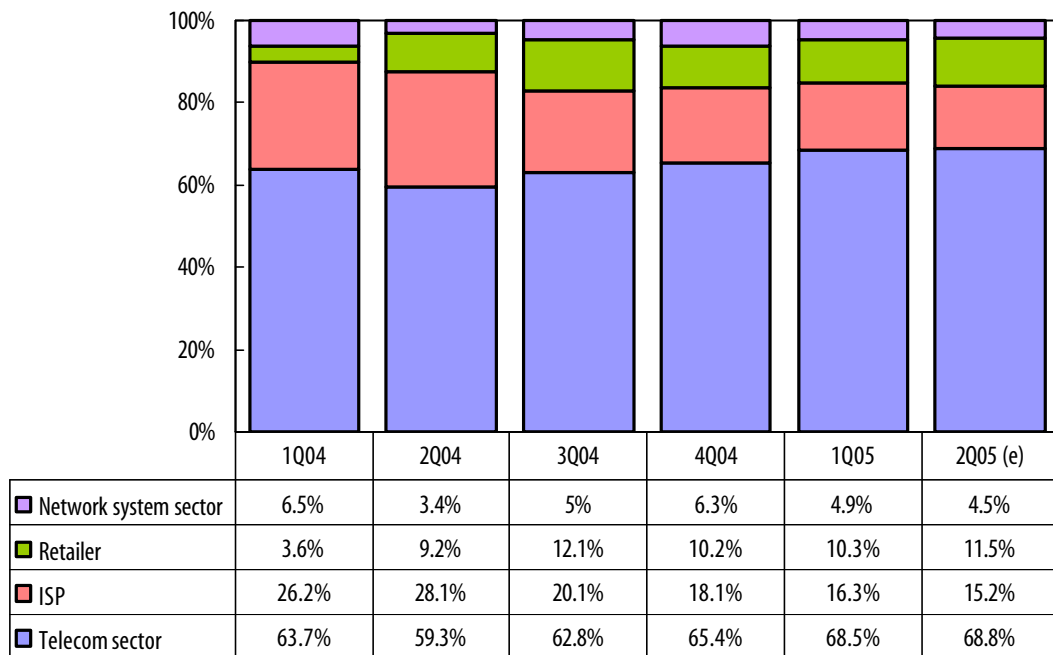
**Chart 12: Taiwan xDSL shipments by production mode, 1Q04-2Q05**

Source: DigiTimes Research, April 2005

## Clients

The telecom sector remains the top OEM client group for Taiwan's xDSL equipment makers in the second quarter. At the same time, demand from ISPs is in decline, while orders from retailers will grow on strong demand from broadband users who are increasingly more apt to shop their own xDSL equipment in the retail market. OEM orders from the network system sector will remain low.

**Chart 13: Taiwan xDSL shipments by OEM client type, 1Q04-2Q05**

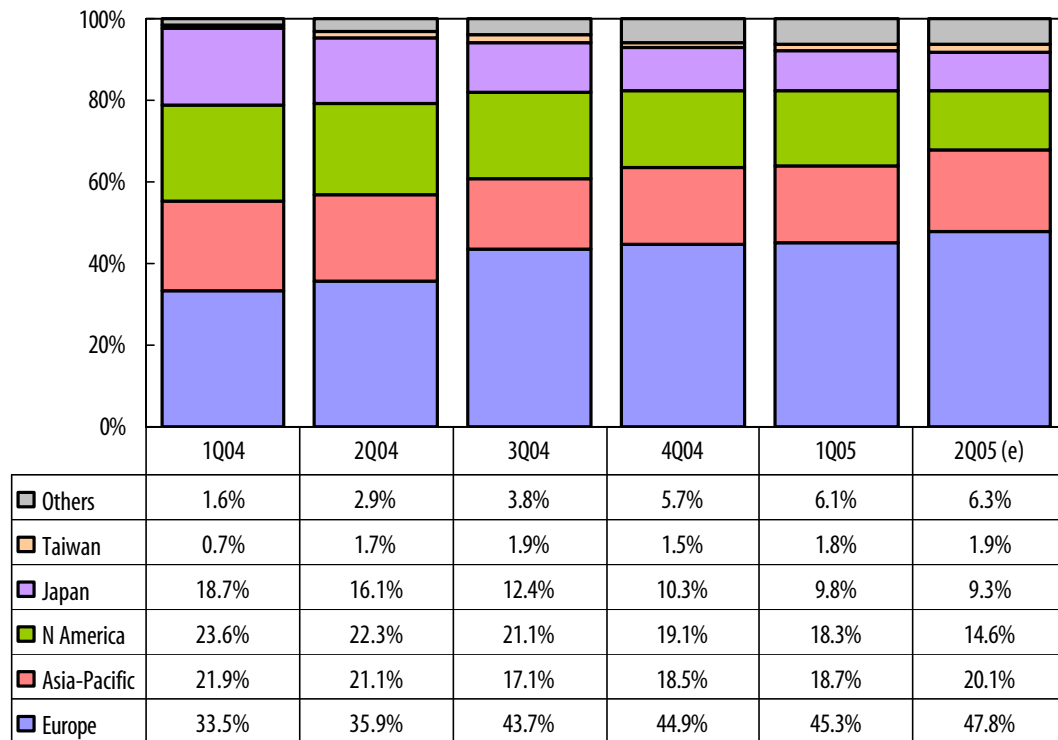


Source: DigiTimes Research, April 2005

## Markets

The fast growing ADSL markets in Europe will continue to boost Taiwan's shipments to the region. Europe will account for 48% of the total Taiwan shipments in the second quarter.

**Chart 14: Taiwan xDSL shipment by region, 1Q04-2Q05**



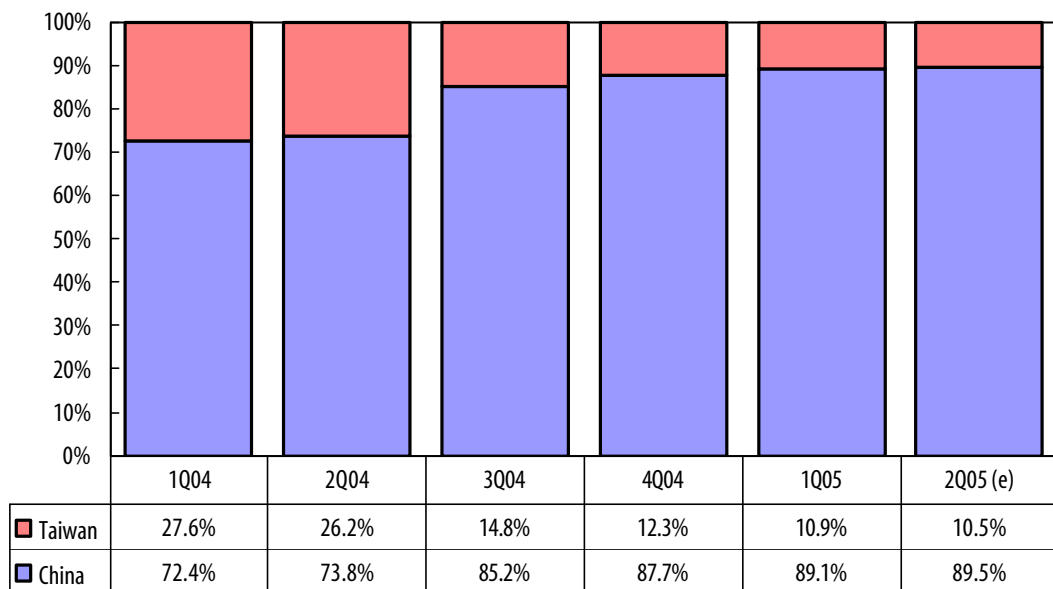
Source: DigiTimes Research, April 2005

The proportion of Taiwan shipments to North America will continue to decline in the second quarter, as cable modem remains the area's mainstream broadband technology. Shipment to Japan will drop slightly as a result of the availability of multiple broadband options in the country. Developing markets in the Asia-Pacific and other regions will record slight increases in shipment from Taiwan.

## Production base

With most of their production having already been moved to China, the Taiwan makers' shipments coming out their China facilities will stay at a similar percentage to that of the previous quarter. Taiwan's xDSL makers now mostly only keep the production of high-end wireless ADSL routers and IADs in Taiwan.

**Chart 15: Taiwan xDSL shipments by production base, 1Q04-2Q05**



Source: DigiTimes Research, April 2005

# Outlook

The xDSL market in Europe is fast growing. With more integrated services set to be launched in the next three years, the number of xDSL subscribers will rise sharply in Western Europe. The broadband market in Eastern Europe will also grow fast as the economy in the area takes off.

The broadband market in North America will see strong growth, but the entertainment and media giants in the region are taking the market towards the direction of cable modem and FTTx, offering little room for xDSL.

China, where subscriptions have been growing at a rate of 10 million each year, is expected to remain the fastest growing xDSL market in the Asia-Pacific region in the next three years. In other developing markets in the region, the percentage of growth may be high, but the actual number of subscribers will remain low compared to mature markets.

The fastest growing markets of the world in the next three years will be India, Brazil and Eastern Europe. Taiwan makers stand a good chance of entering these markets with own-brand products, or OEM shipments to their telecom sectors.

Own-brand products offer both higher margins and a chance of unshackling businesses from the low-margin OEM productions. Some Taiwan makers have already made some success in marketing own-brand products.