

## 附錄二、IC 卡市場及相關應用統計報導

### (Statistics for Smart Cards)

Although Asia's card market still lacks multi-application cards, great potential exists for specialized applications. Over time, smart cards will be most used with set-top boxes and mobile phones and not PCs as originally envisioned.

#### Global Smart Card Market By Industry, 2001 - 2003

Market (millions of units)	2001	2002	2003	Growth Forecast 2003 vs 2002
Mobile Comms	400	450	550	22%
Banking	145	181	220	22%
eGov, IT, PayTV & transit	196	263	357	36%
By Region				Share of Total
EMEA	883	923	974	46%
Asia-Pacific	558	597	656	31%
Latin America	322	346	402	19%
North America	38	58	85	4%

Source: [SchlumbergerSema](#), March 2002

#### Regional Breakdown of Financial Smart Cards, 1999 - 2004

Year	1999	2000	2001	2002	2003	2004
Asia-Pacific %	6.61	7.78	12.63	21.85	26.46	25.17
European Union %	90.82	84.09	73.92	59.85	49.49	43.82
North America %	0.37	4.59	8.31	11.79	14.64	19.5
Latin America %	1.84	2.69	3.67	4.79	7.79	9.81
Rest of World %	0.37	0.85	1.47	1.72	1.65	1.70

Source: [Frost & Sullivan](#), using 2000 as base year

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**Scope for Smart Cards Within eCommerce (in millions)**

<b>Year</b>	<b>PC</b>	<b>Set-Top Box</b>	<b>Mobile Phone</b>
<b>1998</b>	<b>-</b>	<b>3,016</b>	<b>-</b>
<b>1999</b>	<b>108</b>	<b>5,628</b>	<b>636</b>
<b>2000</b>	<b>471</b>	<b>8,700</b>	<b>4,044</b>
<b>2001</b>	<b>1,056</b>	<b>11,815</b>	<b>10,435</b>
<b>2002</b>	<b>1,891</b>	<b>15,031</b>	<b>19,877</b>
<b>2003</b>	<b>3,287</b>	<b>18,662</b>	<b>32,344</b>

Source: [Datamonitor](#)

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**Number of Smart Cards Issued in Asia**

<b>Country</b>	<b>Number</b>	<b>Primary Uses</b>
<b>Australia</b>	<b>10 million</b>	<b>Phone, POS, ticketing</b>
<b>Cambodia</b>	<b>8.5 million</b>	<b>National ID</b>
<b>China</b>	<b>3 million</b>	<b>eCash, utilities, tolls</b>
<b>Hong Kong</b>	<b>5 million</b>	<b>Transit, eCash, parking</b>
<b>Malaysia</b>	<b>2 million</b>	<b>eCash, ID, tolls</b>
<b>Philippines</b>	<b>35 million</b>	<b>Social security</b>
<b>Singapore</b>	<b>0.7 million</b>	<b>Tolls, transit, eCash,</b>
<b>South Korea</b>	<b>9 million</b>	<b>Transit, eCash</b>
<b>Taiwan</b>	<b>n/a</b>	<b>Transit, eCash</b>
<b>Thailand</b>	<b>n/a</b>	<b>eCash, loyalty</b>

**Number of smart cards in Asia: 70 million**

## Statistics for eCommerce applications

Although the Asia-Pacific region lags Europe and the US in eCommerce, IDC predicts that the sale of eCommerce applications in the region, excluding Japan, will reach USD 1.3 trillion by 2003.

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### Why Customers Dropped Online Bill Payment Service

Reason	Percentage
Didn't understand system	25%
Payment problems or issues	25%
Felt service had no value	13%
Found it inconvenient	11%
Considered it expensive	11%
Don't know	7%

Source: [Gartner](#), December 2002

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### Worldwide Sales of Internet Appliances, 2000 - 2005

Region	Units 2000	Units 2005	CAGR 2000-2005
USA	7.4 million	51.8 million	47.6%
North America	8.2 million	57.4 million	47.6%
W Europe	5.0 million	57.1 million	62.8%
E Europe	1.3 million	34.4 million	92.5%
Asia-Pacific	12.1 million	93.5 million	50.5%
Sth/Cen America	1.9 million	41.7 million	85.5%
Rest of World	0.55 million	17.8 million	100.5%
Worldwide	29.0 million	302 million	59.8%

Source: [allNet Devices](#)

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## Global Payments Industry Metrics, 2000 & 2010

Region	2000 (USD)	2010 (USD)	Compound Annual Growth
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### Volume of Transactions

Europe	60.38 billion	107.08 billion	5.9%
Americas	114.08 billion	195.08 billion	5.5%
Asia	38.6 billion	91.5 billion	9.0%

### Value of Transactions

Europe	383.8 trillion	676.7 trillion	5.8%
Americas	720.0 trillion	1,104.0 trillion	4.4%
Asia	372.9 trillion	535.3 trillion	3.7%

### Average Revenue Per Transaction

Europe	0.99	0.69	-3.5%
Americas	1.36	0.94	-3.6%
Asia	1.03	0.81	-2.4%

Source: [Boston Consulting Group](#), March 2003

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## P2P Payments In The US, By Funding Method, 2001 - 2006

Method	2001	2002	2003	2004	2005	2006
Debit card	10%	9%	9%	8%	7%	6%
Credit card	40%	36%	32%	27%	23%	19%
Direct debit	50%	55%	60%	65%	70%	75%

P2P payments are expected to total 9% of all online retail by 2006

Source: [eMarketer](#), August 2002

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### Costs Of Traditional Vs Online Purchasing Processes (in USD)

Process Step	Traditional Process	Purchase card + eCommerce
Buying	59.00	3.40
Paying	12.00	0.34
Reconciling/data integration	19.00	0.70
Average transaction cost	90.00	4.44

Source: [American Express](#)/Ernst & Young, June 2002

### US Consumer Transactions In 2001, 2010 And 2020

Payment Means (in USD billions)	2001	2010	2020
Electronic	2.5	10.5	30.25
Debit Card	11	28.5	49
Credit Card	21.5	31	38
Direct Checks	29	20	15
Consumer Checks	35	29	24
Cash	51	62	52

Source: [The Nilson Report](#), April 2002

### Growth of US Purchasing Cards In Terms of Transaction Volume

Year	Total (USD bn)
2001	65.9
2002	82.3
2003	103.7
2004	130.7

2005                      164.7

Source: [Celent Communications](#), March 2002

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**Payment Instruments As a Percentage Of Total eCommerce**

Year	ACH/Closed Networks	Cards	Other
2001	3.2	82.8	13.8
2002	4.6	81.3	14.0
2003	5.5	81.6	12.8
2004	6.4	81.7	11.7
2005	7.3	82.0	10.6

Source: [Celent Communications](#), April 2002

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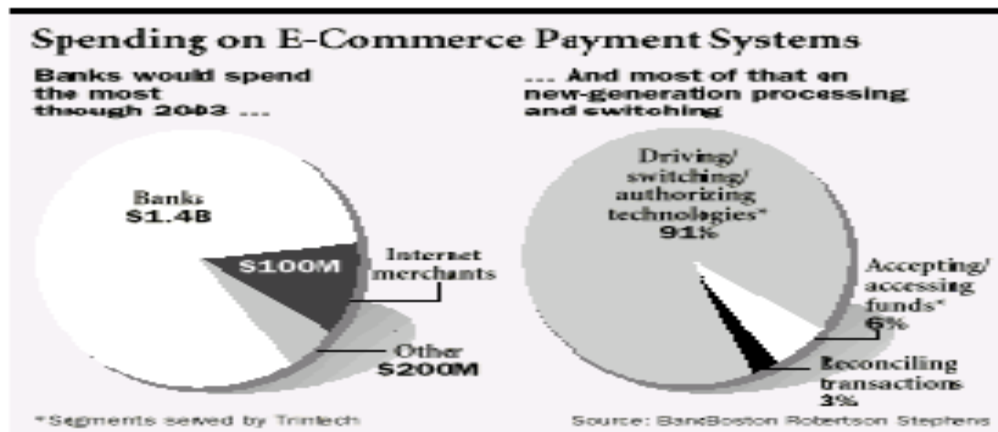
**Proportion of Payment Mechanisms In The US, 2000 - 2010**

Volume (\$ Tril.)	2000	%	2005	%	2010	%
Paper	3.41	65.2	3.45	51.3	3.24	38.2
Cards	1.60	30.6	2.54	37.6	3.92	46.4
Electronic	0.22	4.2	0.74	11.1	1.30	15.4
Total	5.23	100	6.73	100	8.46	100

Source: [The Nilson Report](#) , December 2001

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**Spending on eCommerce Payment Systems**



Source: [BancBoston Robertson Stephens](#)

### Forbes European Internet Survey, 1999

A breakdown of domestic European Internet trends together with annual disposable income and data on card payments from Forbes Digital Tool.

Continue to: [Forbes European Internet Survey](#)

### Payment Systems In The US, 1999 - 2010

Volume (\$ trillion)	1999	2005	2010
Paper	\$3.3 (69%)	\$3.4 (50%)	\$3.6 (36%)
Cards	\$1.4 (28%)	\$2.7 (39%)	\$4.3 (49%)
Electronic	\$0.2 (3%)	\$0.7 (11%)	\$1.3 (15%)
Total	\$4.9 (100%)	\$6.8 (100%)	\$8.7 (100%)

Source: [The Nilson Report](#)

### UK Internet Users' Attitude To Online Credit Card Security

Sentiment	Percentage
Believe it is unsafe	46
Believe it is safe	28
Don't know	24
N/A	1

Source: [Which? Online](#), July 2002

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### Payment Methods of Online Shoppers In Germany

Mechanism	2002 (%) (Group 1)	2002 (%) (Group 2)	2001
Payment Of Invoice	83.1	92.1	72.3
Debit Transfer	63.1	84.0	47.6
Cash on Delivery	63.6	66.4	46.6
Cheque/giro payment	30.9	42.3	11.7
Credit card (SSL)	36.9	58.2	32.6
Credit card (unsecured)	11.0	16.2	5.2
Credit card (SET)	8.2	10.8	3.2
Micro- or aggregated payment	7.5	53.5	3.1
Mobile phone	6.8	34.9	3.4
Prepaid	1.9	0.9	1.5

Note: Group 2 represents users of FirstGate click&buy and/or paybox; Group 1 shows consumers not using either solution

Source: [IZV](#), March 2002

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### Ratio Of Payment Mechanisms In 2000, 2005 and 2010

Mechanism	2000 (%)	2005 (%)	2010 (%)
Electronic	4.2	11.1	15.4
Credit/other cards	24.6	26.9	32.1
Debit cards	6.0	10.8	14.2
Cash	19.5	18.5	16.7
Checks	45.7	32.8	21.6

Source: [The Nilson Report](#) /Jefferies & Co, May 2002

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### Consumer Payment Media Used At The POS

Mechanism	% Used	Average Payments/Month
Cash	99	10.9
Check	86	5.7
Credit Card	83	6.7
PIN Debit	50	4.7
Signature Debit	44	3.5
Prepaid Card	17	0.3
Check Truncation	6	0.5

Source: [American Banker](#), December 2001

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### Predicted US B2C eCommerce Revenues, 2002

Firm	Date of Estimate	Total (bn)
IDC	2001	\$ 116.8
GartnerG2	December 2001	\$ 91.9
Yankee Group	2001	\$ 86.6
Giga Group	November 2001	\$ 75.0
eMarketer	March 2002	\$ 75.0
Forrester Research	November 2001	\$ 74.0
Cyber Dialogue	2000	\$ 56.6
Jupiter Media Metrix	October 2001	\$ 39.3

Source: [eMarketer](#), April 2002

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### **Consumer Trust in Card Payment Methods**

<b>Transaction method</b>	<b>Per cent trusting method</b>
<b>ATM</b>	<b>66 %</b>
<b>Single multi-application card</b>	<b>40 %</b>
<b>POS</b>	<b>49 %</b>
<b>Card absent</b>	<b>23 %</b>
<b>Telephone</b>	<b>18 %</b>
<b>Online transactions</b>	<b>7 %</b>

**Source:** [De La Rue Card Systems](#)

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### **Barriers To Online Purchasing, 2000**

<b>Concerns</b>	<b>Total</b>
<b>Credit card security</b>	<b>79%</b>
<b>Disclosure of personal details</b>	<b>77%</b>
<b>Distrust of Web retailers</b>	<b>48%</b>
<b>Complex order process</b>	<b>21%</b>
<b>Time consuming order process</b>	<b>20%</b>
<b>Unfamiliar with online Web storefronts</b>	<b>40%</b>

**Source:** [PriceWaterhouseCoopers](#) :