

Design Session

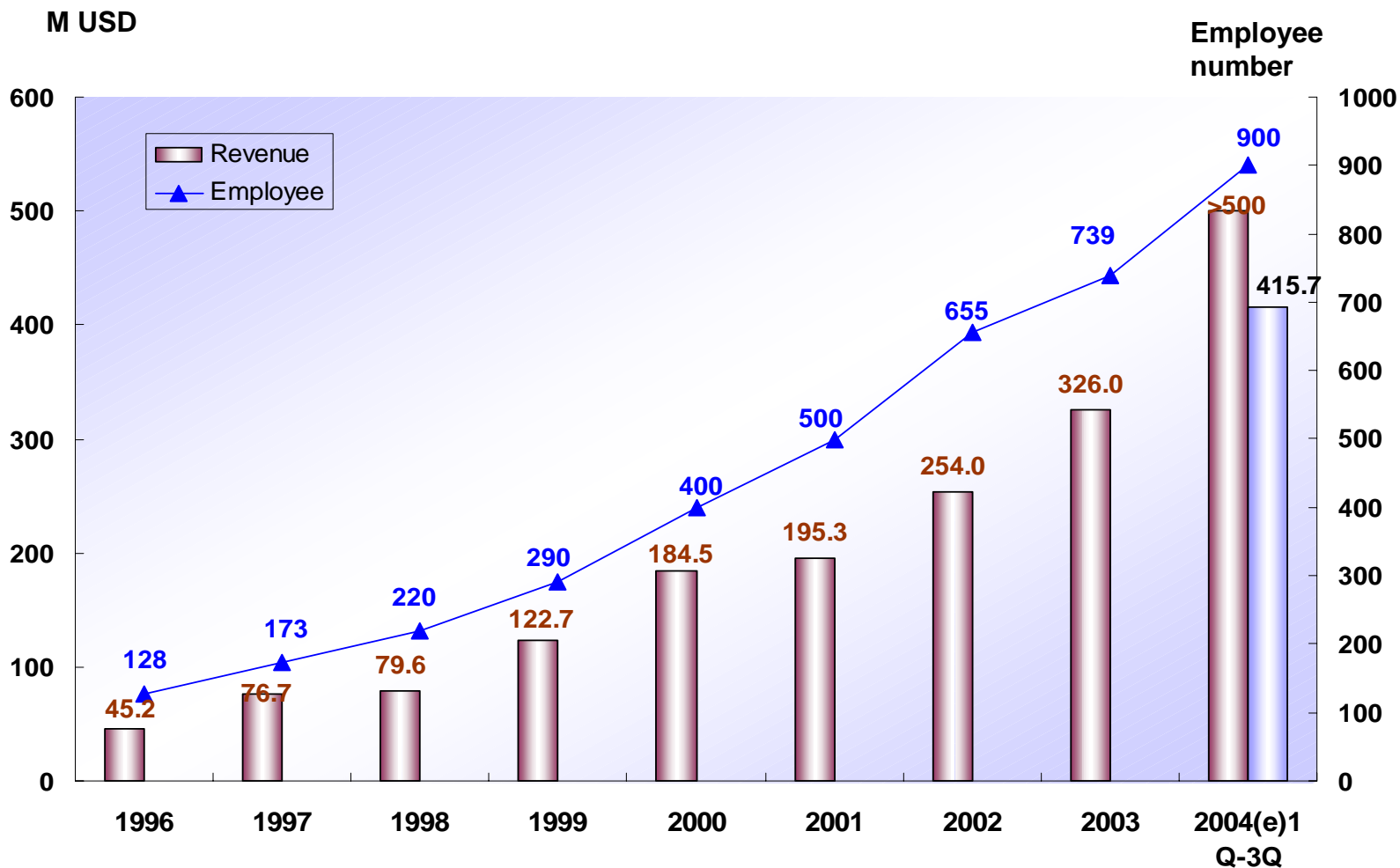
From a Fabless Perspective

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San Jose, CA

Outlines

- Sunplus Snapshot
- Fabless Design Communities Overview
- Sunplus Perspective

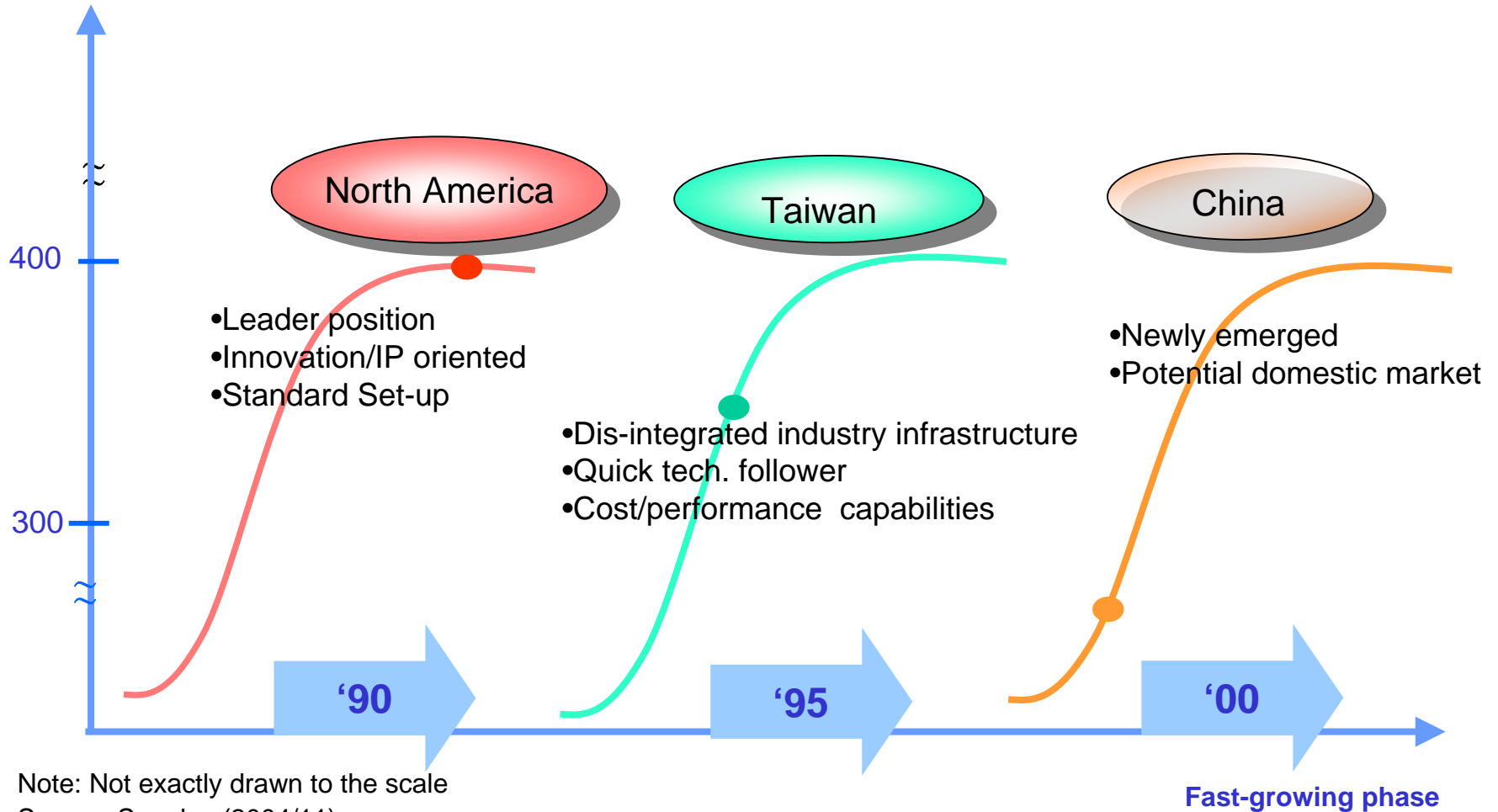
A Closer look of Sunplus



Source: Sunplus(2004/10)

The Migration of Three Design Communities

Fabless numbers



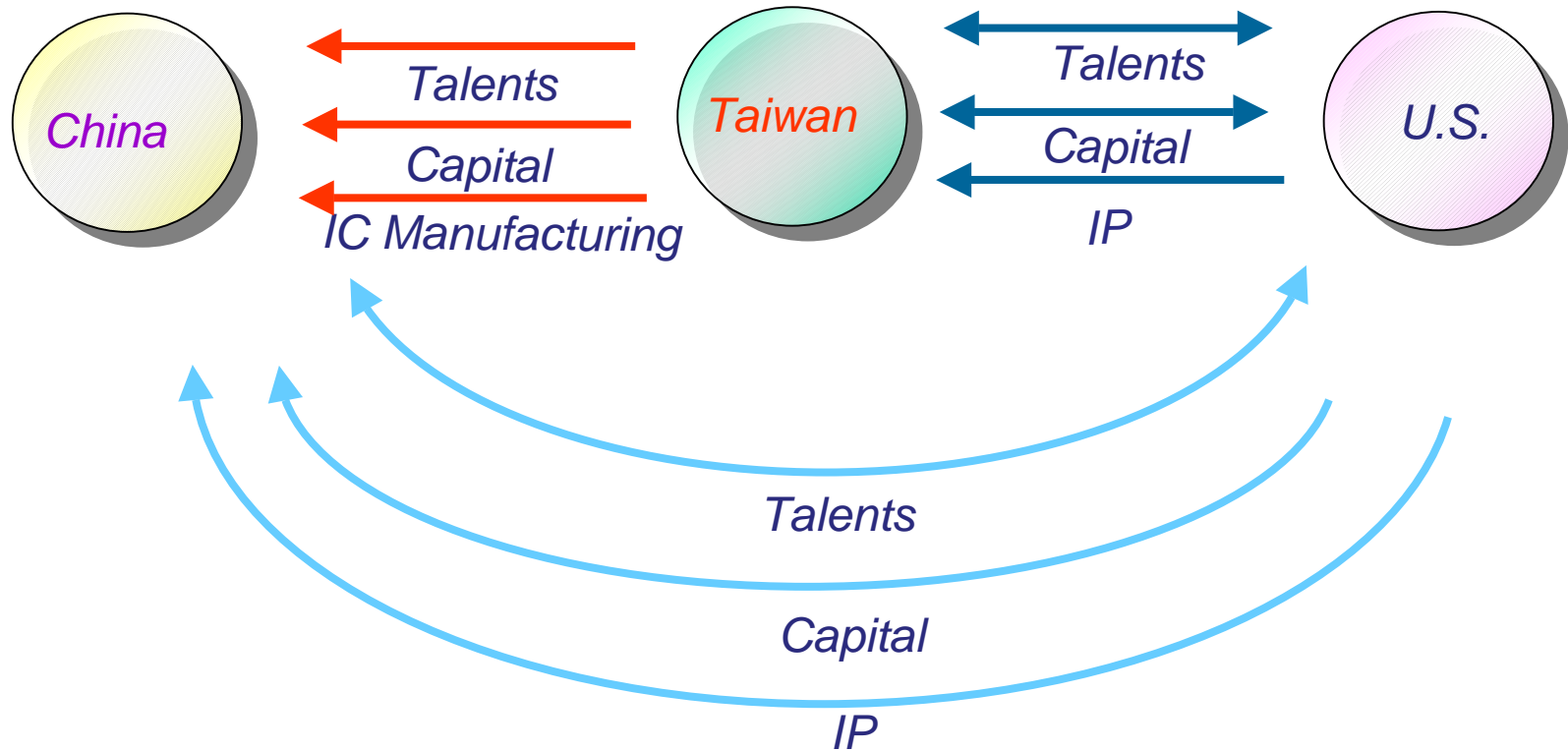
Note: Not exactly drawn to the scale
Source: Sunplus (2004/11)

Three Geographic Fabless Industry Overview

Area	North America	Taiwan	China
Applications	CPU/DSP/Graphics/FPGA Communication IC	Computer IC/Consumer IC Emerging: handsets/Multimedia IC	MCU/Consumer IC/IC Card Emerging: CPU/DSP/Handsets IC
Major Product Technology	0.13-0.18u	0.18-0.35u	>0.5u
Average Gross Margin*	52.1%	34.5%	23.6%
2003 Fabless Revenue (\$B)	14.7B	5.5B	0.54B
WW Fabless Share (%)	65.0%	28.0%	2.7%

Notes: Average gross margin quotes data from geographic top 10 or leading fabless companies' financial results in Q2'04
 Source: IEK/ITRI, CCID, FSA, Sunplus(2004/11)

Gold Rush to China !!



China— An Alluring Rose

- World manufacturing center causes rapid growing demand
- Huge potential domestic market
- Abundant of low cost / high quality engineering resources supply
- Generous government incentives

China— An Alluring Rose Having Thorns

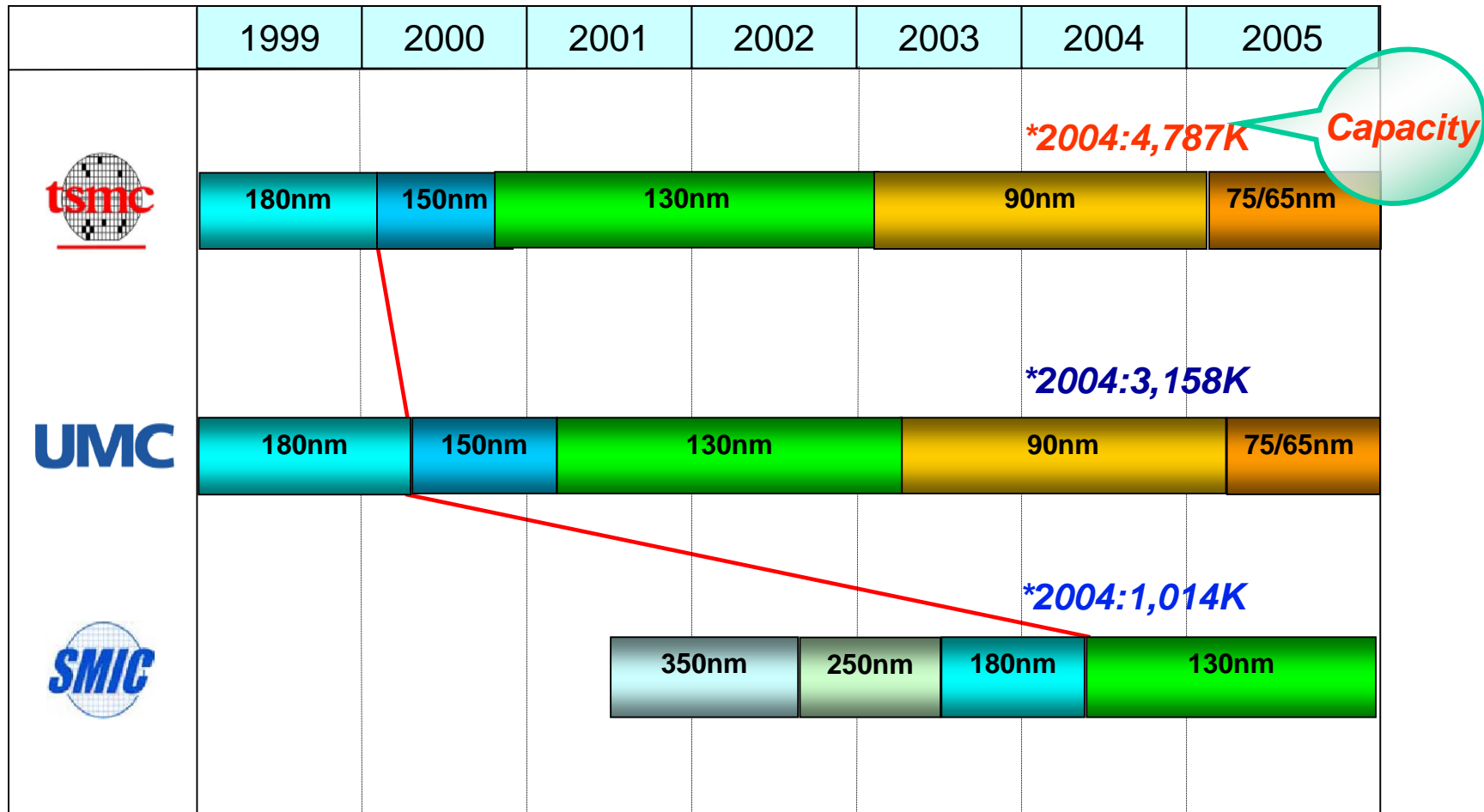
- IP security concerns
- High employee turn-over rate
- Not ready to develop complicated chip independently yet
- Unique regulations and business game rules
- Low cost, low margin game players

China Foundries Status

Company	Location	Current Products	Wafer Size(inch.)	Geometry	Technology Source	K Units 2Q04	K Units End-04(f)	Production year
ASMC	Shanghai	Analog/Logic	5,6,8	1-0.35	Philips	10	15	1992
Belling	Shanghai	Logic	4,8	1.2	Alcatel	5	5	1988
CSMC	Wuxi	Mixed-signal Logic	5,6	1.2-0.35	Simens, Lucent	25	25	1994
GSMC	Shanghai	Mixed-signal Logic	8,12	0.25-0.18	Oki, Sanyo, SST	15	22	Sep-03
He Jian	Shanghai	Mixed-signal Logic	8	0.35-0.13	UMC	25	35	Aug-03
Huahong NEC	Shanghai	Memory/Logic	8	0.35-0.18	NEC	35	40	1999
SGNEC	Beijing	Logic	6	0.8-0.35	NEC	35	40	1994
SMIC	Shanghai, Beijing, Tianjin	Mixed-signal Logic/Memory	8,12	0.35-0.13	Fujitsu, Chartered Infineon, Elpida etc.	67	90	2001
TSMC China	Shanghai	Mixed-signal Logic	8	0.35-0.25	TSMC	0	0.5	2004

Source: Nomura, IEK/ITRI(2004/11)

Major Foundries Comparison



Note: Equivalent of 8 inch. Wafer in 2004
 Source: IEK/ITRI(2004/11)

Perspectives on China Foundry

- China is capable of manufacturing down to 0.18m
- Capabilities of supporting industry still beyond expectations
- Government incentives in favor of domestic fabrication will boost the foundry industry
- Complicated tax rebate procedures slow down the pace to move forward

U.S—A Partner

- Important IP source & tool provider
- Industrial standard developers
- End customer approval
- Key component partners

The U.S.—A Partner Hard to Embrace

- Hard to recruit talents in U.S.
- Challenges in multi-culture management
- High expense for IP licensing, M & A
- High legal expense and risk

Taiwan—The Gain

- IP portfolio gradually built-up
- More experiences in management and development
- High quality and competitive manufacturing clusters
- More exposed to global collaborations and competitions

Taiwan—The Pain

- Margin diminished as the industry becoming matured
- Limited local engineering resources
- New games will be in Rome coliseum, facing world-class gladiators
- Potential competitors from China are growing

Taiwan IC Industry Outlook

Billions of US dollars

Item \ Year	1999	2000	2001	2002	2003	2004(e)	2005(f)
Total IC production value	13.1	22.8	15.6	19.2	23.8	34.5	39.7
Design	2.3	3.7	3.6	4.3	5.5	7.7	9.2
Fabrication	8.2	14.9	9.0	11.1	13.7	20.2	23.1
(Foundry)	4.3	9.4	6.1	7.3	9.0	12.9	14.7
Packging	2.0	3.1	2.3	2.8	3.4	4.8	5.4
Testing	0.6	1.0	0.7	0.9	1.2	1.8	2.0
IC product value	6.1	9.1	6.5	8.2	10.2	15.0	17.5

Notes: NTD exchange rate for USD varies from 31.4 to 34.4

Source: IEK/ITRI(2004/10)



Thank you!