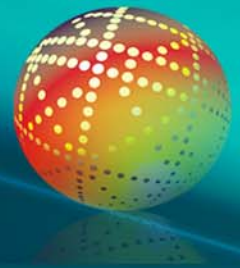


# Industrija poluprovodnika – svetski tržišni trendovi i položaj GlobalFoundries

**Jasna Matić**

Specijalna savetnica ministra finansija i  
ekonomije za konkurentnost i  
ekonomiju znanja



# Ko sam ja?

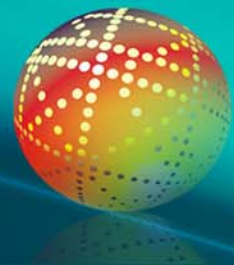
- Građevinski fakultet BU, dipl.ing.
- Washington University St Louis, USA, MBA
  - Harvard Kennedy School of Government Executive Education Courses at on IT Project Management, Leadership and Economic Development, 2007, 2009, 2011
  - Technology and Policy Program, Science and Technology Policy Institute, Seoul, Korea, 2004



# Ko sam ja?

## 20 godina iskustva:

- Mašinoprojekt Koprang, Beograd,
- World Bank, Washington DC, USA
- Savetnica potpredsednika Vlade SRJ Miroljub Labusa
- Vodeći savetnik za nacionalnu konkurentnost Booz Allen Hamilton
- Direktorka SIEPA
- Državni sekretar za ekonomske odnose sa inostranstvom
- Ministarka telekomunikacija i informacionog društva
- Državna sekretarka za digitalnu agendu
- Specijalna savetnica ministra finansija i ekonomije
- Član Komisije Ujedinjenih nacija za brodbend i digitalni razvoj



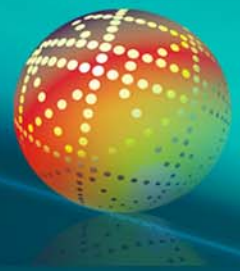
# Industrija poluprovodnika svetski tržišni trendovi



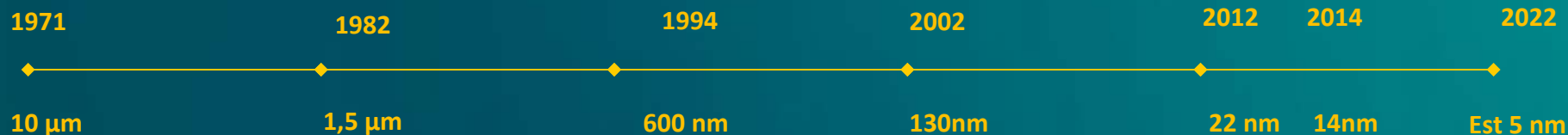
- **Robustan rast**
- **Velika osetljivost na ekonomsku krizu zbog brzog zastarevanja zaliha i brza reakcija zbog velike koncentracije**

# Ugradnja čipova u sve veći broj proizvoda





# Izuzetno brz tehnološki razvoj



## Semiconductor manufacturing processes

10 μm	— 1971
3 μm	— 1975
1.5 μm	— 1982
1 μm	— 1985
800 nm	— 1989
600 nm	— 1994
350 nm	— 1995
250 nm	— 1997
180 nm	— 1999
130 nm	— 2002
90 nm	— 2004
65 nm	— 2006
45 nm	— 2008
32 nm	— 2010
22 nm	— 2012
14 nm	— est. 2014
10 nm	— est. 2015
7 nm	— est. 2020
5 nm	— est. 2022

- Paralelno je tekao proces povećanja prečnika wafera, tako da su investiciona ulaganja u procesnu opremu rasla velikom brzinom
- Za izgradnju novog proizvodnog pogona u najnovijoj tehnologiji danas je potrebno ~ 5 milijardi dolara
- Kako bi tako velike investicije bile isplative, od izuzetno je velikog značaja ekonomija obima, koja dovodi do oštre borbe za što veći udeo na tržištu



# Velika koncentracija proizvodnje

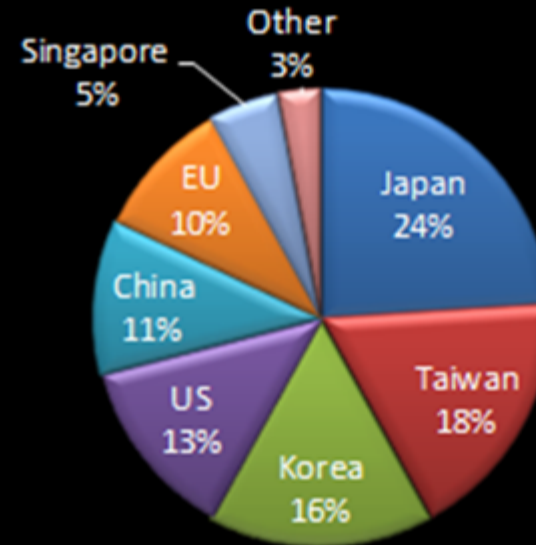
- 97% svetske proizvodnje poluprovodnika odvija se u 6 zemalja+ EU
- 25 kompanija proizvodi 70% svih poluprovodnika

2012F Top 20 Semiconductor Sales Leaders  
(\$M, Including Foundries)

2012F Rank	2011 Rank	Company	Headquarters	2011 Tot Semi	2012F Tot Semi	2012/2011 % Change
1	1	Intel	U.S.	49,697	49,370	-1%
2	2	Samsung	South Korea	33,483	30,425	-9%
3	3	TSMC*	Taiwan	14,600	17,022	17%
4	7	Qualcomm**	U.S.	9,828	12,807	30%
5	4	TI	U.S.	12,900	12,063	-6%
6	5	Toshiba	Japan	12,745	11,075	-13%
7	6	Renesas	Japan	10,653	9,839	-8%
8	9	SK Hynix	South Korea	9,403	8,802	-6%
9	10	Micron	U.S.	8,571	8,654	1%
10	8	ST	Europe	9,631	8,384	-13%
11	11	Broadcom**	U.S.	7,160	7,740	8%
12	13	Sony	Japan	6,093	6,245	2%
13	12	AMD**	U.S.	6,568	5,423	-17%
14	14	Infineon	Europe	5,599	4,984	-11%
15	21	GlobalFoundries*	U.S.	3,480	4,560	31%
16	15	Fujitsu	Japan	4,430	4,397	-1%
17	17	NXP	Europe	4,147	4,300	4%
18	18	Nvidia**	U.S.	3,939	4,274	9%
19	16	Freescale	U.S.	4,391	3,787	-14%
20	20	UMC*	Taiwan	3,760	3,734	-1%
Top 10 Total				171,511	168,441	-2%
Top 20 Total				221,078	217,885	-1%

\*Foundry \*\*Fabless  
Source: IC Insights' Strategic Reviews Database

Semiconductor Production by Region



Source: WSTS, SouthBay Research LLC

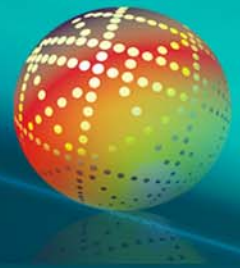


# Foundries

**Top 12 Worldwide Semiconductor Foundries by Revenue (Millions of U.S. Dollars)**

2012 Rank	2011 Rank	Company	2012 Revenue	2012 Market Share (%)	2011 Revenue	2011-2012 Growth (%)
1	1	TSMC	17,130	49.5	14,533	17.9
2	3	Globalfoundries	4,200	12.1	3,580	17.3
3	2	UMC	3,602	10.4	3,604	-0.1
4	4	SMIC	1,702	4.9	1,319	29.0
5	9	Samsung*	1,295	3.7	470	175.5
6	5	TowerJazz	639	1.8	613	4.2
7	6	IBM Microelectronics	634	1.8	545	16.3
8	10	Powerchip Technology	614	1.8	431	42.5
9	11	Hua Hong NEC**	602	1.7	-	NM
10	7	Vanguard International	580	1.7	516	12.4
11	8	Dongbu HiTek	478	1.4	483	-1.0
12	12	MagnaChip Semiconductor	390	1.1	338	15.4
		Others	2,711	7.8	3,322	-18.4
		<b>Total Market</b>	<b>34,577</b>	<b>100.0</b>	<b>29,754</b>	<b>16.2</b>





## Naša saradnja - uvod

- Saradnja Republike Srbije i Ujedinjenih Arapskih Emirata
- Prezentacija investicionih mogućnosti u Srbiji održana za COO Mubadala i predsednikom Upravnog odbora ATIC-a 8. januara
- Follow up sastanak posvećen isključivo projektu proizvodnje čipova 8. januara



# UAE long-term economic diversification strategy

05

## The Abu Dhabi Economic Vision 2030

The Abu Dhabi Economic Vision 2030 is a long-term roadmap for sustainable economic progress through diversification. ADIC's focus on the advanced technology sector forms one of the key engines for broadening the sectors of the Emirate's economic activity, making it a shining example on the International business stage.

## رؤية أبوظبي الاقتصادية 2030

تعد رؤية أبوظبي الاقتصادية 2030، خارطة طريق طويلة المدى تهدف إلى تحقيق تطور اقتصادي مستدام من خلال تنويع مصادر الدخل الوطني، وتعزيز شركة أباتك بوصفها على القيادة واستثمار إستراتيجية في مجالات التكنولوجيا المتطورة التي تعتبر أحد المحركات الرئيسية من أجل توسيع قطاعات مجالات النشاط الاقتصادي في الإمارة. تعمل هذه الرؤية مشرفاً في ساحة الأعمال الجديدة.



# UAE long-term economic diversification strategy

**Abu Dhabi Investment Fund**



**Mubadala Development Company**  
manages 50 bill USD in UAE and internationally



**ATIC Advanced Technology Investment Company**



**GlobalFoundries**

fastest growing semiconductor company in the world





# ATIC

## Advanced Technology Investment Company



**ATIC supports the diversification of Abu Dhabi by serving as a catalyst for Advanced Technology through investments, research and development, and developing local talent.**

**U partnerstvu sa MIT razvojen master kurs iz mikroelektronike na Masdar Institutu**



# Global Foundries

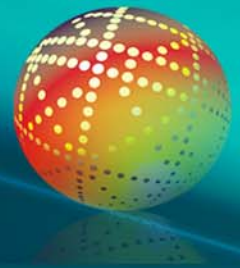


2009 kupili proizvodnju  
od AMD  
Drezden

2010 kupili Chartered  
Semiconductor  
Sngapur

2012 puštena u rad nova  
fabrika  
Malta, NY

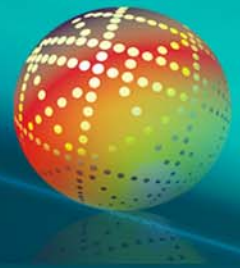
Ukupna investicija preko 14 milijardi dolara



# Pregovori

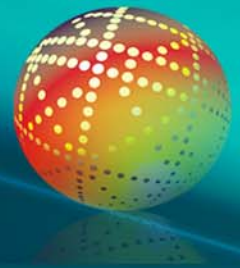
- Vlada Republike Srbije osnovala pregovaračke timove za različite oblasti saradnje između Srbije i UAE, između kojih i tim za pregovore o industriji čipova koji čine predstavnici ministarstva finansija, telekomunikacija, prosvete i nauke i potpredsednika Vlade
- 6-člani pregovarački tim UAE predvodi izvršni direktor ATIC-a





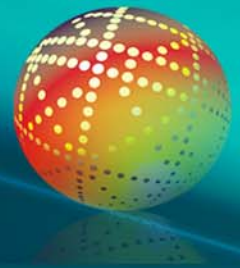
# Pregovori

- Upitnik sa 137 pitanja iz 5 oblasti:
  - I. Human Capital
  - II. Research and Science Agenda
  - III. Infrastructure and Business Services
  - IV. Promotion and Business Development
  - V. Law and Regulation



# Konsultacije

- Od 8 januara do sada održane su brojne konsultacije sa univerzitetima, institutima, domaćim i stranim firmama, kao i sa velikim brojem naših stručnjaka u inostranstvu



# Sledeći koraci

- Očekuje se poseta ekspertskeg / pregovaračkog tima koji bi predvodio izvršni direktor ATIC-a