



Global Digital Economy: Opportunities For Russia In The Next Industrial Wave

SemiExpo Russia 2019

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Future Horizons + ELINT SP

Future Horizons

- ❑ Active In Russia/Eastern Europe Since Founded In 1989 (100+ Visits Since)
- ❑ World's First Analysis Report On Russia/CIS/East Europe SC Industry (1990)
- ❑ East-West Electronics Moscow Office/Research Representation (1991)
- ❑ Strategic Partnership With Electronintorg/ELINT SP (1993)
- ❑ World's First Analysis Report On Russia/CIS Electronics Industry (1993)
- ❑ World's First East-West Electronics Industry Forum (1993)
- ❑ World's First Russian/CIS Distribution Forum (1995)
- ❑ World's First Analysis Report On Russia/CIS Distribution (1996)

ELINT SP (Previously Electronintorg SP)

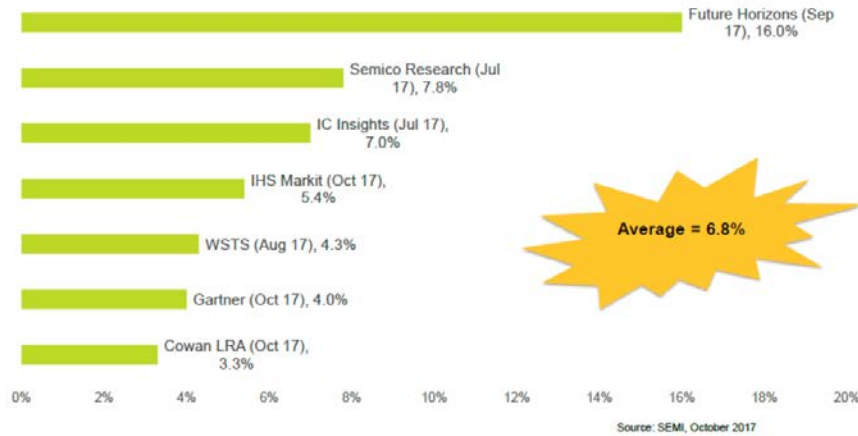
- ❑ Successor To Electronintorg V/O & Electointorg Co. Ltd
Face Of Soviet & Russian Electronics Industry Since 1968
- ❑ Focus In Business Development, Representation, Marketing, Business Support,
Electronics Industry Exhibitions & Professional Translation

**World's Premier Authority On The Russian Electronics Industry
Plus 5 Decades Experience In The Global Semiconductor Market**



SC Market Update

2018 Semiconductor Forecasts



- We've ALWAYS Said This & Were Prepared To Make A Public Stand
- Went Out On A Limb In 2018 ... But When You're Right, You're Right!
- Actual Growth = 13.7%
2H Slowdown Due To Economic Impact of Tariffs & China Slowdown

2019 Outlook



Quarter	IFS2019	Value (\$b)
Q1-19	-3.0%	118.388
Q2	2.4%	121.230
Q3	7.0%	129.716
Q4	-2.5%	126.473
2019	1.0%	495.806

Forecast



Quarter	IFS2019	Value (\$b)
Q1-19	-2.5%	118.999
Q2	4.0%	123.758
Q3	8.6%	134.402
Q4	-1.0%	133.058
2019	4.0%	510.216

Bull



Quarter	IFS2019	Value (\$b)
Q1-19	-4.0%	117.168
Q2	-2.0%	114.824
Q3	5.1%	120.680
Q4	-2.0%	118.267
2019	-4.0%	470.940

Bear

- Q1 Off To A Very Bad Start (-15.5%)
- Lingering Supply Chain Capacity Constraints Will Impact 2H
- Q2/2H Outlook Looking Strong
- Negative Growth Overall Now Looking Likely (Bear Scenario)



GDP Wildcard – Biggest Single Risk

- ◆ **US Growth Decline As Fiscal Stimulus Unwinds**
- ◆ **China Growth Remains Strong But Gradually Declining**
- ◆ **Elevated Downside Risks Due To Trade Barriers & Political Risks**
- ◆ **Tightened Monetary Policy Impacting Financial Markets**
- ◆ **Protectionist Reactions To Structural Changes Derailing Growth**

Balance Of GDP Risks Now Tilted To The Downside ...
Tighter Conditions Ebbing Upside Surprises ...



Chip Industry Basics Also Under Stress

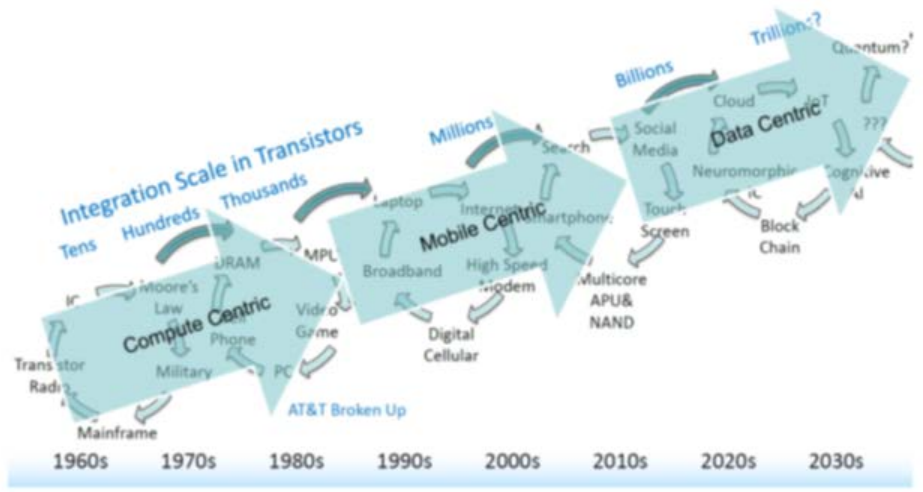
- **Traditional Semiconductor Companies Being Squeezed**
... By Vertically Integrated Organisations
- **Few Start-ups Can Fantasize About Challenging Incumbents Head-On**
... But They Can Readily Either Find A Profitable Niche Or Be Acquired
- **Raising Money For Hi-Tech Chip Start-Ups In 2015-16 Was A Nightmare**
... Big, Acquisition-Hungry Tech Are Now Re-Targeting Semiconductors
- **China Has Shown A Particular Interest In Developing New A.I. Chips**
... So Too Is India ... Russia Should Too
- **Need To Develop A Collaborative Culture in Russia**
... Both Horizontally & Vertically To Apply Industry Pressure On Establishment

Collaboration WORKS!

~50 Years Professional & Personal Experience (Since 1970)



Future Growth



- ◆ AI & Neural Networks
- ◆ Robotics & Automation
- ◆ Bio & e-Medical
- ◆ Quantum Computing
- ◆ Alternative Energy
- ◆ Home Automation & Infotainment
- ◆ Automotive & Transportation
- ◆ Smarter Smart Phones

**Data Farming, Analysis & Applications ...
How They Transform Society & The Economy**



Long-Term SC Market Prognosis

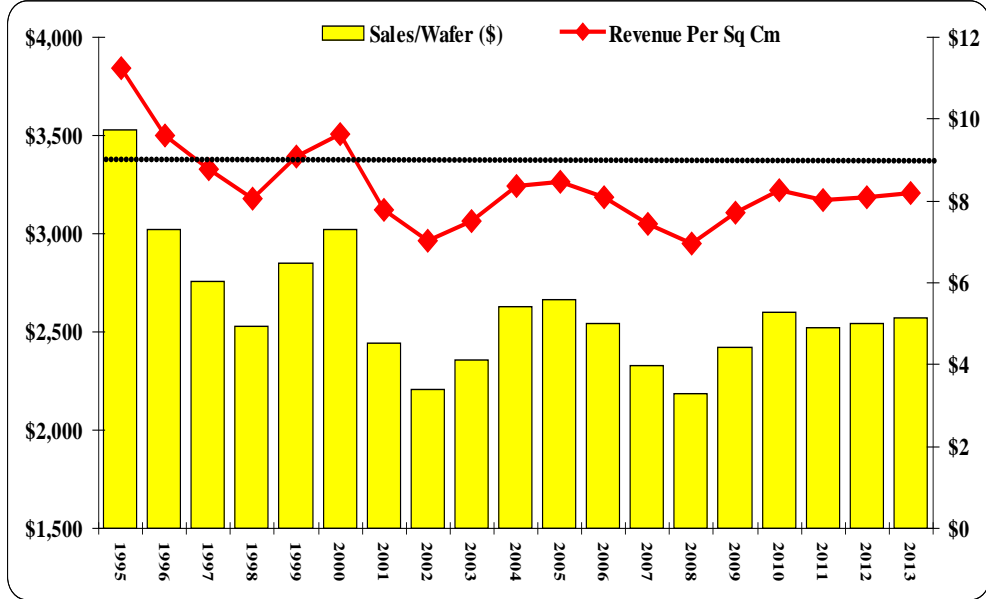
Rank	Country	Proj. GDP (2030, PPP)	GDP (2017, PPP)	% change
#1	China	\$64.2 trillion	\$23.2 trillion	+177%
#2	India	\$46.3 trillion	\$9.5 trillion	+387%
#3	United States	\$31.0 trillion	\$19.4 trillion	+60%
#4	Indonesia	\$10.1 trillion	\$3.2 trillion	+216%
#5	Turkey	\$9.1 trillion	\$2.2 trillion	+314%
#6	Brazil	\$8.6 trillion	\$3.2 trillion	+169%
#7	Egypt	\$8.2 trillion	\$1.2 trillion	+583%
#8	Russia	\$7.9 trillion	\$4.0 trillion	+98%
#9	Japan	\$7.2 trillion	\$5.4 trillion	+33%
#10	Germany	\$6.9 trillion	\$4.2 trillion	+64%

- ◆ **Ultimately GDP Should Converge With Share Of Global Population**
- ◆ **Advanced & Developing Economies' Divide Continues To Close**

- ◆ **Disruption Is Inevitable ... It Brings New Opportunities**
- ◆ **Moore's Law Is Not Just About Technology But Systems & Applications**
- ◆ **New Application Drivers Need Brain Power & Intellect**
- ◆ **Russia Can Drive Change Not Just Be Driven By It**
- ◆ **The Next Industrial Wave Is A Natural Fit For Russia**



Know Your Value Proposition



- \$0.05 At The Chipless/IP Level**
- \$4.50 At The Foundries**
- \$9.00 For Semiconductors**
- \$50 For OEMs**
- \$450 For Services /Content**

\$50-\$100 High-End MPU ... \$6-7 MCU/Std Logic/Memory

Need To Circumvent The Industry Bars (Quantum Layers)

IP First ... End Equipmant Next ... SC Foundries Will Follow

Source: SEMI/Company Reports/Future Horizons



Need A Disciplined Approach (FH Value Test)

1. **What Problem Are You Solving**
2. **What Value Are You Creating**
3. **How Will You Make Money**
4. **Barriers To Entry**
5. **Competition (Companies Not Products)**
6. **Is The Market Big Enough / Growing**
7. **How To Validate Idea**
8. **Map Out Your World**
9. **PEST (Political, Economic, Social, Technological) Or SWOT**
10. **How To Overcome Customer Inertia**

We Can Help You Succeed



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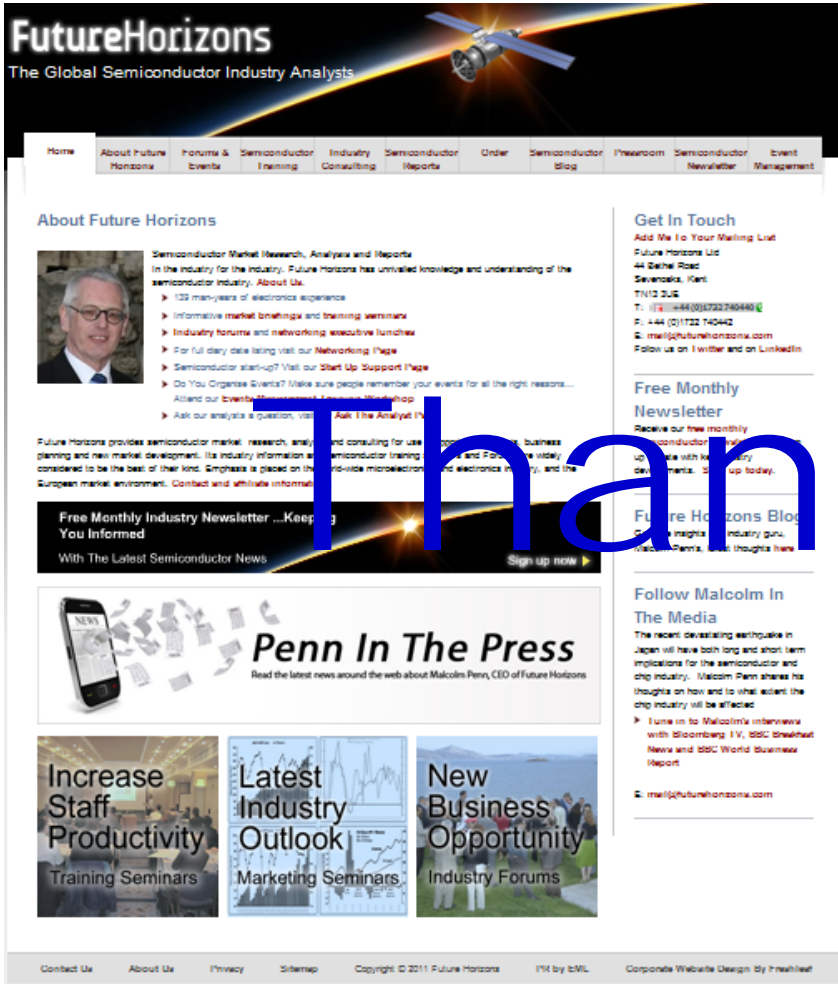


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Already Helped 50+ Firms Establish Business Relationships In Russia
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We Can Help You Too ...



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