Future Horizons

- Active In Russia/Eastern Europe Since Founded In 1989 (100+ Visits Since)
- East-West Electronics Moscow Office/Research Representation (1991)
- Strategic Partnership With Electronintorg/ELINT SP (1993)

ELINT SP (Previously Electronintorg SP)

- Successor To Electronintorg V/O & Electrointorg 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
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

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

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

- 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

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Need To Circumvent The Industry Bars (Quantum Layers)

IP First ... End Equipment 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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Already Helped 50+ Firms Establish Business Relationships In Russia
(Incl. ADI, ASM-L, DEC, IR, LG, Mietec, Nikon, Samsung, Synopsys, TI...)
We Can Help You Too ...

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