המהפכה הטכנולוגית והשוק עבודה קושו דובעה תיוואלה השכונת תייגול הממה התרבויות המגלות דסימ הףטוש הלוי
GLOBALIZATION

Exceptional Economical Growth

Growth in Global Trade

Manufacturing Goes Global

Cumulative number of trade agreements

- Goods & services
- Goods

80 70 60 50 40 30 20 10 0

THE GOOD AND THE BAD

Productivity is Growing

Inequality is Expanding

Pressures on Environment and Natural Resources

Figure 1. Real hourly wages and output per hour

Income Before Transfers and Taxes

CPI = consumer price index
Note: Hourly wages are calculated using the consumer price index.
Labor market under pressure

- Infinite labor supply
- Urbanization immigration
- Massive Automation
- Aging population
2007 – Major Disruption

- Open-Source Software
- Smartphone
- Social
- Cloud
- Big Data

- Cellular
- Internet
New platforms have changed Human Behavior
Social Sciences will have to be Rewritten

- IT as the mediator and shaper of relationships between people, organizations and communities
- Sociology, psychology and education cannot remain the same
First Came the Platforms

Open-Source Software  Smartphone  Social  Cloud  Big Data

Internet
But Consumers Wanted More

SOFTWARE / SaaS // APPLICATIONS // PRODUCTS // GADGETS

SmartPhone
Social
Cloud
Internet
The Global Age Of Consumer

- Services & Full Ecosystems
- Wealth of SW and Products
- Powerful Platforms

SOFTWARE / SaaS // APPLICATIONS // PRODUCTS // GADGETS

Open-Source Software
SmartPhone
Social
Cloud
Big Data
Internet
ENTERPRISE – Opportunity and Survival

THE WHAT
Disrupt or be Disrupted

THE HOW
Transform or Die

- Massive Automation
- Cloud Everything
- New Employment models
Most Industries are still Lagging
Since the Ford Model T

First Airplanes

Early Medical Procedures
The world of IOT
THE ERA OF ARTIFICIAL INTELLIGENCE

- Ubiquitous intelligence
- Unlimited amounts of data
- Ever more complex problems
- Non linear programming

- Rapid development cycles
- Fraction of the cost
Machines Communicating and Making Decisions
AI is Changing The Whole Innovation Stack
AI based Next Generation Computing

- DNA storage
- Massive Parallel Processing
- Quantum computing

NG AI BASED COMPUTING
Advanced AI SW Platforms to Scale Innovation
AI ENABLED PRODUCTS

AI SW PLATFORMS

NG AI BASED COMPUTING

Autonomous EV
Autonomous Drones
Autonomous Robots
Workforce Automation
Home Assistance
Health Monitors
Risk Management
NEXT GENERATION SERVICES

AI ENABLED PRODUCTS

AI SW PLATFORMS

NG AI BASED COMPUTING

Mobility as a Service

Digital Farming

Monitoring Aging People

Energy Management

Construction as a Service

Additive Manufacturing
SERVING NEW FRONTIERS

NEXT GENERATION SERVICES

AI ENABLED PRODUCTS

AI SW PLATFORMS

NG AI BASED COMPUTING
Age Of Machine: The New Innovation Stack

SERVING NEW FRONTIERS

NEXT GENERATION SERVICES

AI ENABLED PRODUCTS

AI SW PLATFORMS

NG AI BASED COMPUTING
Automation is Likely to Dramatically Accelerate Skill Shifts, Compared With Previously Historical Cycles

McKinsey Global Institute report, May 2018
Accelerated skill shifts

Evolution in skill categories
% of time

Skill categories

<table>
<thead>
<tr>
<th></th>
<th>2002¹</th>
<th>2016</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical and manual skills</td>
<td>33</td>
<td>31</td>
<td>26</td>
</tr>
<tr>
<td>Basic cognitive skills</td>
<td>20</td>
<td>18</td>
<td>15</td>
</tr>
<tr>
<td>Higher cognitive skills</td>
<td>21</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>Social and emotional skills</td>
<td>17</td>
<td>18</td>
<td>21</td>
</tr>
<tr>
<td>Technological skills</td>
<td>9</td>
<td>11</td>
<td>16</td>
</tr>
</tbody>
</table>

Change in hours worked
% difference

<table>
<thead>
<tr>
<th></th>
<th>2002–16</th>
<th>2016–30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical and manual skills</td>
<td>▲ 3</td>
<td>▼ 11</td>
</tr>
<tr>
<td>Basic cognitive skills</td>
<td>▲ 1</td>
<td>▼ 14</td>
</tr>
<tr>
<td>Higher cognitive skills</td>
<td>▲ 9</td>
<td>▲ 9</td>
</tr>
<tr>
<td>Social and emotional skills</td>
<td>▲ 13</td>
<td>▲ 26</td>
</tr>
<tr>
<td>Technological skills</td>
<td>▲ 27</td>
<td>▲ 60</td>
</tr>
</tbody>
</table>

McKinsey Global Institute report
# Across sectors

<table>
<thead>
<tr>
<th>Skills</th>
<th>Banking and insurance</th>
<th>Energy and mining</th>
<th>Healthcare</th>
<th>Manufacturing</th>
<th>Retail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical and manual skills</td>
<td>Negative</td>
<td>Positive</td>
<td>Neutral</td>
<td>Positive</td>
<td>Positive</td>
</tr>
<tr>
<td>Basic cognitive skills</td>
<td>Positive</td>
<td>Negative</td>
<td>Neutral</td>
<td>Positive</td>
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</tr>
<tr>
<td>Higher cognitive skills</td>
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<td>Positive</td>
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<tr>
<td>Technological skills</td>
<td>Positive</td>
<td>Negative</td>
<td>Neutral</td>
<td>Positive</td>
<td>Positive</td>
</tr>
</tbody>
</table>
Share of jobs requiring few digital skills is already dropping

Employment by levels of job digitization

- **High**
  - 2002: 5
  - 2016: 23

- **Medium**
  - 2002: 40
  - 2016: 48

- **Low**
  - 2002: 56
  - 2016: 30

**Example occupations**

- Software developers
- Financial managers
- Lawyers
- Nurses
- Auto mechanics
- Cooks
- Construction
- Assembly line workers
### Effect on Revenues

<table>
<thead>
<tr>
<th></th>
<th>Fundamental redesign as vision for influence of automation and AI on business model</th>
<th>Expected revenue increase from automation and AI &gt;10%</th>
<th>Financial performance compared to industry average</th>
<th>Investment budget spent on digital technologies &gt;25%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Limited adopters</strong></td>
<td><img src="chart1.png" alt="Chart" /></td>
<td><img src="chart2.png" alt="Chart" /></td>
<td><img src="chart3.png" alt="Chart" /></td>
<td><img src="chart4.png" alt="Chart" /></td>
</tr>
<tr>
<td>23</td>
<td>24</td>
<td>45</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td><strong>Extensive adopters</strong></td>
<td><img src="chart5.png" alt="Chart" /></td>
<td><img src="chart6.png" alt="Chart" /></td>
<td><img src="chart7.png" alt="Chart" /></td>
<td><img src="chart8.png" alt="Chart" /></td>
</tr>
<tr>
<td>38</td>
<td>71</td>
<td>82</td>
<td>67</td>
<td></td>
</tr>
</tbody>
</table>
Continuous learning – The most important element for a changing workforce
<table>
<thead>
<tr>
<th>Concern</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees won't upgrade skills fast enough</td>
<td>26</td>
</tr>
<tr>
<td>Workers will not be adaptable enough</td>
<td>24</td>
</tr>
<tr>
<td>Employees will lack requisite technical skills</td>
<td>23</td>
</tr>
<tr>
<td>Unable to attract and retain talent needed</td>
<td>23</td>
</tr>
<tr>
<td>Skills needed in the future will change more rapidly than in the past</td>
<td>22</td>
</tr>
</tbody>
</table>

**Employers main concern:**

Employees that do not upgrade skills fast enough
But – There will be other stakeholders responsible for future workforce

- **Firms** can collaborate with educators to reshape school and college curricula
- **Industry associations** can help build talent pipelines
- **Labor unions** can help with cross-sector mobility
- **Governments** can strengthen safeguards for workers in transition and encourage mobility, for ex: portable benefits
Online learning platforms continue to grow

Visitors to all websites (M)

- 2016: 175
- 2017: 204
- 2018: 227

11% growth from 2017 to 2018
הגלובליזציה והטכנולוגיה מעפילים לחצים долго שוק העבודה.

AI מתקני עדשים חדשניים – עידן המכותב.

המשכלה הטכנולוגית תשתנה דרך חדשנית ותעשיית-repeat

.

אוטומציה חדשנית עוסקת בהחלפת אנושי בעלים כשירים-

בובים.

האצה המשמעויות בשינויי הכישורים הנדרשים-

מערכת החינוך וההכשרה מתאימה אוינו מתאימה את-

עמי.

לימוד מתמשך קייתי לתהליכים ראשיים והמתאמה-

הליך וברטבים משמעויות שמאכילים שיתוף פעילות.
Thank you

sdovrat@viola.vc