The Finnish technology industry is comprised of five sub-sectors

**ELEKTRONICS AND ELECTROTECHNICAL INDUSTRY**
ABB, Ensto, Murata Electronics, Nokia, Planmeca, Polar Electro, Suunto, Vacon, Vaisala...

**METALS INDUSTRY**
Boliden, Componenta, Kuusakoski, Luvata, Outokumpu, Ovako, Sacotec, SSAB ...

**MECHANICAL ENGINEERING**
Abloy, Cargotec, Fiskars, Glaston, Kone, Konecranes, Metso, Meyer Turku, Neles, Normet, Oras, Patria, Pemamek, Ponsse, Prima Power, Stala, Valmet, Valtra, Wärtsilä...

**INFORMATION TECHNOLOGY**
Basware, CGI, Digia, Efecte, Enfo, F-Secure, Fujitsu Finland, IBM, Innofactor, Knowit, Microsoft, Nixu, TietoEVRY...

**CONSULTING ENGINEERING**
AFRY, A-Insinöörit, Citec, Elomatic, Etteplan, FCG, Granlund, Ramboll, Rejlers, Sitowise, SWECO, WSP...
The Finnish technology industry is comprised of five sub-sectors

**ELEKTRONICS AND ELECTROTECHNICAL INDUSTRY**
- Data communications equipment, electrical machinery, medical technology
- Turnover (2022): 21 billion euros
- Personnel (2022): 40,700

**METALS INDUSTRY**
- Steel products, non-ferrous metals, castings, metallic minerals
- Turnover (2022): 19 billion euros
- Personnel (2022): 16,000

**MECHANICAL ENGINEERING**
- Machinery, metal products, vehicles
- Turnover (2022): 38 billion euros
- Personnel (2022): 135,800

**INFORMATION TECHNOLOGY**
- IT services, applications and programming
- Turnover (2022): 19 billion euros
- Personnel (2022): 83,500

**CONSULTING ENGINEERING**
- Expertise for construction industry and infrastructure
- Turnover (2022): 7 billion euros
- Personnel (2022): 54,100
The technology industry – the largest export sector in Finland

- Over 50% of total exports.
- Some 338,000 employed directly in the sector, including indirect effects 720,000 people.
- Effect on value added totaling €63 billion, or 29% of GDP value added.
- Bring to Finland €23 billion tax revenue annually.
- Investments almost EUR 6.0 billion annually in Finland.
- 65% of private-sector R&D investment.
Value added to the economy generated by the technology industry is EUR 55 billion, or over 28% of GDP * (2017)

A total of EUR 54.5 billion

- **Impact on technology industry** (direct influence): 28.8 billion (53%)
- **Impact on other industries** (indirect influence): 15.6 billion (29%)
- **Impact on private consumption** (income effect): 10.1 billion (18%)

*) GDP value added was EUR 193.3 billion in 2017.
Source: Economic Impact of the Technology Industry in Finland 11/2018
Technology industry generates nearly 650,000 jobs in Finland (over 25% of all employees) (2017)

A total of 644,900 employees

10 jobs in the technology industry bring 11 jobs to the rest of the economy

- Impact on technology industry (direct influence)
- Impact on other industries (indirect influence)
- Impact on private consumption (income effect)

Source: Economic Impact of the Technology Industry in Finland 11/2018
Every job in the technology industry generates almost another job in the services (2017)

Impact on other industries and on private consumption: 340,300 employees

- Services*: 295,100 (87%)
- Primary production: 12,200 (3%)
- Processing*: 33,100 (10%)

*) Excl. the services industries in the technology industry.
Source: Economic Impact of the Technology Industry in Finland 11/2018
Technology industry generates over 18 billion euros in tax revenue annually in Finland (2017)

A total of EUR 18.2 billion

- Impact on technology industry (direct influence)
- Impact on other industries (indirect influence)
- Impact on private consumption (income effect)
Turnover of the technology industry in Finland

Source: Macrobond, Statistics Finland, Technology Industries of Finland
Export of technology industry goods from Finland by area in 2023

Total goods exports 41.50 billion euros*

- North America: 5.10 billion € (14.4%)
- Western Europe: 22.02 billion € (53.1%)
- Central and Eastern Europe: 4.99 billion € (12.0%)
- Asia: 5.76 billion € (13.9%)
- South and Middle America: 1.29 billion € (3.1%)
- Africa: 0.74 billion € (1.8%)

*) In addition to goods exports the sector exported services worth some 16-18 billion euros.
Source: Finnish Customs, Statistics Finland
Turnover of the industry and technology industry in Finland

Latest information: November 2023

Technology Industry
-3 %

Industry
-8 %

Index 2005=100

Change: 1-11,2023 / 1-11,2022, %
Turnover of the technology industry in Finland

Index 2005=100

Change: 1-11,2023 / 1-11,2022, %

Information Technology 5 %
Consulting Engineering 5 %
Mechanical Engineering 3 %
Metals Industry -20 %
Electronics and Electrotechnical Industry -6 %

Latest information: November 2023

Source: Macrobond, Statistics Finland
Value of new orders in the technology industry* in Finland


*) Excl. metals industry, game industry and data center companies

Export: -23 % | 31 %
Domestic: -5 % | 40 %
Combined: -19 % | 33 %
Value of order books in the technology industry* in Finland

---|---|---
Export: | -19 % | -5 %
Domestic: | -5 % | 0 %
Combined: | -16 % | -3 %

*) Excl. metals industry, game industry and data center companies

Value of new orders in the electronics and electrotechnical industry in Finland

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<tbody>
<tr>
<td>2010</td>
<td>2200</td>
<td>2100</td>
<td>100</td>
<td>-27 %</td>
<td>18 %</td>
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<tr>
<td>2011</td>
<td>2300</td>
<td>2200</td>
<td>110</td>
<td>-21 %</td>
<td>16 %</td>
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<tr>
<td>2012</td>
<td>2400</td>
<td>2300</td>
<td>120</td>
<td>-26 %</td>
<td>18 %</td>
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<tr>
<td>2013</td>
<td>2500</td>
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<td>130</td>
<td>-29 %</td>
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<td>2014</td>
<td>2600</td>
<td>2500</td>
<td>140</td>
<td>-31 %</td>
<td>20 %</td>
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<td>2015</td>
<td>2700</td>
<td>2600</td>
<td>150</td>
<td>-33 %</td>
<td>21 %</td>
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<tr>
<td>2016</td>
<td>2800</td>
<td>2700</td>
<td>160</td>
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<td>2017</td>
<td>2900</td>
<td>2800</td>
<td>170</td>
<td>-37 %</td>
<td>24 %</td>
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<tr>
<td>2018</td>
<td>3000</td>
<td>2900</td>
<td>180</td>
<td>-39 %</td>
<td>26 %</td>
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<tr>
<td>2019</td>
<td>3100</td>
<td>3000</td>
<td>190</td>
<td>-41 %</td>
<td>28 %</td>
</tr>
<tr>
<td>2020</td>
<td>3200</td>
<td>3100</td>
<td>200</td>
<td>-43 %</td>
<td>30 %</td>
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<tr>
<td>2021</td>
<td>3300</td>
<td>3200</td>
<td>210</td>
<td>-45 %</td>
<td>32 %</td>
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<td>2022</td>
<td>3400</td>
<td>3300</td>
<td>220</td>
<td>-47 %</td>
<td>34 %</td>
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<tr>
<td>2023</td>
<td>3500</td>
<td>3400</td>
<td>230</td>
<td>-49 %</td>
<td>36 %</td>
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</table>


3/5/2024 Technology Industries of Finland
Value of order books in the electronics and electrotechnical industry in Finland

Million euros, at current prices

<table>
<thead>
<tr>
<th>Year</th>
<th>Export</th>
<th>Domestic</th>
<th>Combined</th>
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<td>2023</td>
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<tbody>
<tr>
<td>Export</td>
<td>-21 %</td>
<td>16 %</td>
</tr>
<tr>
<td>Domestic</td>
<td>-16 %</td>
<td>4 %</td>
</tr>
<tr>
<td>Combined</td>
<td>-21 %</td>
<td>14 %</td>
</tr>
</tbody>
</table>


3/5/2024 Technology Industries of Finland
Value of new orders in the mechanical engineering in Finland

Million euros, at current prices

<table>
<thead>
<tr>
<th>Year</th>
<th>Export</th>
<th>Domestic</th>
<th>Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
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<td>2022</td>
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<tr>
<td>2023</td>
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</tbody>
</table>

Change:
- Export: IV,2023 / IV,2022 = -17 %, IV,2023 / III,2023 = 51 %
- Domestic: IV,2023 / IV,2022 = -10 %, IV,2023 / III,2023 = 37 %
- Combined: IV,2023 / IV,2022 = -16 %, IV,2023 / III,2023 = 48 %


Technology Industries of Finland

3/5/2024
Value of order books in the mechanical engineering in Finland


<table>
<thead>
<tr>
<th>Year</th>
<th>Export</th>
<th>Domestic</th>
<th>Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Export</td>
<td>-19 %</td>
<td>-11 %</td>
<td></td>
</tr>
<tr>
<td>Domestic</td>
<td>-5 %</td>
<td>-3 %</td>
<td></td>
</tr>
<tr>
<td>Combined</td>
<td>-16 %</td>
<td>-9 %</td>
<td></td>
</tr>
</tbody>
</table>

Turnover of the metals industry in Finland

Seasonal adjusted turnover index

Shares of turnover 2022: iron and steel products, non-ferrous metals and castings 91 %, mining of metal ores 9 %

Source: Statistics Finland
Production volume of the metals industry in Finland

Shares of turnover 2022: iron and steel products, non-ferrous metals and castings 91 %, mining of metal ores 9 %

Source: Statistics Finland
Value of new orders in the consulting engineering in Finland

Million euros, at current prices

Export: 2 % 88 %
Domestic: -1 % 33 %
Combined: -1 % 35 %

Value of order books in the consulting engineering in Finland

Million euros, at current prices

Change:

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<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Export</td>
<td>-17 %</td>
<td>20 %</td>
</tr>
<tr>
<td>Domestic</td>
<td>-7 %</td>
<td>-2 %</td>
</tr>
<tr>
<td>Combined</td>
<td>-7 %</td>
<td>-1 %</td>
</tr>
</tbody>
</table>

Value of new orders in the information technology* in Finland

Million euros, at current prices

--- | --- | ---
Combined: | 35 % | 92 %

*) Excl. game industry and data center companies

Value of Order Books in the Information Technology* in Finland

Combined: 0 %  5 %

*) Excl. game industry and data center companies

Technology Industry Personnel

16,000 employees affected by temporary lay-offs 31st December 2023

Source: Statistics Finland, The Federation of Finnish Technology Industries' labour force survey, Macrobond
Technology Industry Personnel in Manufacturing Industry*

*) Electronics and electrotechnical industry, mechanical engineering and metals industry

Source: Statistics Finland, The Federation of Finnish Technology Industries’ labour force survey, Macrobond
Technology Industry Personnel in Subsidiaries Abroad by Industry

3/5/2024

Source: The Federation of Finnish Technology Industries' labour force survey, Macrobond
Technology Industry Personnel in Subsidiaries Abroad by Location

Source: The Federation of Finnish Technology Industries’ labour force survey, Macrobond
Technology Industry Personnel in Subsidiaries Abroad by Location

Source: The Federation of Finnish Technology Industries' labour force survey, Macrobond
Technology Industry Personnel in Subsidiaries Abroad by Country

Information from year 2022, total 278 000

1. China 44 200
2. India 33 200
3. USA 26 200
4. Germany 18 400
5. Poland 16 200
6. Sweden 14 700
7. France 9 900
8. UK 8 000
9. Norway 6 700
10. Italy 5 800
Others 94 200

1. China 16%
2. India 12%
3. USA 9%
4. Germany 7%
5. Poland 6%
6. Sweden 5%
7. France 4%
8. UK 3%
9. Norway 2%
10. Italy 2%
Others 34%
Personnel in Electronics and Electrotechnical Industry

Source: Statistics Finland, The Federation of Finnish Technology Industries’ labour force survey, Macrobond
Electronics and Electrotechnical Industry Personnel in Subsidiaries Abroad

Source: The Federation of Finnish Technology Industries’ labour force survey, Macrobond
Personnel in the Mechanical Engineering

Source: Statistics Finland, The Federation of Finnish Technology Industries’ labour force survey, Macrobond
Mechanical Engineering Personnel in Subsidiaries Abroad

Source: The Federation of Finnish Technology Industries’ labour force survey, Macrobond
Personnel in the Metals Industry

Source: Statistics Finland, The Federation of Finnish Technology Industries’ labour force survey, Macrobond
Personnel in Consulting Engineering

Source: Statistics Finland, The Federation of Finnish Technology Industries’ labour force survey, Macrobond
Personnel in Information Technology

Source: Statistics Finland, The Federation of Finnish Technology Industries’ labour force survey, Macrobond
Information Technology Personnel in Subsidiaries Abroad

Source: The Federation of Finnish Technology Industries’ labour force survey, Macrobond
Retirement of technology industry personnel in Finland

Source: Wage inquiry of the Technology Industries of Finland, Finnish Centre for Pensions, Statistics Finland

3/5/2024
Technology Industries of Finland
Retirement of technology industry blue collar employees in Finland

Source: Wage inquiry of the Technology Industries of Finland, Finnish Centre for Pensions, Statistics Finland
World economic outlook
- Finland as a part of global economy
Export of goods and services from Finland and Euro Area by quarter

Source: Macrobond, Eurostat

Technology Industries of Finland

Latest information: 2023 Q3
Demand items for GDP growth, quarterly, billion euros, at fixed prices, 2005 = 100

Latest information: 2023 Q4

- Construction
- Export of goods and services
- Private consumption
- GDP
GDP in some western countries

GDP at fixed prices, index 2005=100

Latest information: 2023 Q4

Source: Macrobond Technology Industries of Finland
GDP in large developing countries
China, India, Brazil and Russia account for 31% of the world economy, adjusted for purchasing power.
Purchasing Manager Indices for the entire business sector in Finland’s most important export countries

Manufacturing and services purchasing manager index, change over the previous month, 50 = no change

Latest information: February 2024

Source: Macrobond. Markit
Industrial Production Volume in USA, EU, Japan and Finland
Industrial Production Volume in EU-Countries

Latest information: December 2023

Index 2010=100

Poland
Estonia
Austria
Belgium
Germany
Sweden
Finland
Italy
Spain

Technology Industries of Finland
Seasonally adjusted volume index
Source: Macrobond

52
Industrial production globally

Source: Macrobond, The CPB Netherlands Bureau for Economic Policy Analysis

Technology Industries of Finland

Latest information: December 2023

Index 2005=100

China
Emerging countries
World
Developed countries
Finland
Purchasing Manager indices for the manufacturing industries

Latest information: February 2024

Source: Macrobond, Markit
Purchasing Manager indices for the manufacturing industries in major developing countries

Manufacturing purchase manager index, change over the previous month, 50 = no change

Latest information: February 2024

Source: Macrobond, Markit

Technology Industries of Finland
Exchange rates (when the curve rises, the value of the Euro strengthens against the other currency)

The value of the euro against other currencies, 2018 = 100

Latest information: 04 March 2024

Technology Industries of Finland
Source: Macrobond
Chinese goods imports

US dollars, at nominal prices, 3 months moving average, index 2014=100

Latest information: December 2023

- USA
- Indonesia
- Taiwan
- South Korea
- Japan
- EU countries
- India

3/5/2024 Technology Industries of Finland
Source: Macrobond
EU exports to Russia

Export value in each country's own currency, 3 months sliding sum, index 2005 = 100

Latest information: December 2023

Source: Macrobond
Russia’s* share of the technology industry's Finnish exports

*) Soviet Union up to 1991

Source: Finnish Customs
Finland’s economic growth relies on exports and investments
Export of goods and services by quarter, billion euros, at fixed prices, index 2005=100

Latest information: 2023 Q3

Source: Macrobond, Eurostat
Business investment

Tangible and intangible investment, at fixed prices, index 2005=100

Source: Macrobond, OECD Economic Outlook
Industrial tangible and intangible investment* in Finland

*) Including software investments.

Source: Statistics Finland (National Accounts), Confederation of Finnish Industries’ Investment Survey June 2022
Industrial investment and consumption of fixed capital in Finland

Billion euros, at fixed 2015 prices

Tangible and intangible investment*

Consumption of Fixed Capital

*) Including software investments.
Source: Statistics Finland (National Accounts), Confederation of Finnish Industries' Investment Survey June 2022
Industrial production capital loss in Finland

Cumulative consumption of tangible capital

Cumulative tangible investment

Billion euros, at fixed 2015 prices

=6,2 bill. €
Industrial tangible investment

Billion euros, at fixed 2015 prices, index 2005=100
Investment rate in industrial tangible investments

Source: Eurostat (National Accounts)
Industrial intangible investments

Intangible investments include research and development and software investments etc.

Source: Eurostat (National Accounts), Confederation of Finnish Industries’ investment survey, June 2021

*) Intangible investments include research and development and software investments etc.

3/5/2024 Technology Industries of Finland

Source: Eurostat (National Accounts), Confederation of Finnish Industries’ investment survey, June 2021
Investment rate of industrial intangible investments*

*) Intangible investments include research and development and software investments.

Source: Eurostat (National Accounts)

Intangible investments / value added, %

Hungary
Poland
Netherlands
Czech Republic
Austria
Germany
Sweden
Belgium
Finlands, excl. electronics industry
Finland

3/5/2024 Technology Industries of Finland
* Intangible investments include research and development and software investments.
Source: Eurostat (National Accounts)
Productivity* development in Finland

*) Productivity is measured as real value added per hours worked. When productivity grows (the curve rises) value added grows more than hours worked.

Source: Statistics Finland
GDP productivity development
GDP at fixed prices / hours worked

Index 2008=100 (the year before the collapse of Finnish industrial production capacity)

- Euro countries
- Sweden
- Finland
- Germany

Latest information April-June 2022.
Source: Eurostat: Quarterly National Accounts

Technology Industries of Finland
3/5/2024
Industrial productivity development
Industrial value added at fixed prices / hours worked

2008=100 (the year before the collapse of Finnish industrial production capacity)

- Euro countries
- Sweden
- Finland
- Germany

Source: Eurostat: Quarterly National Accounts

Technology Industries of Finland
Latest information April-June 2022.
3/5/2024
Finland’s cost competitiveness compared to the average of Euro countries

Unit labour costs in the whole economy = labour costs / productivity, including the influence of effective exchange rates

*) In the ECB Harmonised Competitiveness Index, the average effective exchange rate of each country is calculated vis-à-vis 38 main trade partners, as well as the development of unit labour costs for the total economy.

Latest information January-March 2022. Source: European Central Bank
Member Companies of the Federation of Finnish Technology Industries
The Federation’s Member Companies 2022

Number of enterprises / 1,806
- 1–249 employees: 1,634 (90%)
- 250–499 employees: 95 (5%)
- 500–999 employees: 49 (3%)
- 1,000+ employees: 28 (2%)

Number of personnel / 211,145
- 1–249 employees: 63,728 (30%)
- 250–499 employees: 82,082 (39%)
- 500–999 employees: 32,720 (15%)
- 1,000+ employees: 32,615 (15%)

3/5/2024 Technology Industries of Finland
The Federation’s SME Member Companies 2022

Number of enterprises / 1,634

- 1–19 employees: 234 (14%)
- 20–49 employees: 324 (20%)
- 50–99 employees: 508 (31%)
- 100–249 employees: 568 (35%)

Number of personnel / 80,082

- 1–19 employees: 5,293 (6%)
- 20–49 employees: 18,507 (23%)
- 50–99 employees: 35,679 (43%)
- 100–249 employees: 22,603 (28%)

3/5/2024 Technology Industries of Finland
Operating Profit in the Member Companies of Technology Industries of Finland in 2020

Operating profit-% = operating result / turnover * 100 (before taxes and financial income and expenses)

(Median: 5.2%)

Good (30%)
Satisfactory (22%)
Weak (26%)
Unprofitable (22%)

Companies in random order
Net Profit in the Member Companies of Technology Industries of Finland in 2020

Return on assets -% = (net income + financial expenses + taxes) / (capital invested in the financial year) * 100

(Median: 4.2 %)

Good (25 %)
Satisfactory (21 %)
Weak (30 %)
Unprofitable (24 %)

Companies in random order
Return on Assets in the Member Companies of Technology Industries of Finland in 2020

Equity ratio \(-\% = \frac{\text{total equity} + \text{total appropriations accrued}}{\text{adjusted balance sheet}} \times 100\)

(Median: 11.9 \%)

Good (43 \%)

Unsatisfactory (11 \%)

Mediocre (26 \%)

Weak (20 \%)

Source: Statistics Finland
Equity Ratio in the Member Companies of Technology Industries of Finland in 2020

Equity ratio -% = (total equity + total appropriations accrued) / adjusted balance sheet * 100

(Median: 44.9 %)

Good (56 %)

Satisfactory (23 %)

Weak (21 %)