Located in the middle of Scandinavia – the Nordic and Baltic markets around the corner

Gothenburg is the gateway to a 40 million population in ten countries in the Nordic and the Baltic region.

70% of the area’s industrial capacity is found within a radius of 500 kilometres.
Growth clusters - Areas of Strength – Important Verticals

- **ICT - Areas of Strength**
  - Embedded Systems
  - Infrastructure & Cloud
  - Mobile Technology
  - Microwaves
  - Visualization & Gaming
- **ICT – Important Verticals**
  - eHealth / mHealth / MedTech
  - Smart Grids (Energy)
  - Logistics & Transportation

- **Growth Clusters**
  - Automotive
  - Transport & Logistics
  - International trading
  - Green Chemical
  - Energy
  - Biomedicine
  - Food processing industry
  - Financial services
  - Design & Marketing
  - Communication
### Top 25 ICT-companies of West Sweden

<table>
<thead>
<tr>
<th>Company</th>
<th># Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ericsson</td>
<td>2,660</td>
</tr>
<tr>
<td>Volvo IT</td>
<td>2,470</td>
</tr>
<tr>
<td>TeliaSonera</td>
<td>1,460</td>
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<tr>
<td>SAAB</td>
<td>1,260</td>
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<tr>
<td>CGI</td>
<td>640</td>
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<tr>
<td>Epsilon AB</td>
<td>600</td>
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<tr>
<td>Hogia</td>
<td>475</td>
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<tr>
<td>Sigma</td>
<td>420</td>
</tr>
<tr>
<td>Ruag Space</td>
<td>320</td>
</tr>
<tr>
<td>Rosemount Tankrader</td>
<td>310</td>
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<tr>
<td>Evry</td>
<td>310</td>
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<tr>
<td>Eltek Networks Infranet</td>
<td>300</td>
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<tr>
<td>Jeppesen Systems</td>
<td>280</td>
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<tr>
<td>Fujitsu</td>
<td>240</td>
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<tr>
<td>Experis</td>
<td>230</td>
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<tr>
<td>HiQ</td>
<td>230</td>
</tr>
<tr>
<td>Hewlett-Packard</td>
<td>220</td>
</tr>
<tr>
<td>Adecco IT &amp; Engineering</td>
<td>200</td>
</tr>
<tr>
<td>Altran</td>
<td>190</td>
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<tr>
<td>CapGemeni</td>
<td>190</td>
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<tr>
<td>Cybercom</td>
<td>160</td>
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<tr>
<td>Acando</td>
<td>150</td>
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<tr>
<td>Atea</td>
<td>150</td>
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<tr>
<td>Swerea IVF</td>
<td>150</td>
</tr>
</tbody>
</table>

*HCL & RI.SE, new figures*
ICT- Cluster of West Sweden

- Approx 29 800 ICT-specialists
- More than 6 300 companies
- ICT integrated in all businesses

The Gothenburg region hosts:

Demanding Customers
Innovative suppliers
Driving actors in the Society
Cutting edge competence within Academy
Several cutting edge clusters
A habit of co-operating cross-borders
ICT-Cluster of West Sweden - Areas of Strength

- Embedded Systems
- Infrastructure & Cloud
- Mobile Technology
- Microwaves
- Visualization & Gaming
ICT-Cluster of West Sweden - Verticals for the future

- eHealth/mHealth/MedTech
- Smart Grids (Energy)
- Logistics & Transportation
ICT-Cluster of West Sweden – Emerging Areas

- **BigData, AI, Machine Learning, Q1**
- **Security, Q2**
- **AR/VR, Q4**
- **Strategic Competence Sourcing**
- **ICT in the Public Sector - Digital Agenda**
- **IoT: Industry 4.0, Internet of Sports, …**
- **Photonics**
- **eCommerce, Blockchain, FinTech, ERP**
## ICT- Cluster in West Sweden
### Cutting edge Clusters connected to Areas of Strength

<table>
<thead>
<tr>
<th>Telematics Valley</th>
<th>Microwave Road</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle ICT Arena</td>
<td>Chase - Antennas</td>
</tr>
<tr>
<td>Software Center</td>
<td>GHz-center – High Frequency Communication</td>
</tr>
<tr>
<td>Elektronikindustriföreningen i Gbg</td>
<td>Visual Arena – Visualization</td>
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<tr>
<td>Embedded Gothenburg</td>
<td>Media Arena - Gaming</td>
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<tr>
<td>GREAT – IT-Infrastructure</td>
<td>MedTech West</td>
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<tr>
<td>eHandel Göteborg</td>
<td>Smart Grids Mobilization &amp; Kraftforum</td>
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<tr>
<td></td>
<td>STRIKE – Transport &amp; ICT</td>
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<td></td>
<td>Swedsoft</td>
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</tbody>
</table>
The cluster model
Business Region Göteborg ICT – How we support the ICT-cluster

• Business Intelligence
• Newsletter, 3000+ subscribers
• Trade Fairs, Conferences & Seminars
• Foreign Direct Investments
• Internationalization
• Cutting Edge Clusters
Cluster & Networks
Well developed Clusters & networks within Microwave, Telematics, Visualization, MedTech/eHealth, Automotive, etc

Example: Nordic Center of Microwave Technologies
BIG DATA, MACHINE LEARNING & AI INSPIRATIONAL MAP – WEST SWEDEN 2018

Transport & Automotive
- Volvo
- Stena Line
- E-inride
- Zenuity
- Aptiv
- Veoneer
- Autoliv
- QAMcom
- Jeppesen
- Astra Zero
- RUAG
- Västra Fik
- HDM
- AB Hogia

Internet & Security
- Recorded Future
- Griffeye
- NetClean
- OP5
- Irisk
- Halon
- Gemalto
- Meltwater

Financial & ERP
- ATOMIZE
- Bokio
- Collector Bank
- evispot
- QSeal
- Wrebitt

Life Science
- AstraZeneca
- Medfield
- Predicare
- SurgicalScience
- Hypocampus
- Epios Medical
- Microgene Medical

Other Verticals
- SKF
- Ericsson
- Adfenix
- Tibco
- Spotfire
- Burt
- TIBCO
- Spotfire
- Elia
- Annotell
- Find
- Refind
- Technologies
- Ili
- Greenbyte
- IRI
- AI

Service
- Advectas
- CGI
- Berge
- Combitec
- Qrtech
- Knowit
- Findwise
- Findwise

Research & Education
- Halmstad University
- Sahlgrenska Academy
- University of Gothenburg
- Chalmers
- RISE

Incubators & Arenas
- MobilityXlab
- Drive Sweden
- Lindholm Science Park
- SAFER
- Semcon

Johan Hogsved, johan@hawco.se
## CYBERSECURITY - Who’s Who in West Sweden

<table>
<thead>
<tr>
<th>Applications (verticals)</th>
<th>Partners</th>
<th>Services</th>
<th>Research &amp; Education</th>
<th>Incubators &amp; Arenas</th>
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<tbody>
<tr>
<td><strong>Information Security</strong></td>
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<td>LINDHOLMEN SCIENCE PARK</td>
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<td><strong>IoT &amp; Automotive</strong></td>
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<td>Conscriptor</td>
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</tbody>
</table>

Note: The image contains logos and names of various companies and organizations related to cybersecurity in West Sweden.

- Gather actors
- Mapping
- Workshop
- Networking
- Seminars
- Initiate a Cluster initiative
- Based upon Existing organizations
- TechNordic – North Denmark & Aalborg, South Norway & Oslo, West Sweden & Gothenburg Region
TechNordic - The strong Nordic ICT region

120,000 ICT employees
1,000 ICT researchers
6,000 ICT students

https://www.youtube.com/watch?v=GhM8N3CRvyI
ICT – Cooperation MobilityXlab
Together we bring future mobility closer
MobilityXlab offers young companies with pioneering ideas the opportunity to accelerate through the possibility to strategic partnership with six global players within mobility and connectivity.

Check us out and get on board!
We are now looking for candidates to be a part of MobilityXlab during 2020. We need emerging companies that want to join us in developing the next generation mobility. We want partners that have building blocks and are ready to find their role in the value chain, using the strengths of the other links. We are looking for components and enablers for smart mobility. Be prepared to interact! Collaborators win.
Swedish AI capability

- Digitalisation in society
- Competence base
- AI-patent
- Industry
- AI-related research
- Research priorities
- Supplementary education in AI
- Public sector

Source: conclusions from Vinnova's report "Artifical intelligence in Swedish business and society"
- A national & neutral platform to accelerate AI related research & innovation
- Horizontal resources across applications
- Focus on collaborative development across industry, academia & society
- Team of about 10 people, initially with offices in Gothenburg & Stockholm
- Budget SEK 25 million annual
- Funded by Vinnova, Region Västra Götaland and 25+ partners
Founding partners

Corporate
- AstraZeneca
- essity
- VOLVI
- Volvo
- ERICSSON
- veoneer
- CEVT

Academia & Research Institutes
- CHALMERS UNIVERSITY OF TECHNOLOGY
- RISE
- UNIVERSITY OF GOTHENBURG
- The Swedish Law and Informatics Research Institute

Lifelong Learning
- universeum

Medium sized companies & Consulting
- ACANDO
- Capgemini
- CGI
- EVRY
- FUJITSU
- KPMG
- SWECO
- semcon
- qamcom

SMEs & Startups
- Recorded Future
- Seal
- UNIVRSE
- TENFIFTY
- annotell
- PELTARION
- Talkomatic
- Viking Analytics AB
- ascend

Public organizations
- REGION VÄSTRA GÖTALAND
- REGION SKANE
- Skatteverket
- Rymdstyrelsen
- Sveriges Kommuner och Landsting
Regional nodes

First node in Gothenburg, second and third under discussion in Stockholm and Malmö
Collaborative projects
of cross industrial, academic and societal partners

- Industry – academia – society
- Funding available (Vinnova, EU, etc)
- Common resources will be established
- Increasing coordination within Sweden
- National space data hub
- Swedish reference data set for NLP
- Several under discussion
- “Start your AI journey”
Infrastructure, data, methods, resources and tools made available to broad community

Data Factory

Managed data, processing power and related services

Community & network

- Partners
- Researchers
- Students
- Etc

Training

Access control
Business models
Legal framework

Donate data
Open source
Dedicated data projects
Welcome to the Elements of Artificial Intelligence free online course
GOALS

• Develop unique AI expertise
• Attract world-leading AI researchers
• Become an outstanding education centre in AI
• Become the preferred AI partner for industry
MISSION

• Strengthen AI basic research
• Establish AI applied research in strategic areas
• Coordinate AI-activities
• Support education
## PRICIPLES & STRATEGY

Focus and openness to new ideas

<table>
<thead>
<tr>
<th>COLLABORATION PROJECTS</th>
<th>APPLIED AI</th>
</tr>
</thead>
<tbody>
<tr>
<td>- with industrial partners</td>
<td>Transport</td>
</tr>
<tr>
<td>CHALMERS PROJECTS RECRUITMENTS</td>
<td><strong>AI ENABLERS</strong></td>
</tr>
<tr>
<td>Advancing CHAIR activities</td>
<td>AI-based Systems and Software</td>
</tr>
<tr>
<td></td>
<td><strong>AI FOUNDATION</strong></td>
</tr>
<tr>
<td></td>
<td>AI Theories and Algorithms</td>
</tr>
</tbody>
</table>

- Ethics
- Sustainability
- Equality
- Innovation
PRINCIPLES & STRATEGY

Unique expertise – in collaboration

Chalmers Excellence
- Fundamental research
- Recruitment
- Infrastructure
- Education support
- AI coordination

Industrial & societal Impact
- Collaborative projects
- Increased funding
- Common recruitment
- Practical problems
- Industry network
- Utilization of data

Chalmers University of Technology
36
SYNERGIES

Building an AI ecosystem

• Within Chalmers

• With partners
West Sweden Science Parks & Incubators

- Lindholmen Science Park
- Sahlgrenska Science Park
- Johanneberg Science Park
- Gothia Science Park
- Innovatum
- Science Park Halmstad
- Chalmers Venture
- GU Venture
- Framtidens Företag
- Drivhuset
- Inkubatorn i Borås
- Brewhouse
- eHive
- Glab21
• Coming events
  – Mobile World Congress (Barcelona) Feb 25-28
  – Chalmers Initiative seminar on Digitalisation, March 4 - 5
  – DCongress, March 7
  – Prod Summit Göteborg, March 7
  – CapitalOnBoard, March 12
  – Metis Forum, March 12
  – AI Seminar RISE, Teknikföretagen & ICT Sweden, March 20
  – Rymdforum19, March 24-26
  – Leva & Fungera, March 26-28
  – Electronics & Advanced engineering March 27-28
  – Vetenskapsfestivalen, April 1-12
  – Vehicles Electronic & Connected Services, April 2-3
  – Foss-North (Open Source), April 7-10
  – GAIA Conference, April 9
  – TechNordic Competence Seminar (CPH) April 10
  – GbgTechWeek, May 6-12
  – IWDK (Internet Week DK) May 7-12 (Aarhus), May
  – TNW Conference (Amsterdam), May 9-10
  – Webit (Sofia), May 13-15
  – Gothenburg startup hack, May 19
  – Paranoia (Oslo), May 21-22
  – Vitalis 2019, May 21-23
  – Forum Affärssystem & HR, May 21
  – Swedish Microwave Days, May
  – Offentliga rummet,June 10-12
  – Folkemötet (Bornholm), June 13-16
  – IoT Week 2019 (Aarhus), June 17-21
  – Connected Britain (London), June 18 - 19
  – Startup Extreme (Bergen), June 24 - 26

• Areas of Strength & Verticals for the future

• Newsletter, Seminars & Trade Fairs

• Au Revoir!
For further information, please contact

ERIK BEHM
AREA & INVESTMENT MANAGER ICT

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