

GöteborgBIO

The Biocluster in Western Sweden

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September 8, 2010





A Region of Excellence in Biomedical Research

- CNS – Nobel laureate Arvid Carlsson
- Bone anchoring of implants - osseointegration
- Oral biology
- In vitro fertilization
- Obesity and bariatric surgery
- Cartilage repair
- Cell regeneration

Focus on clinical applications rather than basic science

A Region of Learning

- University of Gothenburg – Sahlgrenska Academy
- Chalmers University of Technology
- 3 incubators
- Sahlgrenska University Hospital
 - largest hospital system in Northern Europe



Higher Education

- Extensive education with programs in biomedicine, health care, engineering, business and law
 - On the rise in international rankings
 - Odontology in top ranking
- 3 500 full time students in medicine and biotechnology
- World class entrepreneurship education
 - unique concept with real business development
 - Chalmers E-school, GIBBS → G4E



A Region of Industry

- Dental implants: Nobel, Astra Tech,
- Hard tissue implants: Anatomica, Artimplant, AstraTech, Cochlear, Integrum
- Wound care: Mölnlycke, Abigo, Appeartex
- Skin care and hygienic: SCA
- IVD: Fujirebio, Oss-tell,
- Research Instruments: Q-Sense, Layerlab
- Clinical Trials: A+
- Pharmaceutical development:– AstraZeneca, NeuroSearch
- Medtech : Getinge, Carmel Pharma, Neovanta,



A Region of Industry

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- 170 companies, 7000 employees (20% of national)

- Largest companies

	# Employees
– AstraZeneca	2 450
– Astra Tech	900
– Tamro	300
– Mölnlycke Health Care	290
– Kronans Droghandel	250
– Nobel Biocare	220
– Apoteket Produktion	120
– Cochlear	120
– Carmel Pharma	100



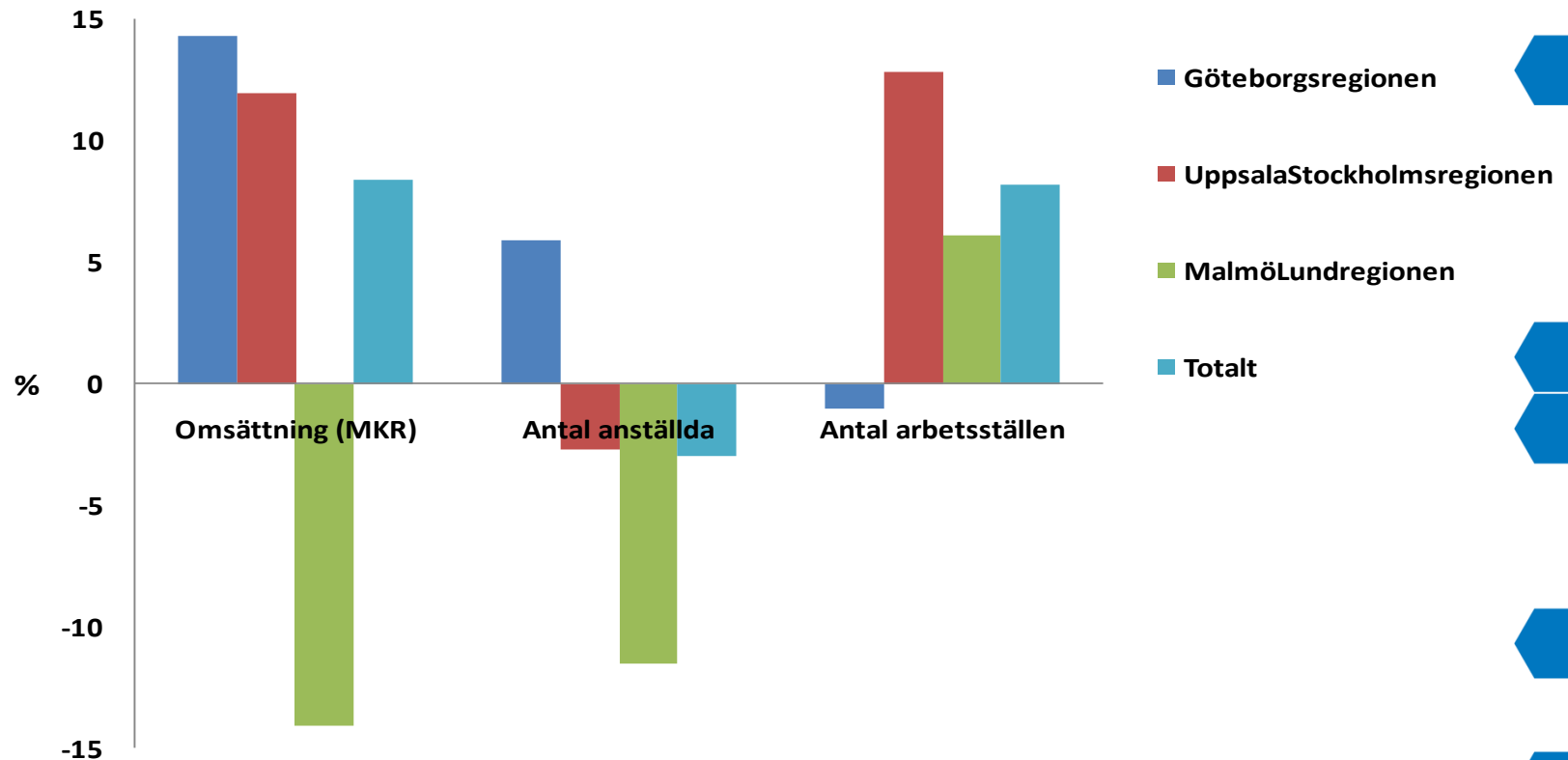
The Biomaterials and Cell Therapy Cluster

<u>Company</u>	<u>Business focus</u>	<u>Turnover,</u>	<u>Roots</u>
Nobel Biocare	bone-anchored dental implants	6 BSEK	M, A, V
Astra Tech	bone-anchored dental implants; catheters and other medical devices	2 BSEK	A, N
Mölnlycke Health Care	surgical dressings; wound care products	8 BSEK	M
SCA Hygiene	incontinence and other dressings	30 BSEK	M
Cochlear	bone-anchored hearing aids	200 MSEK	N
Ostell	diagnostic tools for bone-anchored implants	30 MSEK	N
Integrum	bone-anchored limb implants	12 MSEK	N
Arthrocare	surgical tools and methods	2 BSEK	
Artimplant	resorbable scaffolds	10 MSEK	M
Q-Sense	research tools for surface analysis	50 MSEK	N
Osteomy cure	implantable ports	startup	N
Cellartis	stem cells	10 MSEK	
Vitrolife	aids for IVF and transplantation material handling	50 MSEK	

Employment development 2003-2009

- Gothenburg only region with growth

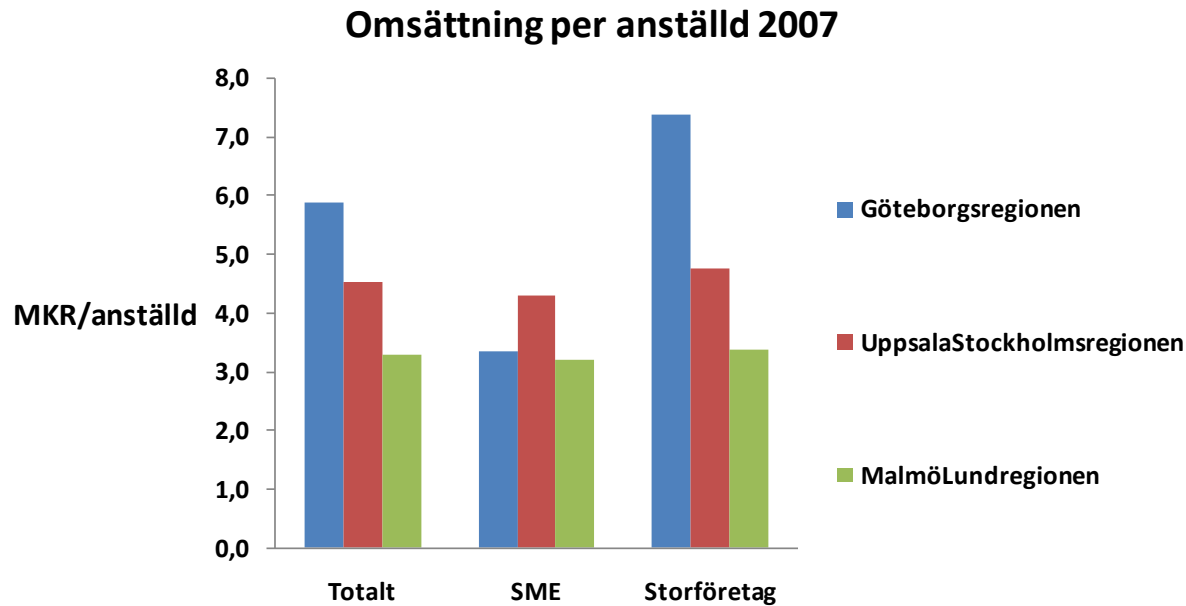
Utveckling i respektive region



Turnover per employee

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- Productivity highest in our region



Innovation support system

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- Incubators
 - Chalmers Innovation, GU Holding, Sahlgrenska Science Park, Encubator
- Soft seed capital
 - Almi, Drivhuset, Golnn, Innovationsbron, Venture Cup, VGR
- EU support
 - Enterprise Europe Network
- Risk capital
 - Almi Invest, Chalmers Innovation Seed Fund, Innovationskapital, KTH-Chalmers Capital, PULS, Sahltech, SEB Venture, Start Invest, 6 AP Fund



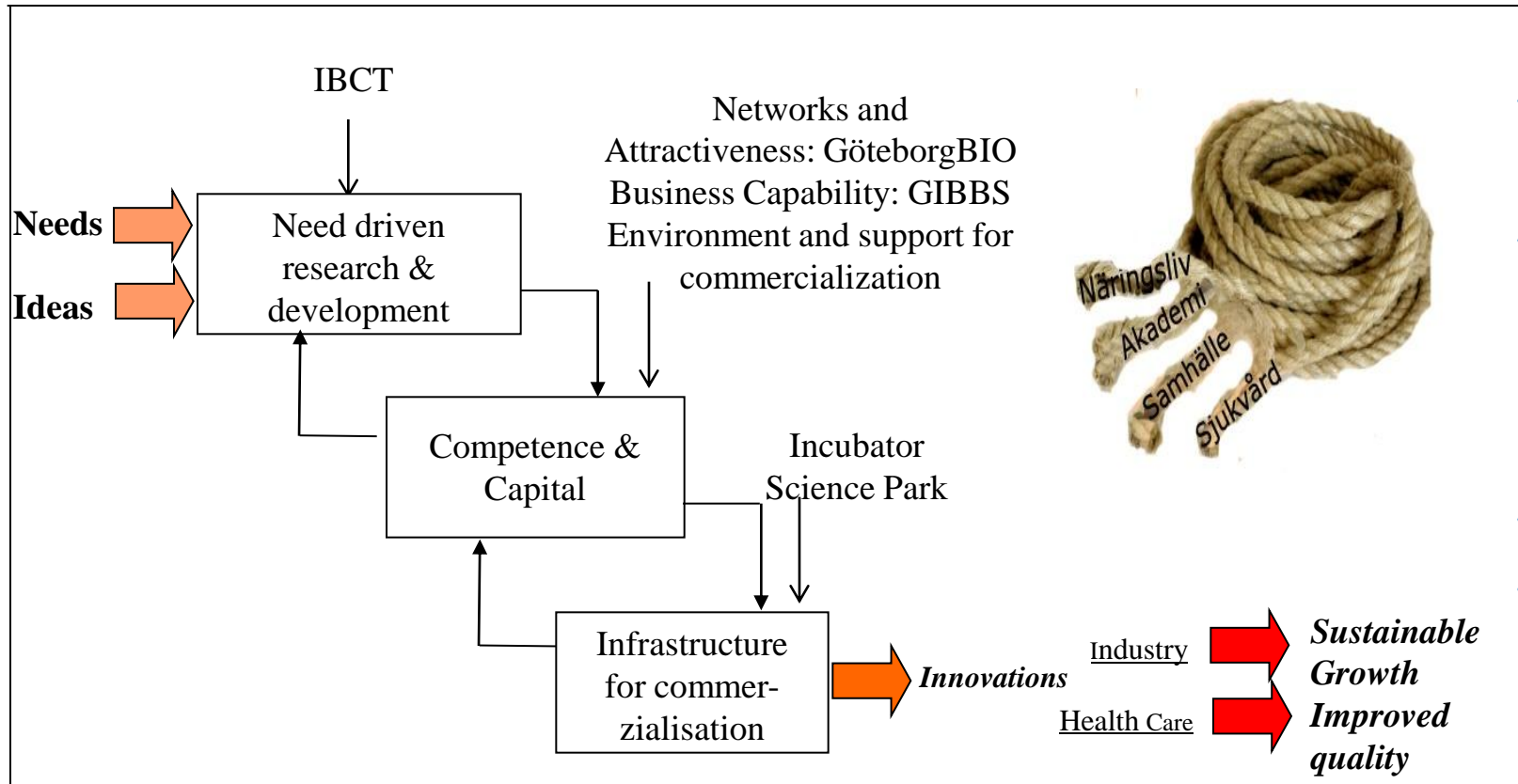
The Vision

The Göteborg region shall be considered one of Europe's most innovative and growing regions for industrial development and implementation of new knowledge and innovations in health care

This shall create significant effects on employment in industry and on quality of health care supply.



Göteborg's Biomedical Innovation System



Our aims

- Improve the commercial leverage of successful R&D within Biomaterials & Cell Therapy
 - **IBCT**
- Improve and strengthen infrastructure for commercialization within biomedicine
 - **SSP**
- Educate and train leaders for advanced business creation within biomedicine
 - **GIBBS**
- Attract world class competence and capital for biomedicine to the Göteborg region
 - **GöteborgBIO**



Financing of initiative

- Cash contributions approx 14 MSEK
 - 6 MSEK Vinnova
 - 6 MSEK principals, of which VGR + BRG 4
 - 2 MSEK others, incl. commercial revenues
- Contributions in kind approx 14 MSEK
 - Participation in projects from companies, academia and service suppliers



Budget split

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- Improved competitiveness of regional biomaterials cluster
 - Institute for Biomaterials & Cell Therapy (IBCT) ca 4 MSEK
- Support commercialization of biomedical research
 - Incubation and validation within Sahlgrenska Science Park, ca 3 MSEK
- Improve availability of manpower for business creation in the region
 - GIBBS, ca 3 MSEK
- Increase attractiveness of the region for competence and capital
 - GöteborgBIO, ca 2 MSEK
- Build international networks and contacts, ca 1 MSEK



Triple Helix collaboration among principals

- Industry
 - AstraZeneca
 - Mölnlycke Health Care
 - Nobel Biocare
- Academia
 - Chalmers
 - University of Gothenburg
- Public sector (local, regional, national)
 - Business Region Göteborg
 - Region Västra Götaland
 - Innovationsbron Väst
 - Vinnova



Organization

- Senior level representatives from the 8 principals in Board of Directors
- One process director, with a deputy, reporting to the board
- Sub processes with project directors
- Operating group co-located, meeting frequently



Objectives

GIBBS graduated 30 students

IBC project volume > 15 MSEK

CVM has contributed to commercialize > 10 projects

> 10 new companies in operation

Incubator has helped > 20 projects

West Sweden attracting international attention

Gender balance in all teams

1st period

Doubling of employed in the sector to 15000

50 new companies > 15 employees

Doubling of international companies active in region

Significant increase in indirect employment

VGR health care system # 1 in Europe for clinical studies

West Sweden international icon for growth in biomedicine

3rd period, 2015



Effects and results first period

- Biomedicine core field for regional development
- New focus on innovation in health care system
- Reinforced innovation support system
- New Centers of Excellence in bioscience
- More cross disciplinary collaborations
- More international collaborative initiatives



Experimental approach - testing and learning

- Biomaterials: focus on collaborative cross- and multidisciplinary method developments, involving established companies
- Validation support: focus on making discovery research to think about commercialization in the early stages, and to drive projects forward
- GIBBS: focus on education and training in business creation and on pre-incubation
- Incubator: exclusively focusing on biomedicine with seed financing capability

Launch, build, transfer to established organizations



Aims and achievements 1st period

GIBBS graduated 30 students

IBCT project volume > 15 MSEK

CVM has contributed to commercialize > 10 projects

> 10 new companies in operation

Incubator has helped > 20 projects

West Sweden attracting international attention

Gender balance in all teams

GIBBS graduated 23 students, 40 admitted, 3 companies formed

IBCT 4 projects performed, initial contracts from industry

CVM initiated 17 projects, 12 reached targets, attracted external capital

➤ 10 new companies formed

➤ Incubator helped 45 projects

International attention achieved

37% women active in the projects

Challenges for the second period

- Continue to deliver in the projects
- Maintain commitments and enthusiasm
- Reach out to new groups and integrate their needs
- Build networks internationally for the next phase
- Identify critical path items and how to address them



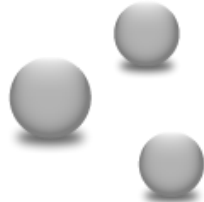
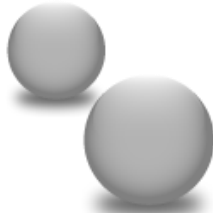
Some Challenges Going Forward

- Integrate medicine and technology
- Integrate from lab bench to clinic
- Find, attract, train, develop and grow people at all levels needed to fulfill our vision
- Collaborate with other regions, companies and academic centers to stay ahead



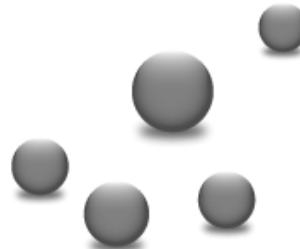
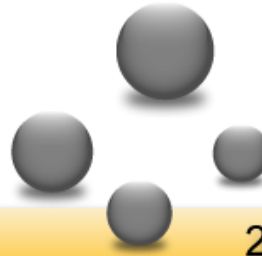
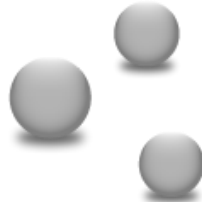
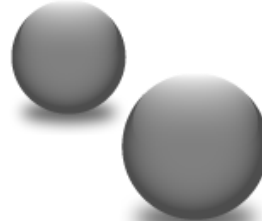
Situation 2002

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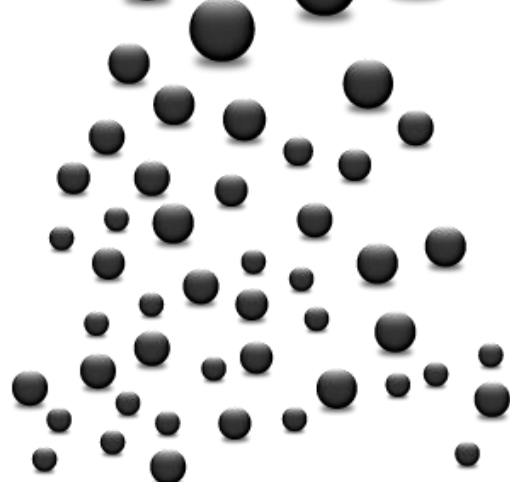
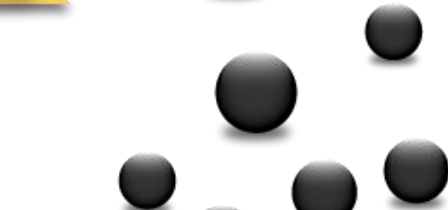
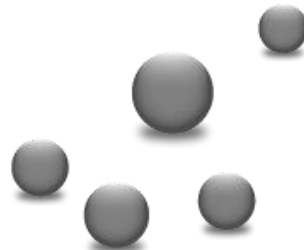
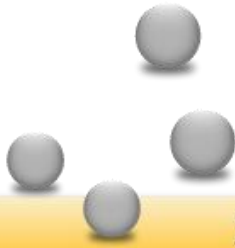
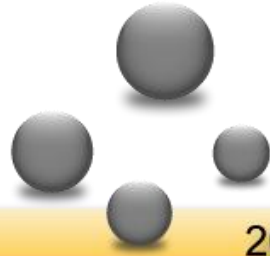
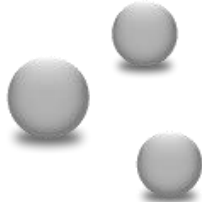
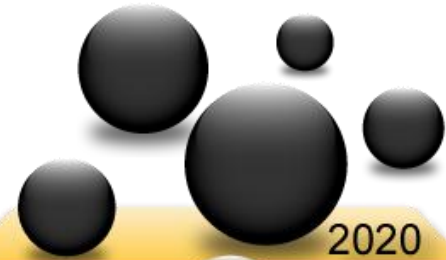
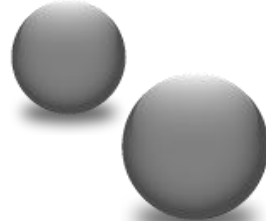
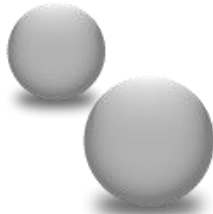
Situation 2009

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Target 2020

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Vision 2020

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- Recognized leadership in biomaterials and regenerative medicine
- Health care system improved through more innovations and competent employees
- World leading companies grow
 - Today's leaders still around
 - Today's second leaguers (Carmel, Vitrolife, Cellartis, Cochlear) have grown into world leaders
 - New players have arrived to gain access to the advantages in our region
- Strong flow of commercial successes and new companies
 - Strong system for innovation support
 - Many available entrepreneurs
 - Strong availability of investment capital



We make it happen!



Thank you

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What is an Innovation System?

Actors in academia, business and the public sector who cooperate in generating, exchanging and using new knowledge and technologies aiming to generate long term sustainable growth (economically, ecologically and socially) through new products, services or processes



The Knowledge Creation Network in Biomedicine

