



Swedsoft

Mjukvara förenar svensk industri – globalt perspektiv



- Industriinitativ för att främja svensk industris konkurrenskraft med avseende på mjukvara
- Initiativtagare/grundare:
 - ABB, Ericsson, Saab, Arcticus Systems
 - Swedish Institute of Computer Science, Blekinge Tekniska Högskola, IT-Universitetet i Göteborg, Linköpings Universitet, Lunds Universitet/Lunds Tekniska Högskola, Mälardalens Högskola



Det som inte syns... finns inte!

Mjukvarans kritiska betydelse för Sverige i siffror



- Svenska storföretag **satsar mest i världen på FoU**, nästan dubbelt så mycket som snittet för OECD.

Källa: OECD



- Av FoU går omkring **40 procent till mjukvara i olika former, dvs. 60 miljarder kr inom Sverige och 80 miljarder totalt.**



- Mjukvaruandelen av FoU-budgeten varierar mellan **20 och 90 procent för de 12 mest FoU-intensiva svenska storföretagen.**

Källa: Enkät till 12 storföretag

- Totalt motsvarar mjukvarudelen i svensk företags-FoU **omkring 75000 personer i Sverige och totalt 100 000.**

Källa: Egna beräkningar



Utmaningar

Allt är kanske inte så bra som det verkar...

IT industry competitiveness index 2009: Overall scores and ranks

Country	Score	2009 rank	2008 rank
United States	78.9	1	1
Finland	73.6	2	13
Sweden	71.5	3	4



Human Capital

2009	2008	Country
1	1	US
2	5	South Korea
3	3	UK
4	41	China
5	6	Australia
6	4	Ireland
7	7	Taiwan
8	9	New Zealand
9	8	Canada
10	10	Finland
11	29	Russia
12	11	Japan
13	13	Denmark
14	36	India
15	19	Greece
16	12	Sweden
17	16	Norway
18	17	Italy
19	14	Israel
20	18	Spain



R&D environment

2009	2008	Country
1	18	Canada
2	6	Finland
3	11	Singapore
4	8	Israel
5	5	US
6	3	Japan
7	1	Taiwan
8	2	South Korea
9	4	Sweden
10	10	Netherlands
11	16	Ireland
12	11	UK
13	20	Australia
14	17	Norway
15	34	Estonia
16	15	France
17	7	Denmark
18	19	Belgium
19	48	Romania
20	13	Germany



Succeed By All Means

Källa: Li Gong
Chairman & CEO
Mozilla Online Ltd.
Beijing, China
lgong@mozilla.com
November 13, 2009



- “Communism has its good points. Capitalism also has good things ... I am afraid of only choosing one way.” Wu Renbao, party secretary of the richest village in China. *International Herald Tribune*, 09/29/2009

Copying Is OK

Källa: Li Gong
Chairman & CEO
Mozilla Online Ltd.
Beijing, China
lgong@mozilla.com
November 13, 2009



“Copying/Imitating is
also a form of
study.”

-- Mao Ze-
Dong

抄袭也是一种学习。

-- 毛泽东

Mjukvara eller inte vara?



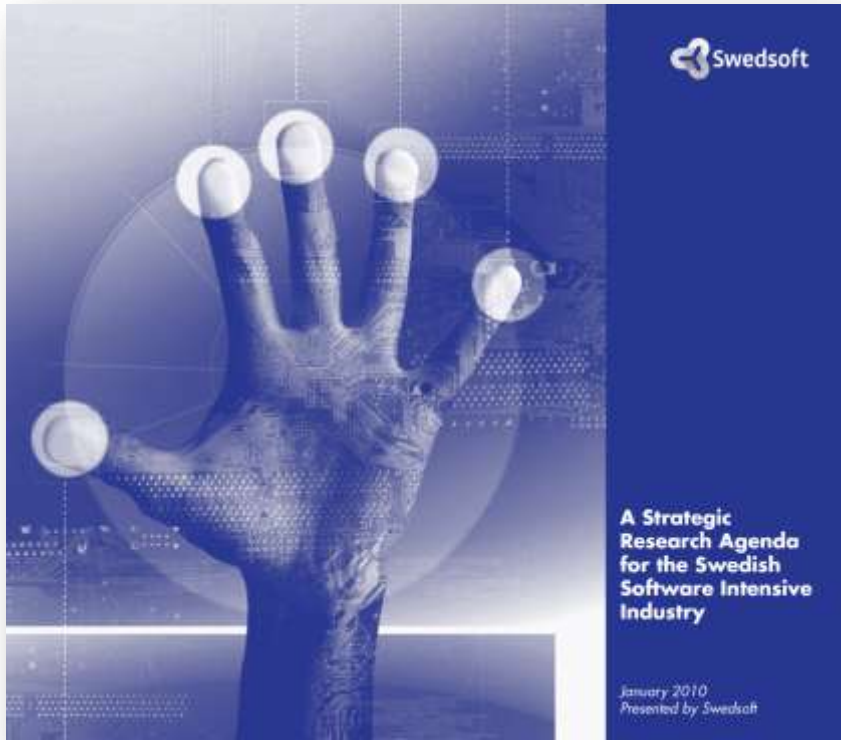
”Vi står inför ett teknikskifte och ett skifte utav vad det är som företagen tjänar pengar på. Och då måste Sverige ligga långt fram och ta ledningen.”

- Näringsminister Maud Olofsson, till TT 8/12

Dags att vakna!

Dags att agera!





A Strategic Research Agenda for the Swedish Software Intensive Industry

January 2010
Presented by Swedsoft

A unique cooperation

THE STRATEGIC RESEARCH AGENDA IS THE RESULT OF A close cooperation between software intensive industry corporations, universities and research institutes in Sweden. Never before has there been a consensus on this level about the needs and the challenges for the Swedish software intensive industry. Never before has the sense of urgency been so strong in this community.

FOR 1980S 1980 TO 80 000. Software has to be recognized as a discipline in its own right. New incentives must be created for cocreation, in order to create innovation enabling cooperation. Last but not least we call for a national initiative with grants dedicated to the specific field of software development.

THE AGENDA IS CONCEIVED AND PROPOSED BY SWEDSON, an industry initiative aimed at strengthening Swedish competitiveness with regards to research and development of software intensive systems, services and products. The content of the agenda is supported by a vast range of large and small Swedish industries, as well as most major Swedish universities. VINNOVA supported the production. Elektroniktidningen's editor Anders Edén wrote the document. Swedsoft would like to express gratitude to everyone involved in the process.



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Strategic Research Agenda

Rekommendationer

1

Erkännas som en egen disciplin, inom såväl industri och akademi.



2

Ökad stimulans och nya strukturerade mekanismer för korsbefruktning

3

Anslå pengar för ett betydande nationellt program med fokus på att göra mjukvaruutveckling minst tio gånger mer effektivare än idag



Mål och Wanted Position Översikt



Strategic need	Short term, 2010-2012	Mid term, 2013-2016	Long term 2016-2020
Management of the SW discipline. Including increasing flexibility, realization of business models and recruitment of SW competence	<ol style="list-style-type: none"> 1) Industrial and academic focus on SW as a discipline. 2) New model how to recruit students to university SW programs. 3) New teaching curriculum ore closely related to middle- and long term industrial needs. 	<ol style="list-style-type: none"> 1) Large-scale national SIS development cooperation projects under way. 2) Structured methods for assuring supply of SW project management. 3) Good architecture support, i.e. easy to understand, maintain and extend. 	<ol style="list-style-type: none"> 1) We fully understand how to develop SIS with efficiency, quality and cost control. 2) We develop and simulate systems (SW and HW) in an mixed and integrated development environment. 3) We have assured continuous competence supply for SIS development.
SW Engineering (addressing the need for increased productivity in terms of reducing lead-time and cost, and dramatically improving the efficiency of software engineering and adding the aspect of swedish industrialization.) Includes cost efficient quality assurance, earlier verification of designs and improved relevant system understanding.	<ol style="list-style-type: none"> 1) The tool environment should support fast feedback, e.g with simulation, for the user. 2) Expressiveness of design and architecture to stakeholders. 3) Expressiveness of formalism and consistency so the SIS does what it is designed to do. 4) Full utilization of domain specific "languages" / instruction sets. 5) Scalability. 	<ol style="list-style-type: none"> 1) Everything on the same abstraction level (implement, simulate, test and debug) including legacy systems. 2) More user friendly and easy to learn. Integration and full support throughout the way of working chain. 3) The IDE is more active in analyzing the design (in all phases) and providing feedback to the developer. 4) Verification of the design is done at high level, earlier than today. 	<ol style="list-style-type: none"> 1) We can develop SIS at least 10 x more efficient than today. Or, alternatively, we can reduce lead-time with increased quality of end-to-end SIS development to 1/10 of today. 2) We have ensured working interchange of SW tools.
SW execution environment (portability, scalability, safety critical systems, long life cycle, dependability).	<ol style="list-style-type: none"> 1) We can implement, run and interchange SW components smoothly in specific domains (telecom, automotive, etc). 2) Verification on component/ subsystem level is sufficient for the integration 	<ol style="list-style-type: none"> 1) We can implement, run and interchange SW components smoothly across domains. 2) Software developed for SIS is predictable in different configurations. 	<ol style="list-style-type: none"> 1) We can implement, run and interchange SW components smoothly in all systems, including safety-critical SIS. 2) We can manage the variability of the SIS without adding to the maintenance cost or R&D. 3) Product test should not be needed since the general PLA is tested and the variants' quality is deduced therefrom.

A yellow square button with rounded corners and a glossy finish. In the center is a large, light-yellow heart shape. Overlaid on the heart is the text "Mjukvaran är själen i svensk industri" in a bold, blue, sans-serif font. The button has a subtle shadow on the right side.

**Mjukvaran är
själen i svensk
industri**