行政院所屬各機關因公出國人員出國報告書
（出國類別：考察）

「發展知識經濟：北歐推動資訊化社會之作法」
出國參訪報告

服務機關：行政院經濟建設委員會
出國人　職稱：主任
　　　　姓名：何俊輝
出國地點：芬蘭（赫爾辛基）及瑞典（斯德哥爾摩）
出國期間：九十年十月十一日至十月二十八日
報告日期：九十年十一月十九日

E0/C09006389

目　錄

「發展知識經濟：北歐推動資訊化社會之作法」
出國參訪報告

壹、參訪期間：中華民國九十年十月十一日至十月二十八日
（總計十個工作天）

貳、參訪地點：芬蘭（赫爾辛基）及瑞典（斯德哥爾摩）

參、參訪對象：

| 國別	機關或公司名稱	職　稱	受訪者
芬蘭	財政部	主任秘書兼「資訊化社會」首席執行秘書	Mr. Kongas Olavi
	交通部	網際網路暨通訊顧問	Mr. Kari Ojala
	Nokia	技術政策部門總裁	Dr. Erkki Ormala
	Sorena	研發部門經理	Ms. Leena Viukarı
瑞典	投資業務局	電信部門資深經理	Mr. Mats Engelmark
	資訊科技研究所	所長	Dr. Bo Dahlbom
	ICT 委員會	資深專案經理	Mr. Bo Beckestrom
	STATSKONTORET	電子基礎建設部門主任	Mr. Nils Qwerin
	Ericsson	市場協調部總裁	Mr. Per-Olof Bjork

肆、背景說明

「資訊化社會」此一主題在九〇年代初期即已引起熱烈的公開討論，如 OECD 於 1994 年於 European Commission 發表 Bangeman report、1996 年發表 Life and work in the information society；1999 年 European Commission 啟動 eEurope project，進一步宣示資訊化社會遍佈全歐的目標，且又於 2000.06 啟動「eEurope 2002 Action Plan – An information society for all」，推動 eContact、eLearning、GoDigital 等計畫，並揭櫫三大目標：

1. 提供便宜、快速，安全之網際網路；
2. 投資於人民及知識（invest in people and knowledge）；
3. 鼓勵使用網路（stimulate internet usage）。

就歐盟各國觀之，又以北歐四國（瑞典、芬蘭、挪威及丹麥）表現尤佳。依據 IDC（International Data

Corporation）2000 年調查報告顯示，瑞典 IT 全球排名第一（美國第二、芬蘭第三）；歐盟 2000 年調查報告指出，歐盟各國中最具創新力之國家第一為瑞典、芬蘭第二、丹麥第三；IMD2001 年國家競爭力報告中，瑞典研發經費所佔比重 3.7% ，居全球之冠，芬蘭第三；再者電子商務應用排名，芬蘭第一、瑞典第四；另 IBM 研究報告亦顯示，全球前十大網路銀行，瑞典即佔 3 家，與美國同佔鰲頭。

表一：芬蘭、瑞典、台灣近十年經濟成長率一覽
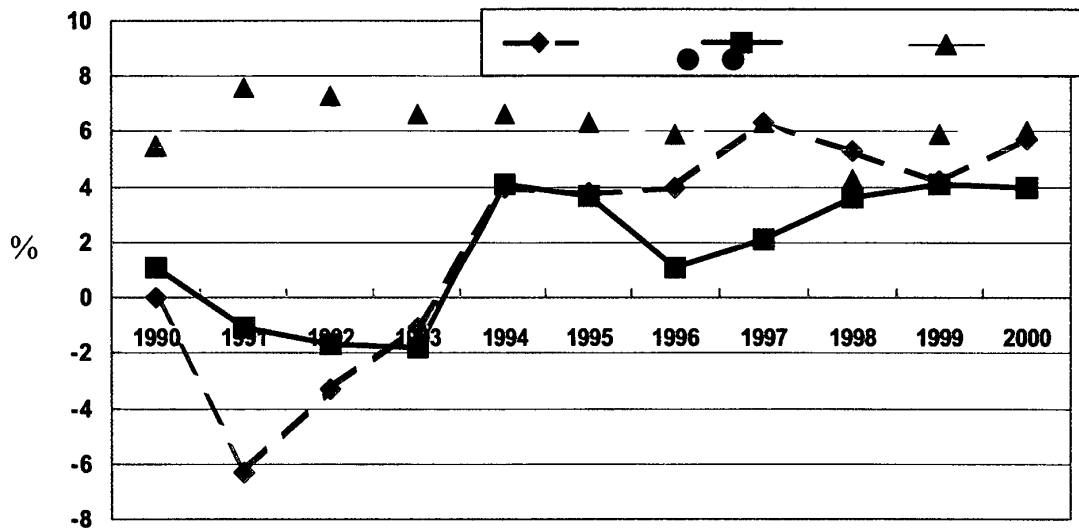
資料來源：1. www. stat. fi
2. www. scb. se
3. 行政院主計處

表二：芬蘭、瑞典、台灣三國經濟指標比較（2000年）

比較項目	芬蘭			瑞典			台灣		
人口數（百萬）	5.19			8.87			22.28		
面積（萬平方公里）	33.7			45			3.6		
GDP（億美元）	1216			2280			3101		
經濟成長率（%）	5.74			4.00			5.98		
每人平均國民所得（美元）	23,430			25,705			13,921		
每人平均使用面積（km²）	649			507			16		
產業佔 GDP 比重（%）	農	工	服務	農	工	服務	農	工	服務
	4	36	60	2	31	67	2	32	66
公務人員數（萬）	50			120			100		
平均每位公務人員服務人民數（人）	10.38			7.4			22.3		
失業率（%）	9.6			4.7			2.99		
通貨膨脹率（%）	3.34			1.0			1.26		
營所稅率（%）	29			28			25		

資料來源：The World Competitiveness Yearbook 2001及作者自行

表三：芬蘭、瑞典、台灣三國資訊力比較（2000年）

比較項目	芬蘭	瑞典	台灣
研發經費佔 GDP 比重（%）（1999 年）	3.1*(3)*	3.7*(1)*	2.1*(10)*
每千人中研發人員所佔比重（1999 年）	9.0*(1)*	7.4*(3)*	4.7*(13)*
行動電話持有率（%）	75.2*(1)*	73.0*(6)*	75.0*(3)*
電腦持有率（%）	57.3*(3)*	57.6*(2)*	33.6*(22)*
上網人口比例（%）	46.2*(6)*	49.6*(2)*	31.4*(15)*
ICT 佔 GDP 比重（%）（Information & Communication Technolgies）	6.0	7.2	N.A
電子商務應用排名	1	4	18
網路金融交易用戶數比重（%）	34.5	34.9	N.A

資料來源：1.The World Competitiveness Yearbook 2001
　　　　　2.OECD
　　　　　3.EITO

表四：IMD 總體排名（overall performance）比較：

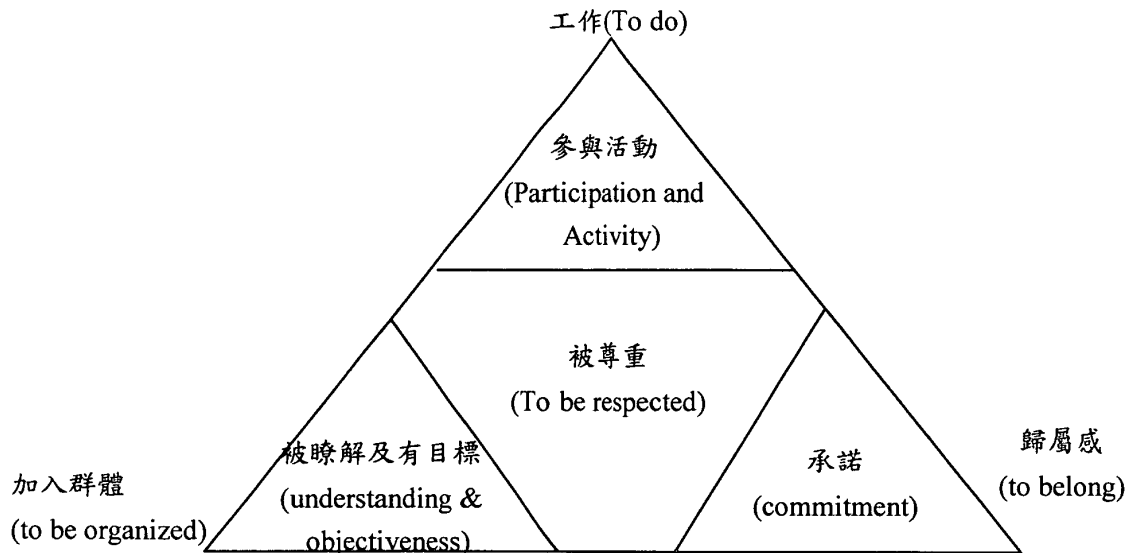| 年度	芬蘭	瑞典	台灣
2001	3	8	18
2000	4	14	20
1999	5	14	15
1998	6	16	14
1997	7	19	18

一、芬蘭

　　芬蘭於 1999.04 正式通過推動「資訊化社會」計畫，並揭示其國家願景（national vision）為：芬蘭社會將成為高度發展及運用資訊之典範，政府並將持續藉由科技改善生活品質、專業技術、國際競爭力及國際互動。當局並為此特別成立「資訊化社會諮詢委員會（The information society advisory board）」，由交通部部長任主委一職，財政部及教育部部長分任副主委，另有 20 位諮詢委員，中央官員 12 名、地方官員 2 名、5 位民間業者（包括 Nokia 等）及瑞典駐芬蘭代表。該委員會之任務為定期向政府報告資訊化推動進度及預測未來發展。其將資訊化社會列為政府經濟改革之中心議題（as a central issue in the reform of the economy），並由財政部草擬五大策略：

1. 資訊科技及網路為公、民營部門再生的工具
2. 資訊產業為未來經濟活動重要一環
3. 資訊及通訊方面的專業知識及技能須維持在一定的高水平
4. 人人均需具備運用科技的基本能力
5. 相關之基礎設施須確能提供具競爭力且品質佳之服務

芬蘭能夠成為資訊大國，依據此次參訪所見，略可歸納為下列八點：

（一）以人性之基本需求(歸屬感、工作，加入群體與被尊重)為政府設計政策之基本原則：

因參與或加入而進入群體活動，藉由互動而被瞭解、因活動或工作而產生目標，進而因彼此間之承諾而產生歸屬感及被尊重（如圖所示）。

工作(To do)

參與活動
(Participation and
Activity)

被尊重
(To be respected)

被瞭解及有目標
(understanding &
objectiveness)

承諾
(commitment)

加入群體
(to be organized)

歸屬感
(to belong)

政府在設計資訊化相關政策時，就是以人類之基本生存需求（basic needs of existence）為出發點，並強調誘因（motivation）、通路（access）及能力（competence）間之關連性。同時認為資訊化社會係始於建構聯絡文化（development of communication culture），藉此助長社會資本之成長（growth of social capital），形成創新之社會（innovation community），進而達成整體福利之成長（growth of well-being），資訊化社會於斯成形。

能力
(Competence)

路徑

能力

動機
(Motivation)

路徑

動機

無相容路徑　　　　　　　　無加入社群之動機
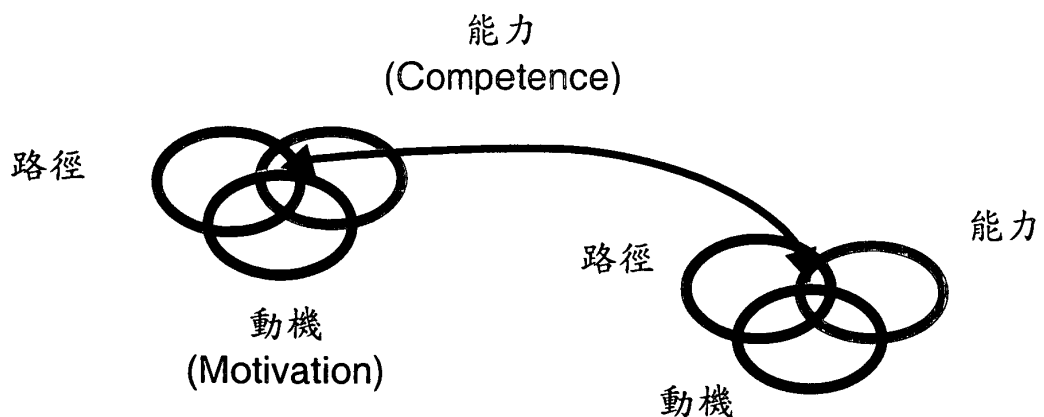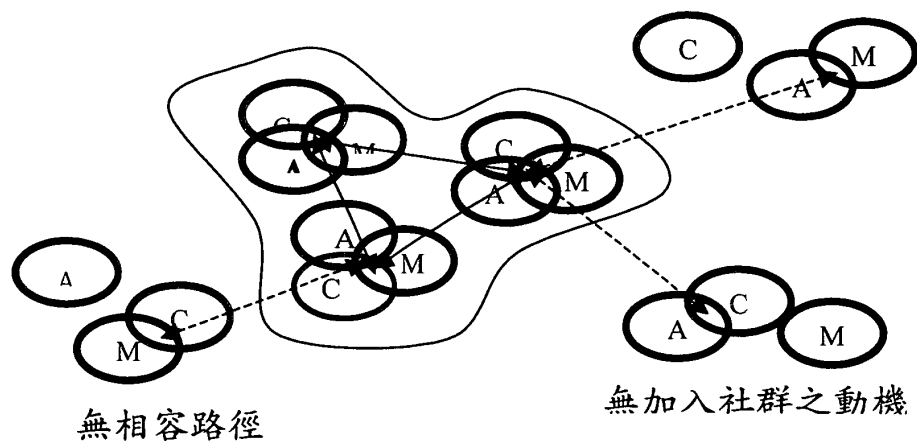
（二）政黨關係和諧：過去三世紀均未受戰火波及（一、
　　　二次世界大戰芬、瑞均未涉及）。芬蘭雖政黨林
　　　立，但彼此基於維護國家整體利益之立場，均能
　　　充分協調溝通，兩年前亦曾組成五黨聯合政府，
　　　維持穩定運作。

（三）產業政策明確：自加入歐盟後，即取消嚴格經濟
　　　管制政策，改採開放市場自由競爭，大幅解除外
　　　資限制，積極爭取外來投資。芬蘭政府認為應以
　　　提供有利企業成長之穩定總體經濟環境為經濟政
　　　策所追求的目標之一，包括：整體總體經濟的穩
　　　定(general macroeconomic stability)、低(貸款)
　　　利率(low interest rates)、穩定的貨幣政策、具
　　　競爭力之租稅政策及鼓勵創業活動（創業為一國
　　　經濟之核心（Entrepreneurship plays a central
　　　role in the economy）。同時，政府亦可藉產業群
　　　聚之觀念(the concept of industrial clusters)分析
　　　經濟結構之改變，甚可經由個別群聚之評估來瞭
　　　解水平產業政策是否有效。芬蘭已成功締造許多
　　　產業群聚，故其產業結構實屬多元(Finnish
　　　industrial structure is diversifying)。另亦可建立
　　　跨國競爭評比之基準(benchmark)，有助於政策執

行效果之檢視。芬蘭政府認為產業政策不可與政府其他目標分離獨立視之，其實與政府總體經濟政策、區域發展政策等有密切之關連。

又該國貿工部於 1995 年在其組織下設一委員會，專司如何在福利社會下發展服務業（to develop services in the well-being cluster），此福利群聚包含各式服務業，如製藥、醫療看護、生化科技、醫療器材、殘障輔助器材及復健設施等，委員會意圖促成社會及醫療看護主管機關和學校及研究機構間緊密的合作，旨在擬定(work out)適用於國內市場及外銷之新的服務模型，此當然同時涉及服務業及製造業等相關企業，此方案除由委員會主導外，TEKES 及外貿協會(Foreign trade association)亦參與協助。

（四）**強調研發**：依據 OECD 研究報告顯示，一國經濟成功關鍵要素在於新知識的產出確能有效地運用於產能的提昇（to produce new knowledge and to develop production that effectively utilizes it），側重研究及科技發展並提昇 know-how 的層次，將有助於結構的改變、引進新產業及改變勞工需求的態樣。芬蘭政府政策亦循此一趨勢，政府所推動之優先專案均屬研發方面之投資、致力教育品質之提昇及在職訓練。

芬蘭學會(the Academy of Finland)的研究資源近幾年並未有任何實質改變，但學校的研究預算則遭刪減，科技研究機構的資源仍維持先前水準，TEKES 已引進一 equity-based loan system。芬蘭政府於 1996.09 作成增加研發資源以朝資訊科技社會發展之決議，其非僅專注知識型科技產業、數學或自然科學之研發，亦同時顧及製造業及其他業別，且在基礎研究（basic research）、應用研究(applied research)、產品

開發 (product development) 、 科技發展 （technology development）及訓練(training)間取得平衡，並建造世界級的研究機構、增加與國際研究機構之往來，並如期於 1999 年達成研發經費佔 GDP2.9%之目標。

（五）**落實教育訓練**：近幾年，政府推動無數有關發展教育及訓練系統之計畫，主要目標均在滿足人民及企業對資訊及 know-how 的需求，推動技職學校(polytechnics)堪稱一大重點，藉由專業資格之培育、學徒訓練（apprenticeship-based training）及在職訓練(learning on the job)縮短理論與實務上之差距。大學及技術學校(polytechnics)之教學亦應隨著雇主需求的改變而有所調整：技術學校應偏重進階專業技能之教育，大學則應適時引進若干特殊的課程(special programmes)，並藉由監控教學品質及畢業學生之就業率作為評估衡量之指標。

（六）**IT 政策明確**：芬蘭於 1999.04 正式通過推動「資訊化社會」計畫，並揭示願景為將該國成為高度發展及運用資訊之典範，政府並將持續藉由科技改善生活品質、專業技術、國際競爭力及國際互動。當局並為此特別成立「資訊化社會諮詢委員會（The information society advisory board）」，該委員會之任務為定期向政府報告進度及預測未來發展。

近兩年（迄 2001.10）亦陸續訂定或修正通過與推動資訊化社會相關之 12 項法案，如增訂個人資料檔案法（Personal data file Act）、Electronic communication in administration Act、Electronic identification card Act 、Data protection in work life Act ，修正 Telecommunication market Act 、

Residential limited companies Act 等。而如 Total reform of the radio Act、Act on domain names、Communication market Act、Act on the data system of real estate 等 10 項相關法案則刻正於國會（Parliament）審議中。

此外，亦積極推動相關方案，如：

A. Finlex：此乃法務部為提供民眾方便、即時查詢之法規資訊資料庫（databank on legislation），並藉由網路低傳播成本之特質（by the low information dissemination costs through the internet），將若干民眾感興趣之政治性議題之政府立場（political solution）於網站中適時陳述。

B. eTampere：1990 年代初期，Tampere（芬蘭一城市）即創先推動資訊城市計畫（Infocity programme），致力於公共行政業務網路化（concentrate on electronic services of public administration），此計畫儼然成為各地方政府學習之典範。

C. FINEID（electronic identification project）：本計畫肇始於 1996 年，主在建立全國人口資訊系統（the centralised population information system）並推動電子身份證（electronic ID cards），隨者 1999 年通過 Electronic communication in administration Act 及 Electronic identification card Act 兩項法案後，本計畫之相關法制更臻完備。

D. BIS（Business and Corporation Information System）：本專案係由賦稅單位（tax administration）及商標暨營業登記局（National board of patents and registration）共同策畫推動，於 2001.04 起，整合營利事業登記碼（trade register number）及稅籍代碼為單

一之營業辨識碼（business ID code）。

（七）**公共管理部專司 e 化之推動**：芬蘭政府在財政部下設一公共管理處（Public Management Department），專司中央政府再造（reform central government）及 e 化之工作，其建立一整合型入口網站，提供民眾資訊及服務並進行雙向互動（主係以一般人民為對象、企業或其他團體、機構次之），預計於 2002 年初正式上線；另該處於 1994 年即已著手規劃連結總統府、國會及 13 部會之內部網路系統（intranet），俾真正落實知識管理（Knowledge Management；KM），達公開（openness）、知識分享（knowledge sharing）、信賴（confidence）、共同工作與學習（working and learning together）之目標。

（八）**有強大之資訊大廠－ Nokia**

1. 成立於 1865 年，原為一木材工廠
2. 1967 年合併芬蘭橡膠公司、芬蘭電纜公司，成立 Nokia 集團。
3. 1990 年轉型專注於通訊產業之拓展
4. 1991 年推出全球首部口袋型 GSM 行動電話
5. 1992 年率先推出類比式行動電話
6. 全球 130 城市設有據點，員工人數逾 6 萬人
7. 近五年營業額及營收情形：

單位：億美元

年	營業額	營收
1996	59 5	6.5
1997	79 6	12 8
1998	119 9	22 4
1999	177 9	35 2
2000	273 4	52

■營業額　□營收
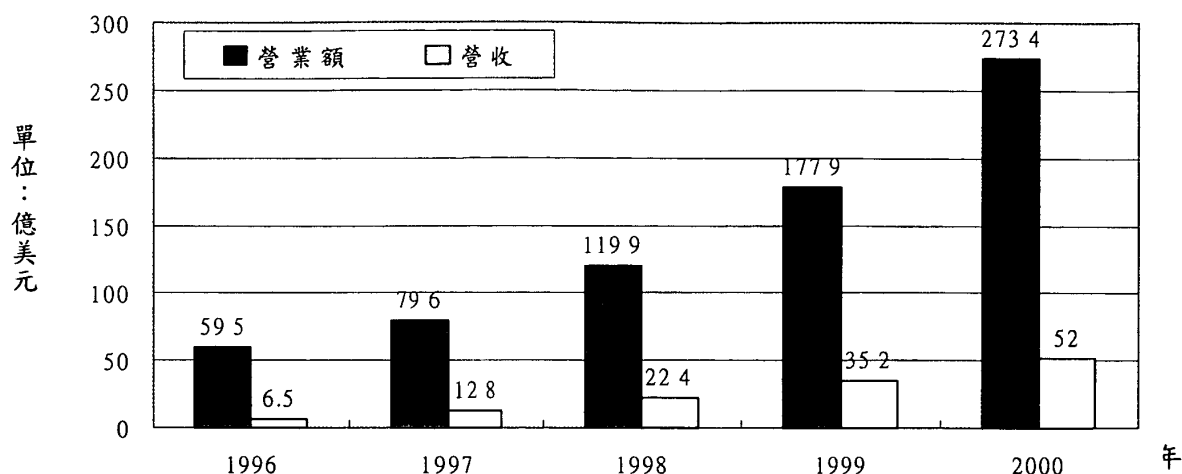
二、瑞典：

瑞典於 1992 年首開全歐之先聲全面開放電信市場（opened up to competition），1996 年陸續修正完成 Utility Easement Act 及 Employment Protection Act，擴展其通訊基礎建設並保障員工就業權利，且確立其 IT 政策之目標：成為全世界第一個推動全民資訊化社會之國家（Sweden become the first country to create an information society for all.）。為達此一目標，政府除投資於寬頻網路（broadband network）之建造外，並專注心力於法規制度（regulatory systems）之改造、教育及在職訓練（education and training）和基礎建設（infrastructure）三方面，俾提升瑞典人民在 IT 方面之信心（confidence）且運用自如（competence），而相關資訊服務及運用隨處可得（accessibility）。隨後該國貿工部於 2000.03 發佈「An information society for all」為推動資訊化社會之願景。

瑞典位於斯德哥爾摩西北方 Kista 之「無線矽谷（wireless valley）」，現有超過 200 家廠商（包括 IBM、HP、Siemens、Oracle、Intel、Compaq 等），根據 2000 年 International Data Corporation(IDC)之調查結果，其為全球排名第三之科技中心（technology hub）（排名

第一為美國矽谷、第二為波士頓，新竹科學園區排名第十）。

　　瑞典能成為資訊大國，大致可歸納為以下六點重要因素：

（一）**資訊法制完備**：1766 年即已通過「資訊法(Information Act)」，賦予人民有權閱讀國家或地方政府或法院或任一公家單位之文件（gives anyone the right to read any state, municipal, court or public agency document）。換言之，瑞典在 18 世紀即已達到資訊透明化之程度（我國「資訊公開法」尚在立法院審議中），故可謂其成為資訊大國之準備工作至少提早我國 230 年。

（二）**專責機構進行協調**：1680 年即成立Statskontoret，協助政府處理相關公共管理業務(Public Management)，並進行軟性協調，強調政府部門無中心指揮者；另於 1998 年設立單一窗口(A single access point)為人民提供全面性服務，包括：①單一窗口公共服務、②單一窗口公共資訊、③電子化表單及④多種語言之選擇等全方位服務（如 on paper、on site、on call 及on line）。

（三）**透過教育追求社會安全及彈性間之平衡**：瑞典教育主分基礎教育（basic education）（小學到大學）、成人教育（adult education）及終身學習（life-long learning）三部份。基礎教育首在培養中小學生（pupils）獨立及自信心（self-reliance），並側重團隊工作（teamwork）態度之養成。另藉由各地方之成人學校（adult schools）或成人教育研習營（adult education campaigns），不斷提供各式在職教育訓練計畫或外語學習課程，約 25% 瑞典成年人均參加過相關之成人教育課程。而終身學習係成人教育之延

續，主在提昇就業者（employee）在資訊科技方面之應用能力及技巧。

（四）**IT政策明確具體**：瑞典自一九八〇年代即開始進行法規鬆綁，藉此帶來更多商機及市場〈Deregulation means more commercial，more market〉。另提供相關獎勵及推動相關計畫，並於早期即延攬工程師及教授參與美國麻省理工學院推動之網際網路相關計畫，致瑞典E化成效較其他國家卓越。

1993 年瑞典領先全歐率先完全開放電信市場。1994.03 結合不同領域之 IT 專家組合一 IT 委員會，期許 2005 年成為歐盟 IT 最佳者，其除對政府當局提出策略面建言及勾勒未來趨勢外，該委員會主要職責在於宣導 IT 之價值（promote the value of IT），提升人民之生活品質及強化國家競爭力。1994.08 該委員會提出七個努力方向，包括：教育、法制、公部門之行政作業、健康醫療照護、通訊網路、產業及商業（industry and commerce）和 IT 研究。

該國相當重視 IT 之基礎建設，除於 2000.07 修正通過 Utility Easements Act，以擴充網路之傳輸容量（transfer capacity），使其寬頻傳輸資料速度每秒至少達 2Mb 外，該國電信法(Telecommunications Act)亦要求業者提供普及服務義務（Universal service obligation；USO）。政府當局預估未來六年資料傳輸移轉之數量將為現今之 1000 倍，而提供高效率之電信及資料傳輸功能為政府終極之責任（ultimate responsibility），故其預計耗資 38 億美元，於 2004 年底前，完成所有地方縣市之骨幹網路（A backbone network to all municipalities）及連結地方網路之區域網路（A regional network linking municipalities）和城市網路（urban

networks）。

其所推出之相關重要專案，包括：

A. ITiS（IT in schools）：瑞典政府認為學校的改變主要均透過老師為媒介，而老師是學習過程中之要角（All real changes in school must come through the teachers, who are, key figures in the learning process.）。其於 1970 年代初期即推動一系列 IT 專案，初期係以技術教授為主，近期則以運用 IT 提升學習效果及效率為主。全國教育局（National Agency for Education）於 1992 年大力推動全國學校 IT 政策（National IT policy in schools），並於 1994 年邁入另一新階段，針對學校老師推動一網際網路服務計畫（Internet-based service that was primarily aimed at teachers.），提供指導手冊，強化老師運用及整合網際網路資源的能力，並評估老師們使用 IT 的情形，該國一知識基金會（Knowledge Foundation）並提供 1.4 億美元贊助相關計畫。1998 年秋天，教育科技部（Ministry of Education and Science）正式成立 it is 計畫，提供學校老師及高階行政主管約 6 萬人在職 IT 訓練，期許老師們能將 IT 變成教學工具（how IT can be used as an educational tool），達成目標者，還可將電腦留在家中使用。而瑞典政府亦協助歐盟建構 European Schoolnet（EUN），促進歐盟各學校間教學資訊之流通。

B. SwIT（Swedish national IT training programme）：1997 年初，瑞典產業聯盟(Federation of Swedish Industries)提醒執政當局注意 IT 部門專業人才培育問題，市場難以覓得電腦使用者與專業者之中介人才（the

employers had difficulty in finding personnel at the interface between computer users and computer specialists.）。有鑑於此，瑞典政府投注 1.2 億美元推動瑞典全國 IT 訓練計畫，即 SwIT，結合全國勞動市場委員會（National labour market board）、產業聯盟及資訊電信產業協會（Association of Swedish IT and Telecom industry），規劃一系列相關課程，並於 1998 至 1999 年間培訓 1 萬人，並特別讓婦女、殘障人士及新移民參與此項訓練課程。本計畫已於 2000.03 結束，政府當局曾評估此計畫之效益，發現失業人口接受完整訓練後，均可於六個月內順利找到工作。

C. IT for senior citizens and for persons with disabilities：對老年人及殘障人士而言，IT 可增進其獨立能力並提升生活品質，故政府耗資 570 萬美元，於 1998 年推動一為期三年之相關計畫，主要在強化殘障人士對 IT 之應用能力，使其能與正常人立於叫公平之競爭環境。另 IT 委員會針對老年人則特別建構一 SeniorNet，其藉此降低代溝及被孤立。

D. 24－hour public authorities：瑞典法務部下屬之公共管理局（Agency for public management）於 2000 年初成立一 24 小時線上服務網站（www.statekontoret.se），凡政府已公佈之訊息，民眾均能於線上免費查閱或下載。此外，該國現有 12 個入口網站可供查詢與政府有關之事項，其中 www.sverigedirekt.com（即 VirtualSweden）屬政府部門之聯合入口網站。

（五）提供購置電腦或連結寬頻之誘因機制：

1.　瑞典政府認為員工精通電腦（computer literate）將成為企業或產業之競爭優勢。故該國政府修改稅法(tax law)並於 1998 年正式施行 PC Reform(Personal computer reform），允許雇主以分期（一般為三年）貸款方式轉售正式員工家用電腦，售價較一般零售價便宜（price far below retail），貸款金額由員工薪資（gross salary）分期自動扣繳，該用以購置家用電腦之扣繳薪資免納所得稅，而雇主先行墊付購置電腦之費用亦可用來抵繳其原應分擔之社會福利分擔額。

瑞典政府認為此方案之推行，係促成該國家用電腦普及之主因，其家用電腦普及率亦由 1998 年 48% 增至 1999 年 67% 。

2.　瑞典政府於 2001.01 另公佈實施：私人或民間企業連結網路之費用若超過 8,000 瑞典幣（約 762 美元），其中的 50% 可享租稅扣抵（tax reduction），扣抵上限額度為 5,000 瑞典幣（約 476 美元）。此計畫適用該國 23 萬戶家庭及 9 萬家民間企業（含獨資），初步估計，應有二成家庭及七成企業引用此一優惠措施。

（六）有強大之資訊廠商- Ericsson

1.　成立於 1876 年，現為斯德哥爾摩無線矽谷之核心（nucleus in wireless valley）。

2.　1970 年代率先推出第一代行動網路（與其相近似之北歐行動電話（Nordic mobile telephony；NMT）直至 1981 年方推出）。

3.　為藍牙科技（bluetooth technology）之創始者，並於 1998 年春問世，預估 2002 年將被廣為應用。

4.　深入研發 GPRS（General packet radio services），並於 2001 年底正式啟用 3G 系統（Universal mobile telecommunications

system），且擁有與 3G 有關之 45 項專利權
（總為 172 項）。

5. 預計 2011 年推出較 3G 速度快 50 倍以上之
4G。

6. 全球 140 個城市設有據點，員工人數約 10.5
萬人

7. 近五年營業額及營收情形：
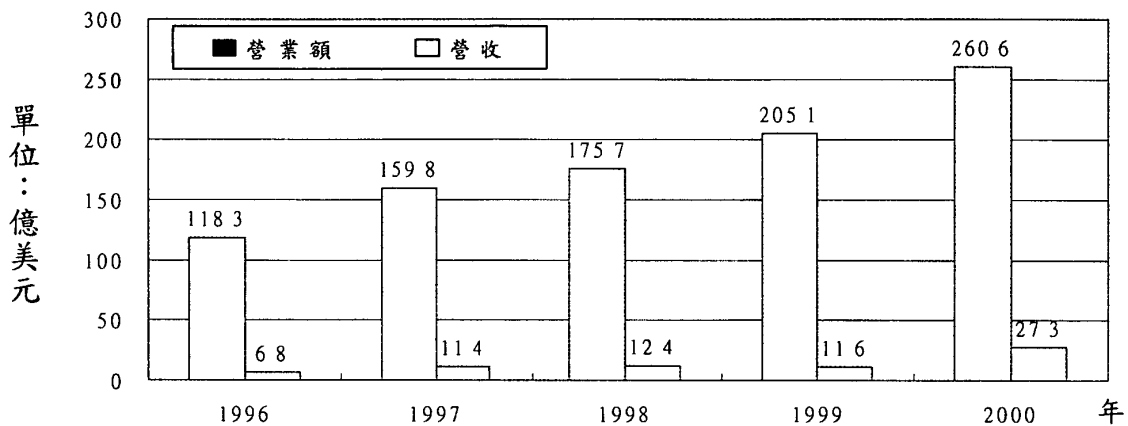
伍、主要發現暨結論與建議：

一、 芬、瑞成為資訊大國之原因大致可再歸納整理為以下四
點：

（一）共同點：

1. 總體信用社會（credit society）已然形成，政府守信、人
民守法。

2. 資訊法制之重視與完備：瑞典於 1766 年即已制訂「資訊
法」；芬蘭於近兩年亦將陸續完備「資訊化社會」相關
二十餘項法案之增修訂。

3. 政府 IT 政策明確且落實推動相關具體方案：此二國因教
育水準高〈芬蘭教育制度排名世界第一、大學教育排名
世界第二〉、固定電話線滲透率普及〈芬蘭約 56%、瑞
典達 70%〉、家用電腦普及〈芬蘭家用電腦比例逾 50%、
瑞典達 60%〉及國民自幼即開始接觸電腦是為其建造一
純熟 IT 環境之基本條件。再者政府明確之 IT 政策及相關

具體方案之推動（如前所述），促使此二國成為全球資訊力大國。

4. 組織設計具巧私與創意，如：

（1）芬蘭公共事務管理處（Department of public management）隸屬財政部：公共事務管理處主係規劃發展國家整體經濟永續管理政策（outlines and develops macro-economically sustainable management policy），包括政府再造及 e 化工程，以符合民眾與企業之需求。芬蘭政府或係從財政角度思考公共事務管理，該單位針對重大政策及公共服務事項進行成本效益評估，並指派該單位之高階主管擔任「資訊化社會」首席執行秘書。

（2）瑞典政府部門均多採 Agency 制，英國亦效仿其制度。該國公務員雖多達一百二十萬，但均屬各單位自行招考聘用，自行議定薪資，且公務員並未享有終身保障雇用，與民間企業雇用員工無異。此相關制度可供我推動政府再造組織設計單位再深入研究。

（3）瑞典公共事務管理局（Agency for public management）隸屬於法務部：公共事務管理局主司政府各項政策之研究及評估（包括調查、成本效益分析、績效評估等），並提昇政府各單位運用 IT 處理公共事務之能力，且確保公部門電子基礎建設（electronic infrastructure）之開放與安全。此外，，對於一般重要或大額之首次電腦採購，亦由該單位負責尋價並訂定相關準則供相關部門參考，杜絕相關部門進行採購過程中可能發生之法律及價格爭議。

（4）瑞典投資業務局（Invest in Sweden Agency）隸屬於外交部：投資業務局主係在吸引外資直接投資，其穿梭於各國政府單位、本國各政府部門及廠商間折衝協調，並針對若干特定產業（如 IT、醫療照護、Call center、Microelectronics 等）提供特別誘因以吸引外資進入。瑞典政府認為吸引招商涉及國際組織運作或外交事務以及人才引進流通之問題，為考慮其便宜

性，乃設計隸屬外交部，不似亞洲諸國均將該局置於貿工部或經濟部之下。而該局之經費一半來自政府，另一半則來自受協助廠商或合作對象之資助。

5. 有強大及歷史悠久之資訊大廠：廠商隨時提供最新之通訊設備予國人及政府機關選用，充分做到隨時支援、處處上網。如 Nokia 及 Ericsson 均同時推出行動電話＋PDA＋即時上網功能之最新行動電話，且廣泛適用於政府及跨國企業決策人士。

（二）　其他：

1. 芬蘭以人性之基本需求（歸屬感、工作、加入群體與被尊重）為政府設計政策之基本原則。

二、　建議：

〈一〉此行均見大陸參訪團體成群結隊參觀拜會〈每團均約有三十至五十人〉，未來此些人考察後所吸取之國際經驗將成我更大之競爭壓力。我政府單位似不得忽略再加強相關人員之出國培訓工作。

〈二〉欲發展「資訊化社會」，宜由 1.加強資訊方面之教育及研究著手、2.落實電訊通信方面之基礎建設、3.完備相關法制環境、4.預防善於運用科技者與不善於運用科技者間之嚴重落差、5.政府部門應加強推動電子化業務等五方面著手。並宜以發展成為「網路社會（Internet society）」、「寬頻社會（Broadband society）」及「易進入之社會（Accessibility society）」為願景。

〈三〉賴我駐北歐單位努力安排下，得以會見多位高階政府及民間企業人士，惟在政府出國經費日益短絀下，若擬擴大我對北歐貿易及關係，恐須再有相關主管單位的重視與推動。但很顯然地，北歐諸國又應為我日後重視及學習之對象，似有必要深入檢討此一推廣計畫之必要性，並擴大其他資源之結合與運用。

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eGovernment

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eGovernment drivers in Finland

- (constant) Need to improve efficiency and quality of service in administration

- including external costs (e.g. companies)

- People's expectations

- Openness of administration

- Ensuring delivery of service in a situation where number of local offices needs to be reduced

- Political interest (e.g. eEurope Action Plan)

Political support for eGovernment

- The Government Programme
  - (http://www.vn.fi/vn/English/index.htm)
- Government decisions and resolutions
  - on government information management 1989 and 1994
  - on electronic transactions, development of services and reduction of data gathering 5.2.1998
    http://www.vn.fi/vm/kehittaminen/tietoturvallisuus/hst/hsteng.htm
  - ”High-Quality Services, Good Governance and a Responsible Civic Society 16.4.1998
    (http://www.vn.fi/vm/english/public_management/guidelines.html)
  - on development of government information management 2.3.2000
    http://www.vn.fi/vm/english/public_management/it.htm

Government`s long-term IM strategy

- Efficiency
  - administrative processes
  - data sharing
- Electronic communication within government and in intefacing citizens and businesses
- Transparency of administration
- Electronic information delivery and transactions
- Joint services
- Security and privacy

IT co-ordination in government administration

- Ministries and agencies are responsible for their business

- Ministry of Finance has a support and co-ordination role in information management
  - information security
  - IT architecture, interfaces, standards
  - information gathering
  - information services

IT co-ordination in government administration (2)

- Ministry of the Interior is responsible for government - municipalities IM co-operation

- Ministry of Justice is responsible for legislation on how government works

- Prime Ministers office responsible for IM in Council of State

- National Archives sets guidance for electronic document management

IT co-ordination in government administration (3)

- **Government Information Management Steering Committee**
  - chaired and run by MoF
  - ministries represented

- **Public sector Information Management Council**
  - chaired by MofI, vice chair from Federation of Finnish Municipalities
  - members from ministries and municipal sector
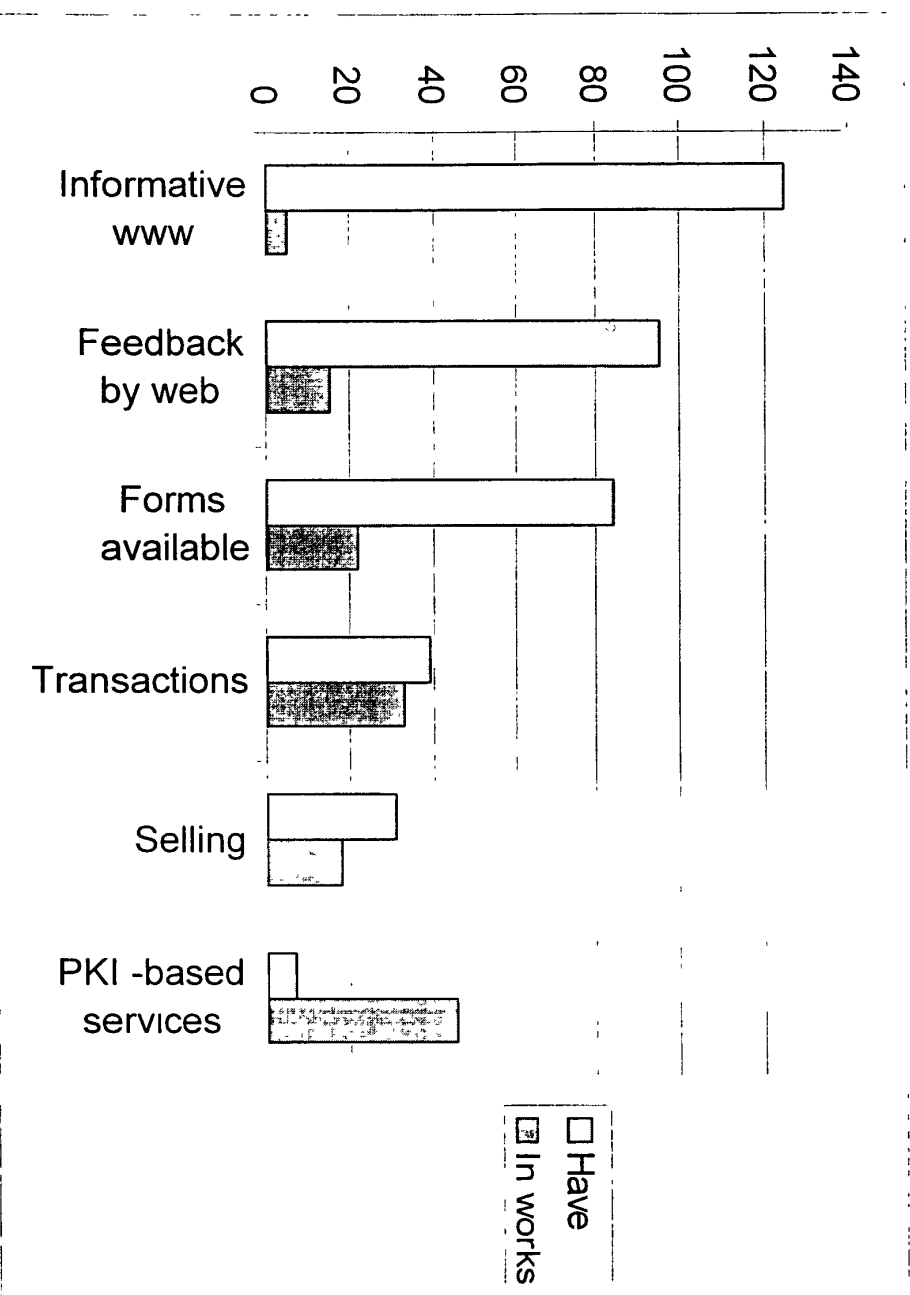 - gives standards recommendations

IT co-ordination in government administration (4)

- Government Information Security Committee
  - led by MoF
- Information Service Professionals network in Council of State
  - rotating chairmanship, staff in MoF
- National Database owners group

ICT in Finnish Government

- PC penetration in government is >100%

- more than 85% of employees have Internet e-mail

- 81 % of employees have WWW -access

- IT costs are 1,2% of state budget (5% of operational costs)
  - twice EU average per employee

- 3 100 people work in government IT (2,6% of wf)

- All offices connected with TCP/IP

- Little central steering of information management

Internet services (number of agencies providing service)

Informative www

Feedback by web

Forms available

Transactions

Selling

PKI -based services

0 20 40 60 80 100 120 140

□ Have
■ In works

Processes - information sharing

- National shared databases on
  - People, Corporations, Real Estate, Apartments, Vehicles..
- Connected with unique ID:s and common classifications and other data standards
- Government, municipalities and church co-operation
- Update once - use everywhere
- Use of data is defined in laws on the databases and common rules in privacy law

Process benefits

- Direct access to basic information - no need to ask customers to provide it
  - number of civil certificates has declined from 8 M a year to 0,5 M a year

- Change of address to only one place
  - toll-free phone, web or paper form
  - Population Register and Finnish Post share updates and both deliver and sell address changes
  - about 1% of population has said No to selling of addresses

- Private sector uses same identifiers
  - data from companies can easily be combined with government data when needed and possible
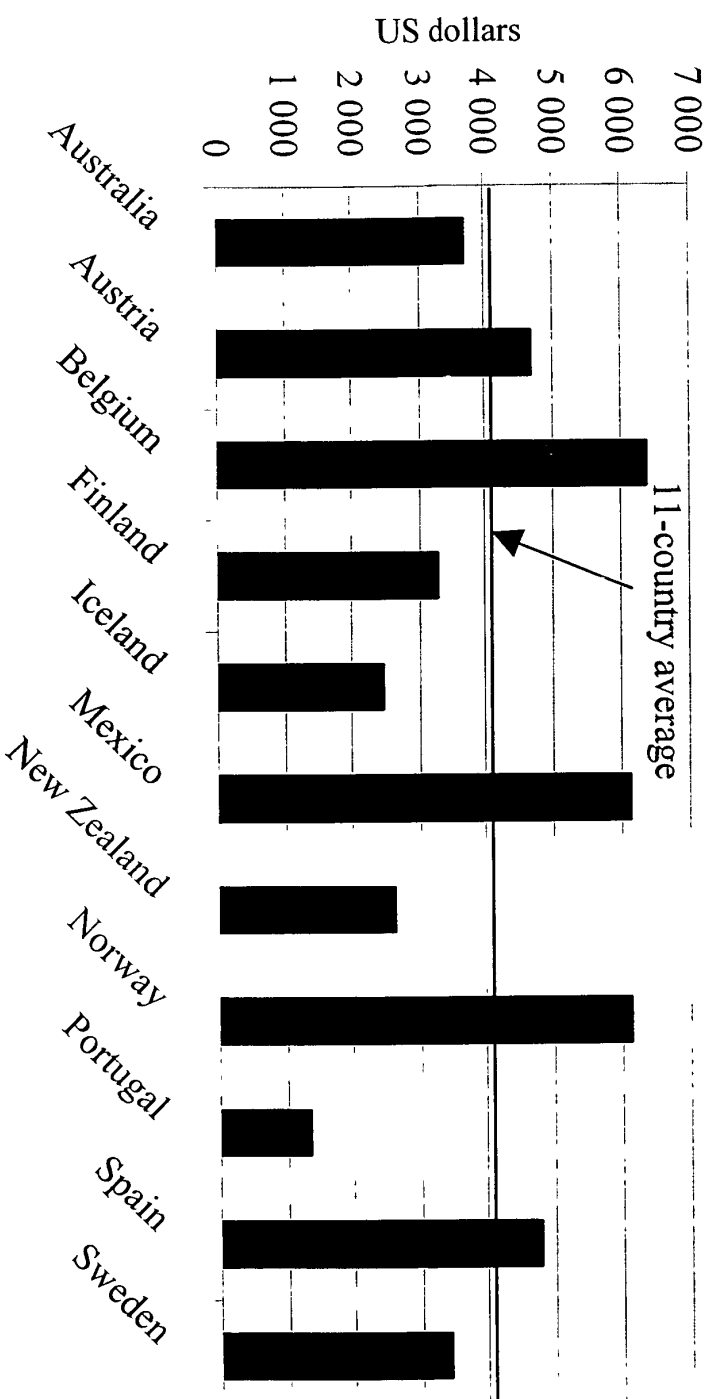 - companies can use government data in their systems

Process benefits - Tax -proposal

- 3 m Finns don't need to declare for tax

- Tax administration compiles a tax-proposal out of data it gets electronically from:
  - Employers - wages paid, other benefits
  - Insurance companies - pensions, unemployment benefits..
  - Banks - loans, interest paid/received, share transactions...
  - Social security - sickness payments, pensions, student grants...
  - National databases - real estate, apartments and vehicles ownership

- Tax-payer accepts by doing nothing or supplies additional information to tax-administration

- Attached to tax-proposal is a bank-transfer for additional payment or information on how much and when tax-administration pays to tax-payers bank-account

Process benefits - population census

- ## Since 1985 Census has been done from existing databases

  - information from 30 different databases at year end situation is collected to Statistics Finland

- ## Benefits

  - census results are available within months rather than years
  - information quality is high (e.g. no problems from people understanding question differently)
  - costs are about 17 US cents per inhabitant vs. 6 US $ when last made in traditional way

Regulatory costs of SMEs

US dollars

11-country average

Australia
Austria
Belgium
Finland
Iceland
Mexico
New Zealand
Norway
Portugal
Spain
Sweden

7 000
6 000
5 000
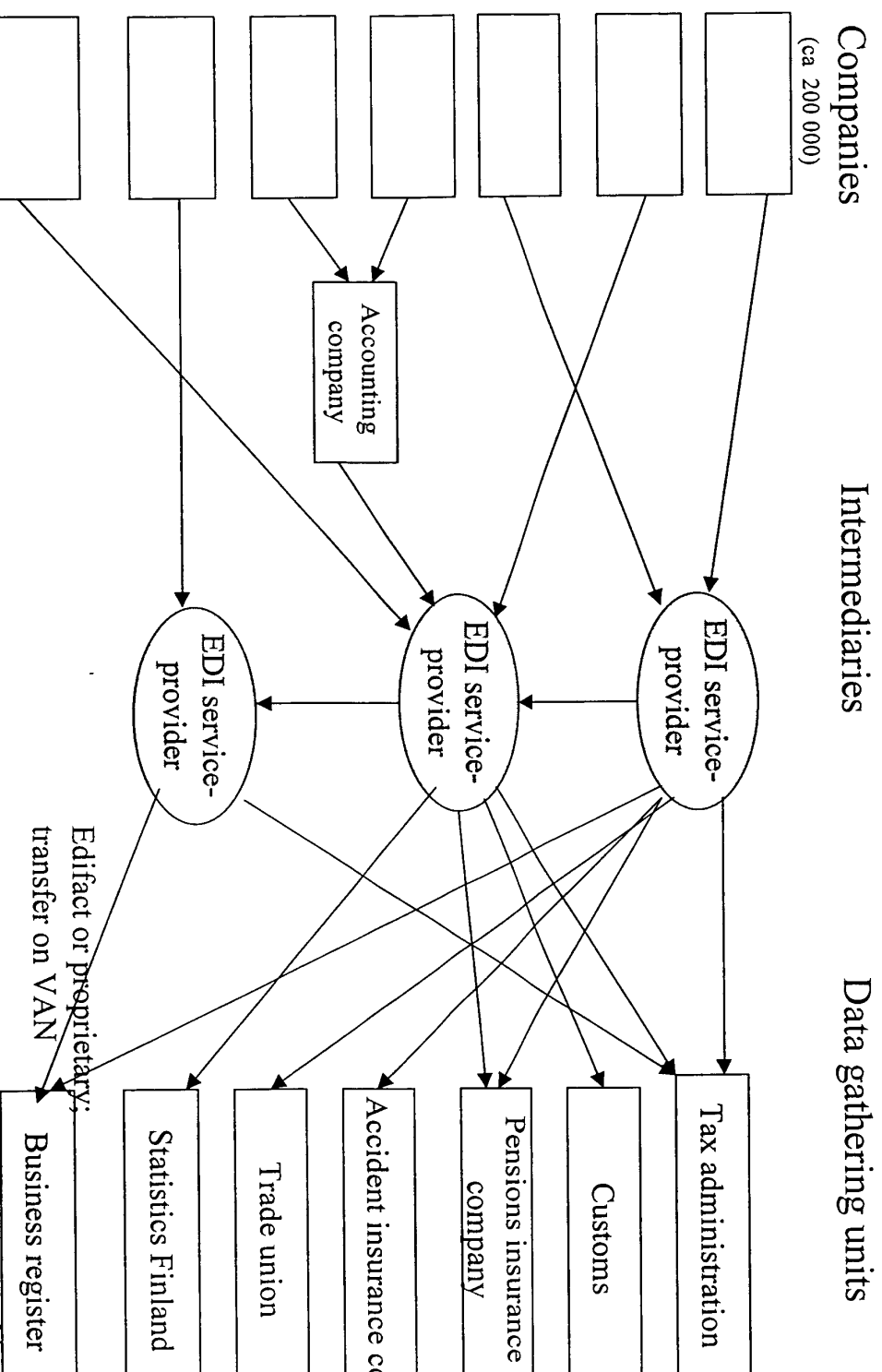4 000
3 000
2 000
1 000
0

15

Electronic reporting for companies

- Less bureaucracy to people has meant more reporting to companies

- Companies can send administrative reports to EDI -companies who forward them to agencies
  - one address, one user authentication, one help-desk for a reporting company
  - less direct data connections for the agencies
  - standardised reporting messages
  - same data distributed to several agencies
  - many technical possibilities for a reporting company (EDI, e-mail, FTP, web-forms, telefax..)

One-stop shop reporting model

Companies
(ca 200 000)

Intermediaries

Data gathering units

Accounting company

EDI service-provider

EDI service-provider

EDI service-provider

Edifact or proprietary-transfer on VAN

Business register

Statistics Finland

Trade union

Accident insurance co

Pensions insurance company

Customs

Tax administration

Olavi Köngäs 7.9.2001

Challenges of information sharing

- A lot of legacy and proprietary solutions due long history

- Mass delivery is widely used – need to move to message based delivery

- People are positive to information sharing and trust administration – that must earned every day

- Changes are difficult due large number of stakeholders

- Co-operation between agencies is not always smooth......

Democracy and transparency of administration

- Traditional nordic transparency principles

- Act on Openness of Government Activities
  (http://www.om.fi/3470.htm)

  - "Official records shall be in the public domain"

  - Requires authorities to publish their information - shift from "supplied when asked" to active information policy

  - Defines principles for "good practice in information management"

  - Challenges to IM - classification of data, metadata, authentication...

Transparency - from idea to law

- **Preparatory work in ministries**
  - project database (http://www.hare.vn.fi)

- **Reports and proposals**
  - ministries web-sites and project database

- **Government proposals to Parliament**
  - council of state web -site (http://www.vn.fi)

- **Parliament discussions and decisions**
  - parliament web -site (http://www.eduskunta.fi)

- **Published laws**
  - http://finlex.edita.fi

Joint information services

- ## Citizen's Guide (http://www.opas.vn.fi)
  - One site that organises public information by phase of life - Children, Young People, Working Age ....
  - Links over 60 government agencies and over 200 municipalities

- ## Electronic forms (http://lomake.vn.fi)
  - one site for public sector forms
  - now for download, next step interactive

- ## Directory (http://www.julha.fi)
  - X.500 / LDAP directory of organisation and public sector employees contact information

Law on electronic transactions with government (1.1.2000)

- Informative and guiding law to help facilitate electronic transactions

  - defines basic parts of administrative process conducted electronically
  - defines responsibilities of administration and customer
  - defines basic requirements for authentication and security measures
  - use of qualified electronic signatures
  - http://wwww.om.fi/2838.htm

Electronic authentication and digital signature

- Government decision 5.2.1998
  - Population Register Centre as government CA
  - ID card with smart card for storing certificates
  - Police provides
  - voluntary, costs 160 FIM for 3 years
  - functions as a Schengen minipassport
- Private sector relies on passwords (use once)
- PKI and smart card solutions emerging from private sector (NovoTrust and Certall)

Status of electronic signatures in gov.

- Mainly in piloting, few production systems so far (change of address, applying to some schools, labour market services)
  - About 8 000 cards sold so far
- Technical problems
  - client software unstable, interoperability e.g. in S/MIME
  - smart-card support limited in operating systems and apps
- Supply - demand, hen and egg
  - will take off once banks adopt smart-cards and PKI
  - two banks accept government certificates
  - major banks co-operate in production PKI
  - it is expected that all major banks support smart-cards and PKI 2002

Towards "seamless" health-care

- Ministry of Health and Social Security project
  - electronic patient records
  - XML based information exchange interfaces
  - smart-card based authentication for personnel and customers
  - access to patient information
  - transfer of information from one hospital to another with customer consent
  - telemedicine
  - ICT support to disabled and old so that they can live in home
  - see http://www.makropilotti.fi

Finland compared to other EU countries in eGov

- Finnish government uses 2 times EU average in ICT per capita (Sweden, Denmark and Finland leading, Mediterranean MSs lagging

- Highest penetration of Internet among government officials in Europe

- Together with Denmark and Sweden leading in information sharing

Finnish Information Society Policy

Olavi Köngäs

Chief Information Officer

Ministry of Finance

Public Management Department

IS in Lipponen II government programme (15.4.1999)

- "Finland is gradually developing into an information society in which knowledge and expertise are a part of the culture and also one of the key factors in production. Finland must be in the forefront in terms of technological policy."

- .. content production

- .. a pioneering role in implementing a humane and sustainable information society.

- .. cooperation between different sectors and administrative branches also on an international level

- .. prevention of digital divide

- .. ICT in improving public services

2

Information Society Advisory Board (1)

- Chaired by Minister of Transport and Communications Olli-Pekka Heinonen

- Vice-chairs: Minister in Ministry of Finance Suvi-Anne Siimes Minister of Education Maija Rask

- CEOs of Digita, ICL Data, Nokia Networks and TietoEnator

- Permanent Secreteraries of Ministries of Transport, Trade and Industry and Education

Information Society Advisory Board (2)

- Government agencies, trade associations, NGOs

- Secreteraries from Finance, Communi-cations and Eductation Ministries

- 1996 - 1999 we had a smaller Council and a large Information Society Forum
  - difficulties in defining work areas and real results
  - Forum failed

# Information Society Advisory Board (3)

- Advisory body
- Tasks
  - *to foresee and follow IS development and to make initiatives that support cross-sectoral co-operaion*
  - *to follow and discuss horizontal IS initiatives and legal proposals and their coming to force*
  - *to follow global IS initiatives and participate in formation of Finnish positions*
  - *to develop public - private partnership in IS initiatives*
  - *to regularly produce an analytical report on IS developments to Council of State*

Long-term Information Society strategy in Finland

- **From raw materials exporter to high-tech**
  - more R & D funding (from <1% to 3% of GDP)
  - more resources to high education, especially technical
- **Early liberalisation of telecommunications**
- **Equality of citizens**
- **Education and culture**
- **Process efficiency, networked economy**
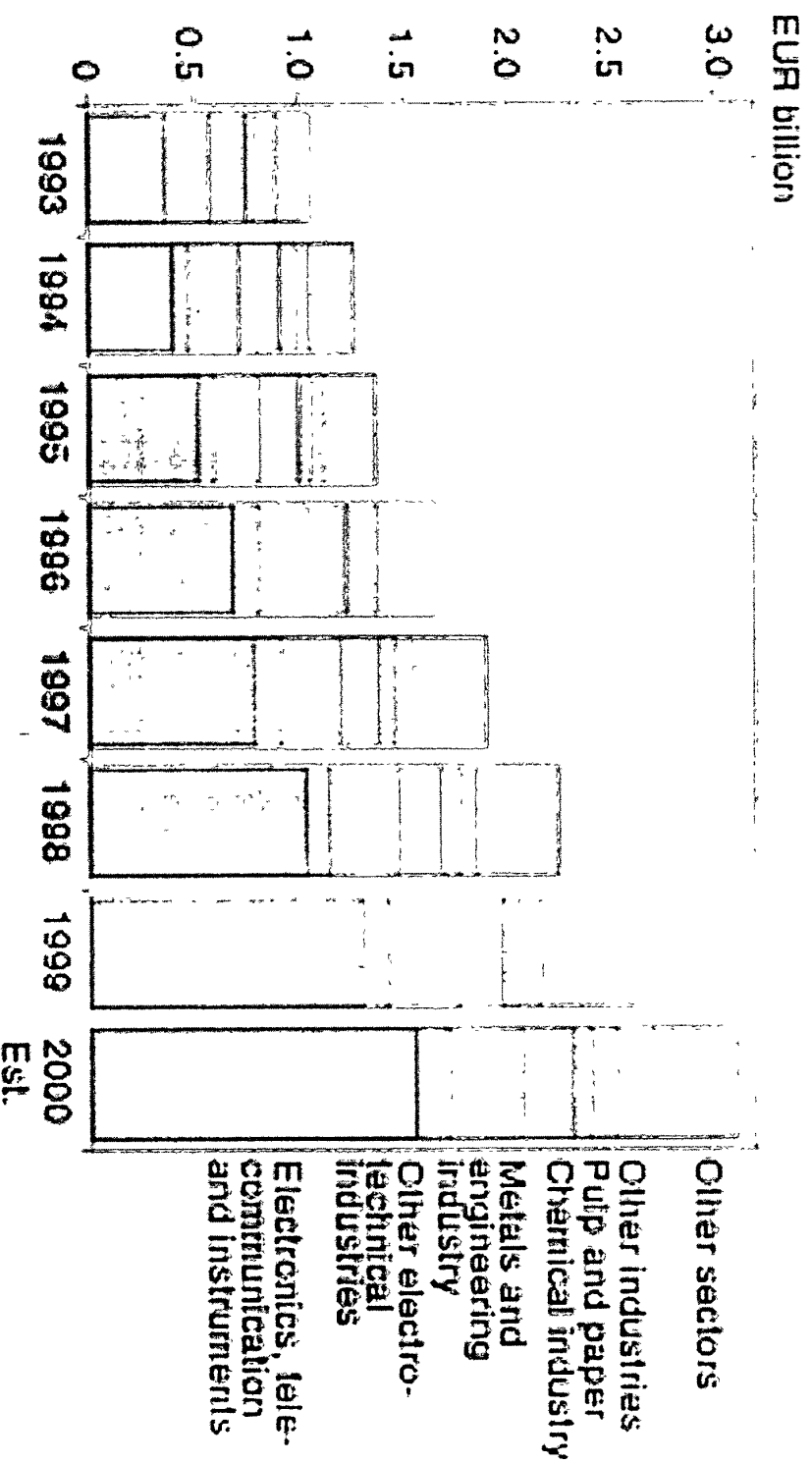- **Transparency and strengthening of democracy**

R&D expenditure in some OECD countries
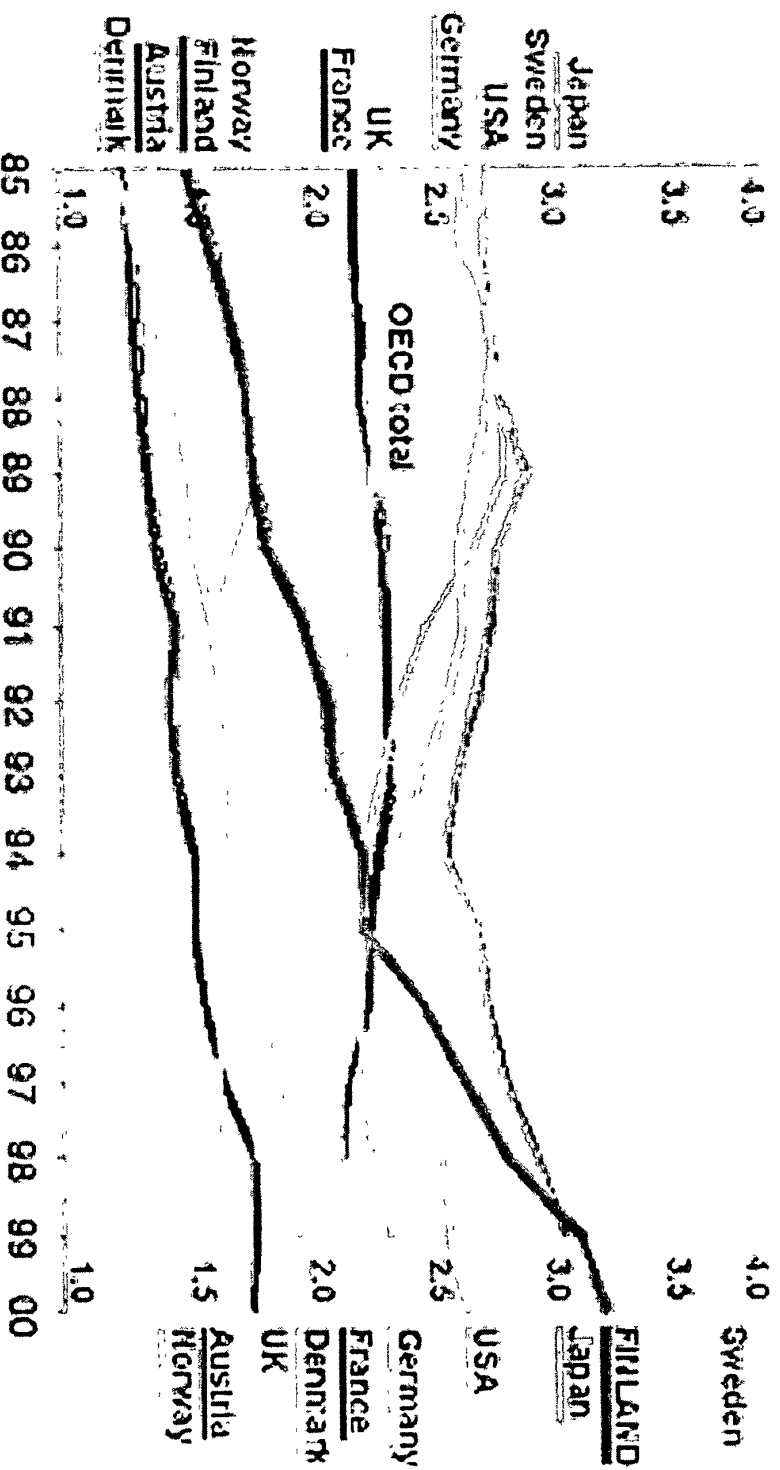
Source: OECD, Main Science and Technology Indicators 1999 and Statistics Finland.

High-tech exports of all exports in some OECD countries
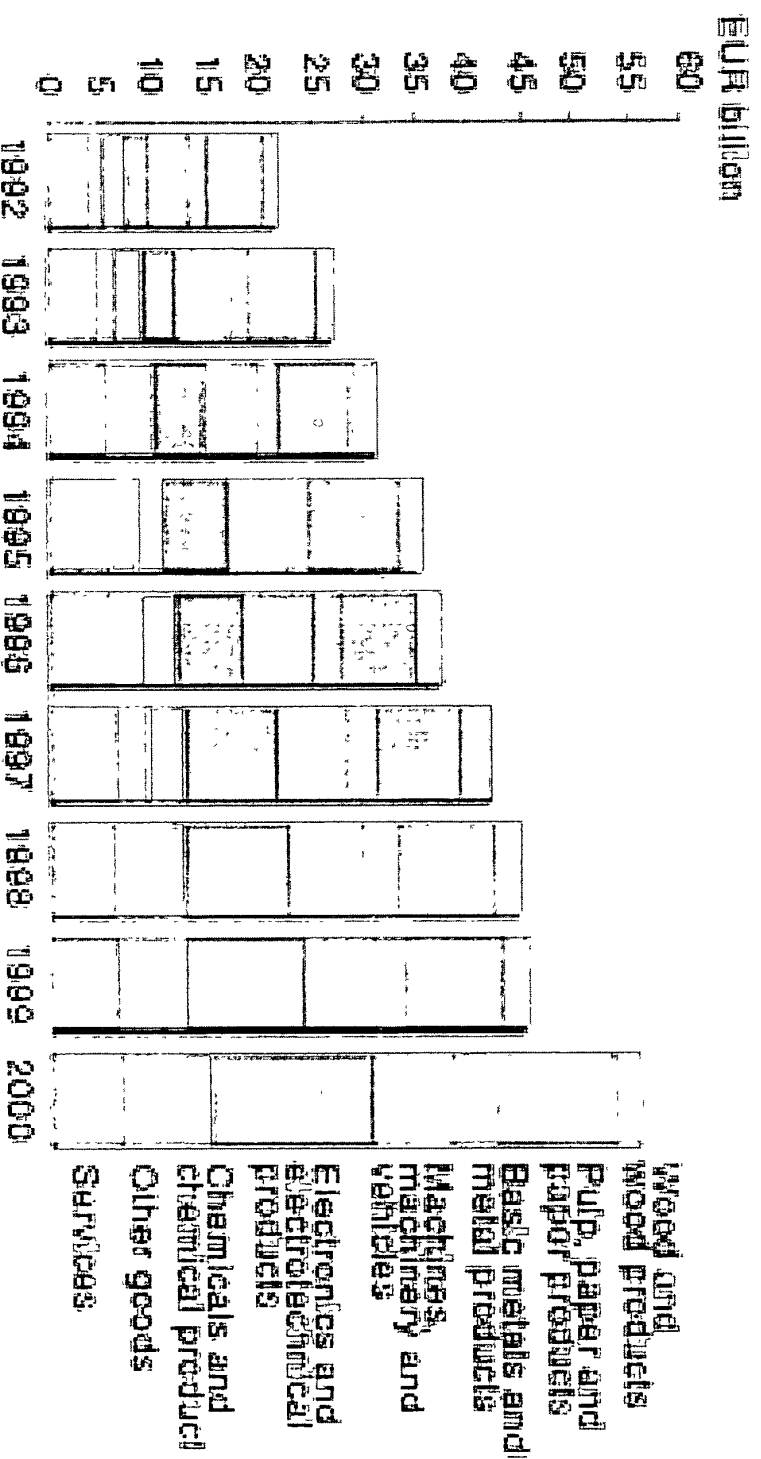

Source: Statistics Finland, according to the OECD product catalogue defined in 1995. Finnish high technology exports in 1999, were 21 % of total exports.

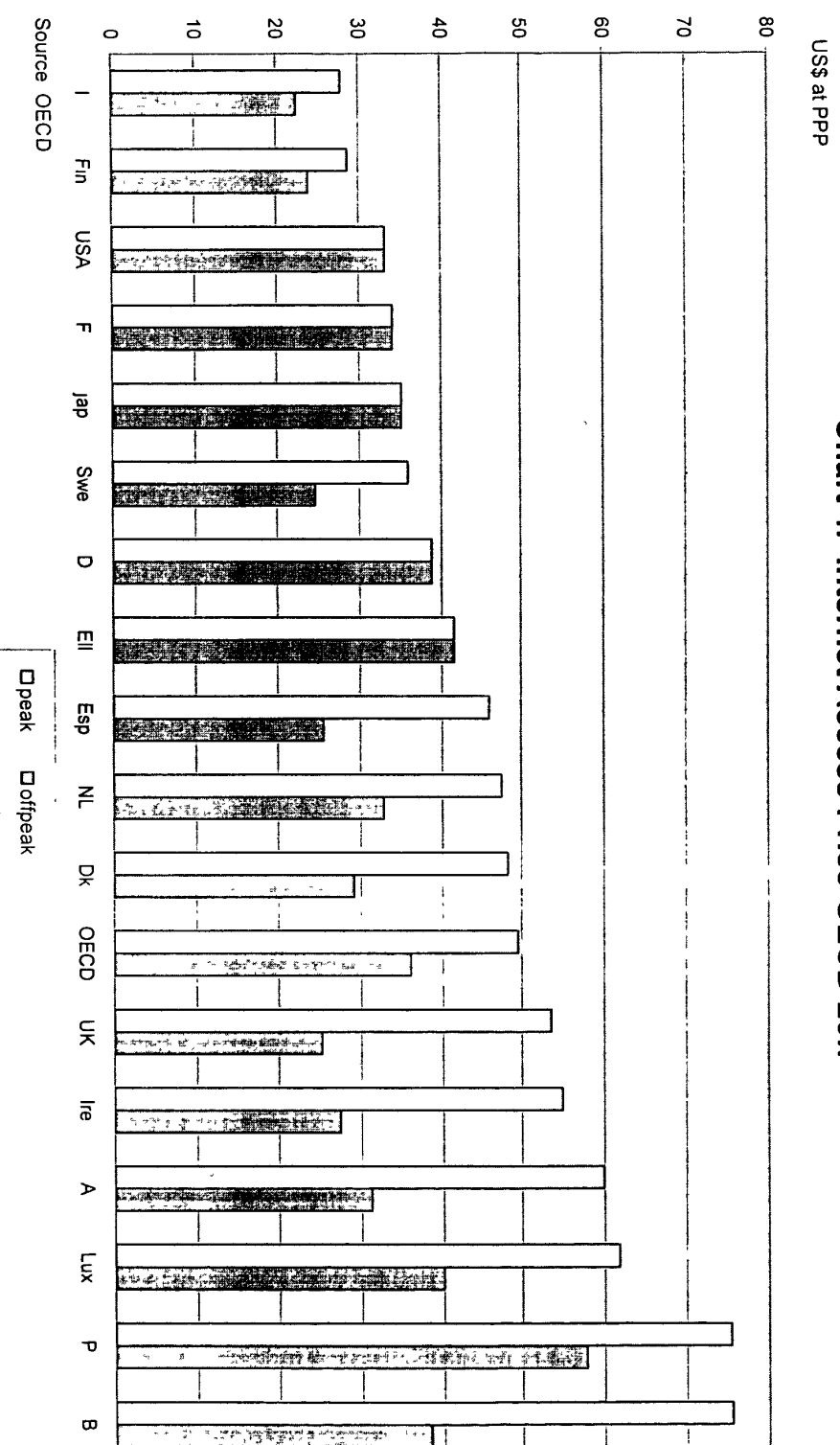# Business R&D input in Finland by sectors in 1993 - 2000

EUR billion

Other sectors

Other industries

Pulp and paper

Chemical industry

Metals and engineering industry

Other electro-technical industries

Electronics, tele-communication and instruments

Finnish exports by industry in 1992 - 99

EUR billion

60
55
50
45
40
35
30
25
20
15
10
5
0

1992 1993 1994 1995 1996 1997 1998 1999 2000

Wood and
wood products

Pulp, paper and
paper products

Basic metals and
metal products

Machines,
machinery and
vehicles

Electronics and
electrotechnical
products

Chemicals and
chemical product

Other goods

Services

Olavi Köngäs 22.8.2001

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Telecommunications policy

- Never a state monopoly, but local telephone companies and Post and Telegraph

- During 80`s
  - local companies got permission for country-wide datacomm.
  - equipment sales was made free

- 90`s
  - competition in mobile (Radiolinja was worlds 1st GSM)
  - full competition in long-distance and local telephony
  - No persmissions needed for other than radio-based telecom
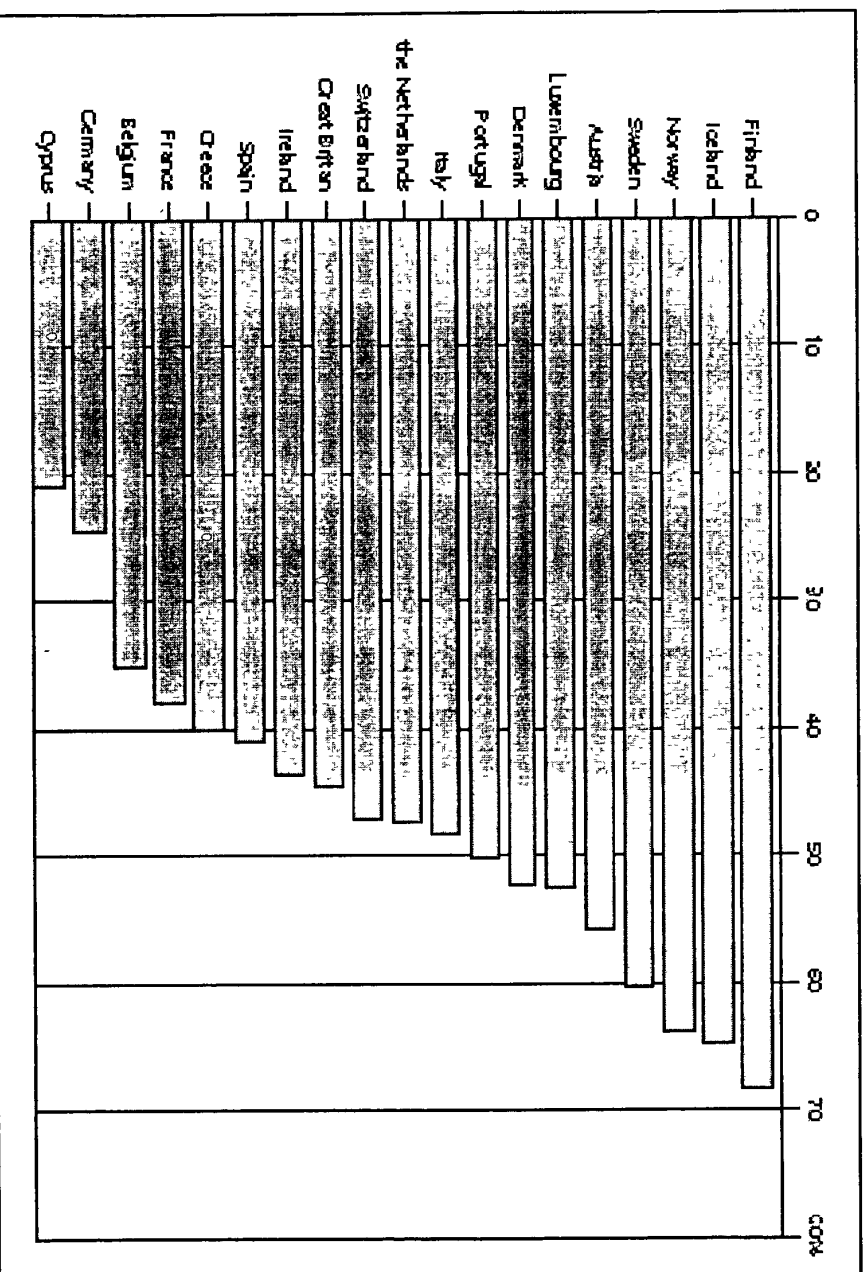 - First UMTS licencees

Internet access costs in OECD

US$ at PPP

Chart 4. Internet Access Price-OECD 20h

Legend: ☐ peak   ☐ offpeak

Categories: I, Fin, USA, F, Jap, Swe, D, Ell, Esp, NL, Dk, OECD, UK, Ire, A, Lux, P, B

Source OECD

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Mobile phones

FIGURE 7. The penetration of mobile telephones in certain European countries on 1.3.2000, proportion of the whole population

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Telecomms policy issues

- **Broadband**
  - several fibre trunk networks
  - unbundling of local loop 1997,
  - "ADSL law "into force April 2001
  - ADSL, W-LAN and fibre (business and new apartment houses competing for local loop)

- **3G Mobile**
 - 4 UMTS (W-CDMA) licencees in April 1999
  - no frquency auctions

Education

- Resources to technology and natural science

- FUNET -network to connect universities and research in early 80's (now 2 GB trunk)

- Computers and Internet connections to all schools in 95 - 97

- "Computer Drivers Licence" certification for adults -> European Licence

- Big question: How to really change education with IT?

Population with educational qualification, 1998 1)

Age	%
15–19	15,8
20–24	83,4
25–29	82,3
30–34	83,1
35–39	82,5
40–44	76,4
45–49	68,1
50–54	59,3
55–59	50,1
60–64	38,2
65–	23,5
Total	**57,7**

1) Population by age group with a qualification from upper secondary schools, vocational schools and colleges, polytechnics or universities.

New information technology and media students by level of education in 1985-97
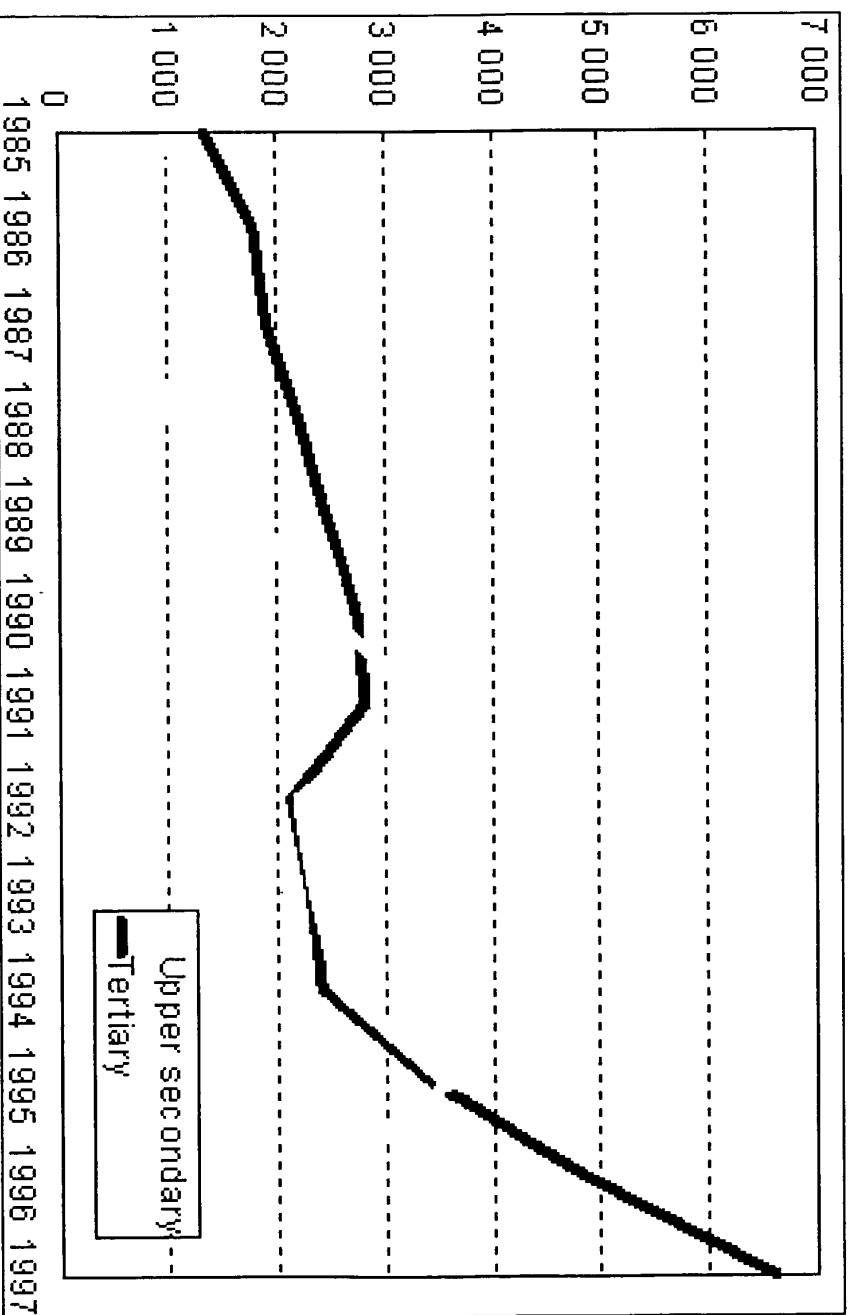
Education, training and research in the Information society, A National strategy for 2000 - 2004

- 300 m FIM/year earmarked for the programme

- ICT skills of teachers (ope.fi)

- learning materials and methods

- higher education in ICT and content industries

- virtual libraries

- virtual learning environments

Democracy and transparency of administration

- Traditional nordic transparency principles
- A new Act on Openness of Government Activities (http://www.om.fi/3470.htm)
  - "Official records shall be in the public domain"
  - Requires authorities to publish their information - shift from "supplied when asked" to active information policy
  - Defines principles for "good practice in information management"
  - Challenges to IM - classification of data, metadata, authentication...

Examples of information services

- ## Citizen's Guide (http://www.opas.vn.fi)

  - One site that organises public information by phase of life - Children, Young People, Working Age ....

  - Links over 60 government agencies and over 200 municipalities

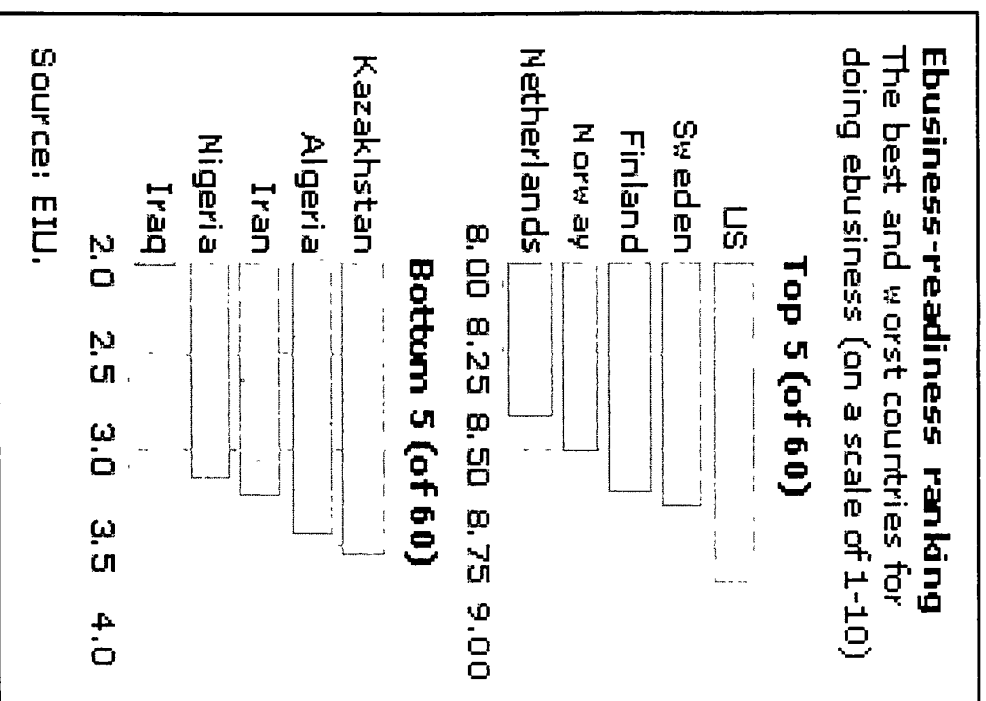 - Access to electronic forms and public sector directory

- ## Parliament

  - replicates 99% of its databases to an open WWW -service (http://www.eduskunta.fi)

  - possibility to monitor what a MP has said in discussions, proposed and how she/he has voted

  - access to law texts in parliament process

E Commerce

- "Business as usual"
  - normal rules and regulations apply to e Commerce
  - no tax-incentives
- Government tries to create a favorable business-climate
  - deregulation
  - taxation (company tax reform 1992)
  - administrative reporting

e Commerce readiness

Ebusiness-readiness ranking
The best and worst countries for
doing ebusiness (on a scale of 1-10)

Top 5 (of 60)

US
Sweden
Finland
Norway
Netherlands

8.00 8.25 8.50 8.75 9.00

Bottom 5 (of 60)

Kazakhstan
Algeria
Iran
Nigeria
Iraq

2.0 2.5 3.0 3.5 4.0

Source: EIU.

Compatitiveness - Economic Creativity Index

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Country	Economic Creativity	Technology Index	Startup Index
United States	2.02	2.02	2 02
Finland	1.73	2.02	1.43
Singapore	1.63	1.95	1.31
Luxembourg	1.44	1.37	1.51
Sweden	1.36	1.52	1.21
Israel	1.35	1.55	1.15
Ireland	1.31	1.74	0.87
Netherlands	1.26	1.20	1 32
United Kingdom	1.22	1.08	1.36
Switzerland	1.11	1.62	0 60
Hong Kong SAR	1.10	0.58	1 63
Denmark	1.07	1.25	0 88
Germany	1.04	1.66	0 41
Canada	0.99	1 21	0.77
Australia	0.97	0 91	1 04
Taiwan	0.97	0 .90	1 04
Norway	0.80	0.61	0 98
Japan	0.69	1.59	-0.21
Hungary	0.66	1.06	0.27

Lähde: World Economic Forum 6.9.2000

eCommerce issues

- ## Electronic signatures
  - Signatures are not important in Finnish juridicial system
    - freedom of contract and evidence
  - EU directive on electronic signatures will be implemented; regulates mainly the operations of certificate providers

- ## Consumer protection
  - normal rules for distance selling applied
  - EU directive on electronic commerce is being implemented

eCommerce

- **Taxation**
  - no special tax-rules
  - EU is preparing a directive on VAT in electronic commerce

- **Government programmes to support eCommerce**
  - NetMate 1998 - 2000 to raise awareness among SMEs
  - Network business project in government project portfolio
  - Content production project in government project portfolio

- **Mobile EC**
  - Bank transactions with mobile phones
  - Operators have billing systems
  - Sonera SmartTrust builds mEC platforms

Goals of the eEurope Action Plan

- The European Council held in Lisbon on 23/24 March 2000 set the objective *"for Europe to become the most competitive and dynamic economy in the world. It recognised an urgent need for Europe to quickly exploit the opportunities of the new economy and in particular the Internet.*

- *3 objectives and 10 action lines*
  - A cheaper, faster, secure Internet
  - Investing in people and skills
  - Stimulate the use of the Internet

Welcome

This page will guide you to the most important Swedish e-Government websites.

Description	Websites
SverigeDirekt is the official Internet portal for information about Sweden's public sector	**http://www.sverigedirekt.com/**
The **Swedish Government's** web pages	**http://www.regeringen.se/**
Statskontoret has as one task to modernize public administration with the use of IT	**http://www.statskontoret.se/**
IT-kommissionen analyses the role of information and communication technology as a useful tool for the development of the Swedish society	**http://www.itkommissionen.se/**
Statens e-forum is a co-operating body for government authorities that are engaged in the development of electronic services and applications	**http://www.statens-e-forum.nu/**

Documents (in PDF)
Speech by Minister Britta Lejon at the conference e-Government in the Service of European Citizens and Enterprises - what is required at the European level, 2001
Speech by State Secretary Hans-Eric Holmqvist: e-Government in Sweden - visions and actions.
Public administration in the service of democracy, Departement of Justice 2000
Country Report from Sweden for the GOL Portal Project Government Online International Network, 2001
The 24/7 agency - Criteria for 24/7 Agencies in the Networked Public Administration, Statskontoret 2000

附件三

e-Government in Sweden - visions and actions

I am honoured to have been invited here today to give you some idea of the swedish Government´s vision on e-Government and the actions we are taking in the public administration to realize it.

Before I do that I would like to make some general reflections.

Historically public management reforms have been long-term processes with incremental changes. Even if certain trends have dominated from time to time the development in public administration has been characterized by continuity rather than radical changes.

- responsibility for public goods is increasingly shared by multiple actors including the private sector and civil society.

For the public sector, governance focuses on the arrangements, responsibilities and checks and balances around the exercise of state authority. Public governance provides the structure through which resourse allocation and policy decisions are taken and carried out in consultation with other parts of society, and through which decision-makers are held responsible.

Leaving definitions aside, the essence in this perspective is a greater emphasis on institutional frameworks in a wide sense and on the relationships between the public administration and the society at large. This stresses the importance of transparency and accountability and takes into account the role of the public administration in the strengthening a democratic society.

What these two concepts, e-Government and Governance, have in common is a more citizens-oriented approach than earlier ones. These were mainly driven by efficiency **within** the administration.

important tool in the further development of the public administration. But e-Government initiatives must be integrated with other measures to be fully effective.

In Sweden the concept of 24-hour agencies has been designed to vizualise what we want to realise by e-Government.

What the swedish government wants to achieve is a public administration based on the conditions and needs of citizens and businesses in different situations. A citizens-oriented public administration to a large extent based on information technology. Not because the use of IT is a goal in itself, but because it is such a powerful tool to realize such an administration in the service of the citizens.

The goal is accessibility around the clock and that you can get most of your questions answered whenever you want. A possibility to make your application when it suits you and not be limited to traditional office-hours. You should not have to take a day off from work to get the service you have a right to and to fulfil your obligations to the authorities.

Of course this does **not** mean any physical giant 24-hour agency. But it means that we use the technology for co-operation, seamless communication and common responsibility. Public services should be available through one contact point, in a real or virtual "one-stop shop".

We are certainly **not** demanding public employees to work day and night. Instead we must use the technology in a "smart" way to develop and deliver our services.

It does **not** mean that every agency must have their own local presence everywhere for citizens not able or willing to use Internet. What is needed is that the agencies together develop new forms of co-operation to secure the local presence needed.

The development of 24-hour agencies does not allow us to abandon traditional contact forms and service channels. We must secure that even those, who **cannot** or **will not** have a personal computer at home, have access to Internet in public places when they need. Conventional channels of communication must still be possible to use. In fact services on-line can set resources free to invest in personal-intensive areas.

offers. Not only to copy the best in the private sector, but to do even better. A fundamental responsibility for the public administration is to be open and obliging, to give **all** citizens equal and fair treatment and real opportunities for public control and participation. This is the greatest challenge for us who are responsible for the exciting development of our e-Government!

Only five years ago the concept of 24-hour agencies would have been incomprehensible. No one could have imagined that something like that was possible. But only five years from now I am sure that the concept will no longer be in use. It will then be so self-evident that it is impossible to think of an authority which is **not** accessible around the clock.

Now, how far have we reached in realizing these goals and what are our next steps?

Internationally Sweden – as Finland – belongs to the leading countries in terms of penetration of pc:s and Internet connections. 75% of the population between 18 and 64 had a computer at home last year. In 1995 the corresponding number was 30%. The strong growth could be explained by the

Government. But we have still only vague ideas of what is most urgent for the citizens.

Apparently TietoEnator also has considered it important to explore what people really wants and what their attitudes are to Internet-based services. I have noticed that TietoEnator has ordered Sifo Research & Consulting to conduct a survey on the attitudes towards Internet services among the Swedish population. Not surprisingly people between 15 and 29 are most positive to Internet service. But also the group between 30-49 are very positive to the possibilities of Internet. It is also interesting to notice that the differences between men and women are quite small. Even if somewhat more men are using Internet today, women are at least as interested the men. This is important since women need to contact public services more often then men, according to the survey. It seems as if the women are taking a greater responsibility for handling the family's relations with authorities concerning child and health care, education and other basic public services. Apparently, technology has not changed that gender-gap yet!

The fourth and last step is **Integration,** which means websites and network functions for proactive and joined-up or **integrated personal** services involving several agencies and institutions.

The swedish agencies are well advanced in step 1. There are also many good examples of step 2. Still, however, step 3 "transactions" and step 4 "integration" are only in the very beginning, although we have some very interesting pilot projects going on.

Of course, the quality of the web sites varies. No doubt you will find information about the ageny business. But they are not always clearly focusing on the needs of their customers and are not easy enough to use.

More advanced e-services are already offered or planned by a limited number of leading agencies, such as the National Labour Board, the National Tax Board and the Swedish Customs. Advanced plans are also under way in agencies such as the Patent and Registration Office and the Social Insurance Board.

There is a need to develop methods for analyzing service needs, taking the needs of different individuals and groups into account and also focusing on the problems individuals are facing when certain life events occur.

We must analyze how to offer more individual and flexible services; how to minimize the number of contact points by new forms of co-operation between state agencies and also including the regional and local authorities.

It is also necessary to define the basic demands for the long term development of a common infrastructure for a secure and efficient electronic communication with the public administration which also respects the individual's rights to integrity and privacy.

A system for monitoring the development of 24-hour agencies will be developed and used both as an instrument for self-evaluation and as a part of the reports on results to the government and parliament.

electronic signatures in an initial phase. A procurement process is under way with the aim to reach framework agreements with suppliers. We want to avoid closed systems for the public administration. The strategy is to find alliances and build partnerships with actors already on the market. In the long run the objective must be to find a common solution for all sectors in the society. International standards must also be developed to enable the development of electronic communication across the borders within the EU as well as world-wide.

To enable the use of electronic document it is also necessary to modernise the regulatory framework. All laws prescribing written procedures and signatures must be analysed and possible adaptions considered. Such a work has started. The Government is now preparing a more systematic approach to step up the development. However, the complexity in this task must not be under-estimated

I would also like to make some comments on the financial aspects of e-Government. We have not appropriated any extra funds to the agencies for the development of 24-hour agencies. This should be carried out within the resourses already available.

operation within a substantially enlarged Union can be realized if

we do not have efficient e-Government systems at the European

level.

But e-Government is not only a necessity for the efficiency of

the EU institutions and member states. It is also one of the most

important tools in the shaping of a Union serving the citizens

and at the same time giving fair conditions for the enterprises. It

is not only the question of making public services more

accessible through electronic delivery, even if that is very

important. More fundamental, in my mind, is the possibilities for

greater openness and citizens involvement and participation in

the Union, which can be offered by our common efforts to

develop e-Government and e-Democracy at the European level.

The EU countries have set an ambitious agenda for bringing

Europe into the information age by the e-Europe 2002 action

plan. E-Government is only one of several action lines in this

programme. But the public administrations have an important

role for the over-all implementation of the information society in

Europe.

offer electronic access. Another type of electronic service wich is well advanced is on line access to administrative forms. The first stage is that these forms can be printed out and thus transformed into paper documents. The long-term objective is of course that these forms should be completed on line.

One of the most important measures the countries are considering is the creation of "citizen's guides to the public sector". A general tendency is the intention to structure them around what is now called "life events".

European governments have all become aware that the information technology may well create a "digital divide" not only on a global scale, between the countries of the North and South, but also within each national area between priviliged individuals and groups and those which are less so. In several countries, this awareness results in a very proactive policy to increase the accessibility of electronic public services for those who suffer from social exclusion, are geographically remote or hav a physical disability.

most basic electronic services, 12 for citizens and 8 for business.
I think this looks like a promising way to measure progress in a
comprehensive way and it will be interesting to follow the
development of these indicators.

However, e-Government targets and indicators within the e-
Europe iniative are to the greatest extent focusing on the
developments in the national administrations. I think it is
important for the future development to give more attention to
the European dimension of e-Government. Of course efficient e-
Government in the national administrations is a pre-condition for
the well-functioning of e-Government at the European level. But
we should also focus on the needs for common e-services
serving all citizens and enterprises within the Union.

To promote such an approach, the swedish presidency together
with the commission in June this year arranged a conference on
the theme: e-Government in the service of European citizens and
enterprises – what is required at the European level. This was the
first time that Europes´senior civil servants, from the EU
member states, EEA countries, candidate countries and EU
intitutions, have come together to discuss what is required to

- Public administration cannot do everything; there is a need to involve the private sector, possibly through public/private partnerships etc

- It is not just an issue of providing technical solutions; for e-Government to work the bulk of changes are required at the organisational level.

Through the IDA (Interchange of Data between Administrations) programme the member states and the Commission should identify and promote best practices to stimulate convergence between European countries in understanding needs and developing services across borders. To facilitate their accession the conference also underlined the importance of sharing experiences and information with the EU candidate countries.

To conclude I would like to summarize what I consider to be the most important issues to deal with in the further development of e-Government at the national as well as European level:

- e-Government in the service of citizens and democracy

strengthen the possibilities for citizens and enterprises to take part of the benefits of the European Union.

- Trust and confidence in e-Government

High security is a crucial condition for implementing e-Government. Citizens and enterprises must have trust and confidence in the solutions offered by public authorities. Security guidelines and solutions set by governments would also inspire a higher security awareness and security level in the society at large.

- Common infrastructure for the information exchange between administrations within the EU

It is necessary to step up the efforts to establish a common infrastructure for e-Government within the EU. Open national infrastructures based on international standards are necessary to achieve this. Key technical issues are interoperability, generic services, common security framework, electronic signatures and identification.

Ministers for Public Administration and for Information Society have been invited by the Belgian presidency and the EU commission to a conference on e-Government: from Policy to Practice in the end of November. I hope this conference will give us the opportunity to discuss and agree upon what further steps should be taken to meet the great challenges ahead of us in order to realize our common visions of an efficient and citizens-oriented public administation at the European level as well as nationally.

Finally I would like to stress another reason why e-Government is so important in the years to come. In the next ten years one third of the employees in the public sector will leave as they reach the age of retirement. There is no chance to replace all of them. In most other EU countries the numbers are even greater. Human capital must be reserved for tasks that demand people, such as education, health care etc. The number of people in pure administrative tasks must be cut down. Therefore, the use of IT and e-Government is not an option, it is a pre-requisite!

Thank you!

四件传说

PREPARATORY QUESTIONNAIRE FOR THE MEETING OF THE
DIRECTORS-GENERAL OF THE PUBLIC SERVICE
(Strasbourg - November 2000):

The Use of Information and Communication Technologies in Public
Administrations

The Use of Information and Communication Technologies in the Swedish Administration

Details of the office dealing with ICTs at the ministry in charge of the public service in Sweden

Country: Sweden
Ministry: Ministry of Justice
Name of the office: Department of Public Management
Address: 103 13 Stockholm

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E-mail: registrator@justice.ministry.se

Initial explanatory note

The answers given in the following must be understod in the context of how
the Swedish public sector is organized and managed. Two importend
characteristics of the Swedish model are:

1. Swedish local and regional authorises (i.e. municipalities and county
counclis) enjoy a constitutionally guaranteed autonomy within laws adopted
by Parliament. The Government cannot itself direct or regulate the activities
of local and regional authority. This report therefore only refers to central
government, unless explicitly stated otherwise.

2. The independent management of Swedish executive agencies is also
regulated in the constitution. Although the Government can direct and
regulate agency activities, the reform trend during the last 25 years has been
from command-and-control strategies towards setting goals and following
up results. Service-development is therefore primarily the responsibly of
agency managers, but also a goal established by the Government.

security solutions for communication between agencies, and to enterprises and citizens,

- *implementation of electronic signatures* — the use of digital signature will be closely monitored at each separate ministry,
- *basic data bases* — this is a continuation and escalation of the work of creating clear regulation for society's information supply by e.g. taking into consideration the divergent conditions applying to central and local government.

- Government strategy on the use if ICTs in the public services

The Swedish Government considers that the Central Government administration, taking integrity and security aspects into account, should make use of the scope afforded by IT to (i) simplify and improve the agencies' contacts with the public and enterprises, (ii) increase public supervision and control of the agencies' activities, and (iii) enhance the effectiveness of collaboration between agencies, with the rest of the public sector, with EU institutions and with administrations in other countries.

It is the Government's objectiv that the technical infrastructure for the Central Government administration's communication with the public and enterprises should be based on the Internet. Within the framework of the Internet, the agencies should develop services that simplify contacts with and the interaction between citizens, enterprises and public administration.

On July 20, 2000, the Government published an action plan on how to achieve the goals of the 1997/98 Government Bill on "Central Government Administration in the Citizens' Service". In the action plan the use of information technology is seen as an important tool in the further development of the public administration. According to the plan the Government should be a forerunner and a model for the rest of the society in its use of the new technology.

Public services to the citizens and the enterprises should also be offered on the Internet. Government agencies must co-operate with one another, as well as with municipalities, county councils and private enterprises, to create rational service arrangements for all parties. Citizens and enterprises should find it easy to retrieve and submit information that is relevant in each individual situation regardless of how responsibility for the information is divided between agencies or between the different levels of government.

A shared, open and reliable IT infrastructure based on the Internet must form the basis for the electronic contacts between the public administration and the society. Extensive efforts are under way to develop various parts of this IT infrastructure. A system for delivering and receiving information (the

administration for secure administration of digital signatures. To facilitate the introduction of interactive and integrated electronic services, overviews of laws and regulations will be carried out by the ministries to eliminate obstacles to the use of digital signatures and electronic handling of documents.

A strategy is being drawn up to enhance efficiency and facilitate electronic access to basic public information. Several decisions have been taken by the Parliament and the Government on the role of the state in the information area. Priority has been given to the accessibility of information concerning legislation, business, property and population.

In summary, the Swedish strategy for e-government is based on our system with decentralised agencies working with a high degree of freedom in deciding the means to achieve the goals set by the Government. Therefore the Government does not prescribe in detail how the agencies should use information technology. Instead a "light touch method" is applied where the Government declares its vision and in different ways tries to facilitate and stimulate the development within the agencies as well as the co-operation between agencies. An important role for the Government is to create the necessary conditions in the form of a technical and legal infrastructure. Great emphasis is also laid on developing a system for annual follow-ups of the ICT development and other reform work in the agencies. A systematic follow-up of results achieved will give agencies opportunities to compare with each other and will also give a necessary feedback to the Government.

The Government E-Forum is an example of a recent initiative from Statskontoret (Swedish Agency for Administrative Development) and a group of leading agencies to strengthen co-operation in the development of electronic services within the public administration. E-Forum is a co-operative organisation for agency managers. It will identify needs and create the conditions for development activities and co-operation between agencies with the purpose to initiate development projects and propose initiatives from the Government.

2   Use of ICTs in citizen participation in public debates

Summary:

Sweden has a long tradition for democratic, public decision-making processes. Since the last general elections in 1998, Sweden has a Minister for Democratic Issues and Public Administration, whose task is to reinforce this tradition, and strengthen democratic development in Sweden.

documents and communicate information on any subject whatsoever".
Swedish citizens also have the right according to the Freedom of
Information Act to partake and avail themselves of all official documents. A
document is official if it is held by a public agency and if it has either been
submitted to the agency or has been given its final wording (been "drawn
up") there. The word "document" also includes tape recordings and
recordings for automatic data processing, i.e., is stored in an ICT system.
The so-called publicity principle ("offentlighetsprincipen"), i.e. the right of
access to all official documents, offers an important possibility for the
public to get insight into the activities of the agencies and ministries. The
principle means that the public has the right to read all the acts of the
agencies and ministries, provided they are not secret.

Civil servants have a unique position also in the sense that the Constitution
guarantees them the right to inform media on them activities of the agency –
the so called Freedom to impart information. Information covered by
professional secrecy or information that is classified as strictly secret is
exempted. It should be noticed that the agencies are not allowed to make
attempts at finding out who has informed the media.

The view of the relationship between the citizen and the state is further
clarified by the Administrative Procedure Act. From this law, it is evident
that the agencies are obliged to provide services to the public. By this
wording, the Government has stressed that the administration in a
parliamentary democracy is the servant of the people and not its master. In
this law, it is further stated that the agencies are obliged to communicate
with those individuals that will be influenced by the decisions made, and
these must also be offered an opportunity to state their case before a
decision is made.

Initiatives for a change of policy or new legislation can come from the
Government or an government agency, from professional and trade union
organisations or from other associations and organisations. The procedure is
such that the Government appoints a commission of inquiry, often with
participants from the political parties in opposition, the trade unions and
other non-governmental organisations. The scope of the inquiry is defined
by the Government in a terms of reference for the commission document.
The inquiry results in a written report (or several reports), which are
regularly made public. These reports often contains very detailed
deliberations on the theme at hand, including commentaries on each clause
of the proposed legislation. The commission report is sent for comments
("remiss") to a large number of agencies and non-governmental
organisations in a public consultation process, in which every citizen is also
entitled to participate. The comments that are received after such
consultation process are, together with the report from the commission, the
basis for a Bill to Parliament which is prepared in the ministries concerned.
The bill is then sent to the relevant standing committee, which in turn

several discussions on their web site, and they made all their publications available on the website. In total, more than 40 interim reports and over 30 different on-line forums for discussion were created during the inquiry. The final report is now also open for discussion at the website (http://www.demokratitorget.gov.se/). On average, some 600 visits per week were recorded, and more than a 1000 visitors per week during the final phase of the inquiry. In addition to the online consultation activities, many different offline activities were undertaken during the inquiry. The commission members travelled all over the country and held seminars and « townhall meetings », a number of conferences with national and international experts were arranged, all with no or very little participation fees allowing everyone to participate. Finally, the final report as handed over to the Minister of Democracy was sent to 500 randomly selected citizens, who were asked to give their views to the minister.

BollnäsDialogen (http://www.bollnas.se/) – the Bollnäs Dialogue - is an example from the municipal level. Bollnäs is a small community in Central-Sweden. The municipality is using the internet actively to create a more open and participatory environment, and is inviting all citizens to participate in on-going dialogues and deliberations about the life and development of the municipality. The local politicians are directly engaging in the debates, and regular theme debates are arranged. Although all areas of policy making are discussed, a special focus is put on urban and regional planning, where the internet is used in addition to traditional consultations.

continue. Among other things, it has become clear that Central Government agencies must use reliable means of transmitting documents and communications in an *open* IT infrastructure. This in turn necessitates that *joint* security regulations and standardised solutions must be established for the information exchange between agencies and to/from citizens and enterprises.

Agencies whose activities are oriented primarily towards enterprises and the public should offer electronic services for self-service to supplement their traditional services.

In essence, the general policy is to make more and more information and services available online. The Government has set the goal that Sweden should be to become the first nation to have an IT policy pursuing an Information Society for All.

There are, however, no specific quantitative targets for e.g. making public records available electronically or allowing citizens and industry to communicate with public authorities via e-mail. However, due to the large scale use of Internet (70 per cent of all the population aged 9-79 years have Internet access) and its cost effectiveness, more and more information and services become available online.

It is important to remember that the Freedom of Information Act is a framework securing that all official documents and public records are accessible, provided they are not secret. As a correlate to the rapid ICT development, all agencies are gradually making their records available in user friendly IT formats. A recent example is that Statistics Sweden now makes their basic data available online, free of charge. On a more general level, agencies are involved in the work to make e.g. post-lists, archives and document handling systems available.

The Swedish model of Public Administration is based on an approach where the Government set the service goals which the agencies implement in their respective service domain. One example of the outcome of this approach is that inhabitants in Sweden since several years back can register "change of address" online and free of charge.

One foundation for the penetration of online services is of course the availability penetration of technical means for such services. In this respect, the Swedish public sector has paved the way ahead. There are, roughly speaking, 285 central government agencies, and an equal number of local governments (municipalities). They all, roughly speaking, have an official web site (Internet URL) as well as an official mail box (Internet).

Swedish public administration will undergo an almost revolutionary service re-engineering when Internet based and networked 24/7 electronic self-service becomes the number one service alternative. The forerunner in this respect is the set of job-banks at the National Labour Market Board.

The restricting of administrative services will also involve the staffing, since it causes a shift in required qualifications and therathes to make a relative large number of government employers without higher education redundant.

The discussion on citizen oriented services in the information society is an everyday phenomenon, and lately with reference to the drastic re-organisation and closing down of Post Offices announced by the state owned Swedish Post. There is no doubt about the rapid implementation of e-government services in the form of Internet based self-service. Eventually this will result in a reduced customer base for traditional person-to-person services, which in turn will result in reduced capability for field presence of central government agencies. The positive side of this development is that central government agencies, in order to carry out their tasks, will have to work more closely with local government

- Do you have an internet "portal" site to help users of administrations in their search for information and services? If so, please describe its main functions and provide its internet address

Some twelve Government commissioned portals and networks are in operation within different sectors of the public administration, for example:

- The Swedish Schoolnet runs several services for students and teachers in secondary schools, allowing the whole "school sector" to be a searchable network
- The Swedish EnviroNet is a clearing-house for data and information on the environment and environmental work at all levels of Government, enterprises, and NGOs.
- CultureNet Sweden has a portal providing thousands of links to Swedish culture. Together with the Royal Swedish Academy of Engineering Sciences, CultureNet Sweden also work to encourage and inspire people already culturally active to use Internet.
- A new portal site for Swedish legal information has recently opened. The site contains links to the various providers that issues different types of legal documents in the "legal chain", such as directives for committees, reports of state inquires, government propositions and bills, parliament legislation, and court discussions.
- A new Business Portal is to be opened under the leadership of the National Board for Industrial and Technical Development. It will integrate several service channels in operation at various state agencies.

- On-line payments (in connection with e.g. ordering of material and services).
- Matters pertaining to driver licence, such as the loss of, renewal of, and validation checks.
- Access to owners' personal files in the vehicle registration data-base, and de-registration during a period of non-usage of the vehicle.
- Application for exemption from transportat and vehicle regulations.
- Booking a time for driver tests.
- Mailbox.
- In order to broaden the access to the value-added functions of Internet, some of the state agencies with heavy Internet presence are co-operating so as to make their respective "Citizens Internet Terminals", located at their field offices, transparent to each other and to Internet.

At the municipal level there are a great many such service points; not least at all Swedish public libraries. Internet access through public libraries is available at about 270 out of 279 municipal head libraries, and at some 75% of the 1200 local library branches.

Broadened Internet access is a main theme in the 1999/2000 Government Bill entitled "An Information Society for All". The political objective of the bill is to establish a schema on the roll-out of an Internet broadband all over Sweden. This will entail a program in support of municipalities where the market forces are not sufficient in terms of speed of roll-out and penetration. It is estimated that some 30 per cent of the population will be covered by regional initiatives in this process.

* According to the law in force in your country, are electronic signatures valid, and on what conditions? Are electronic signatures used for communication with the administration and if so, how?

In accordance with the 1999/2000 Government Bill regarding a Law on Qualified Electronic Signatures, electronic signatures as specified in Directive 1999/93/EC will be valid in Sweden as from January 1, 2001. Swedish public authorities have for many years used smart cards as vehicles for electronic identification, but the usage of electronic signatures in the true sense are not yet implemented.

Government in Transition. The report for year 1999 is available in English at *http://www.statskontoret.se/pdf/199915A.pdf.*

4 Improvement of the internal functioning of the administration

Summery:

- Main plans for modification of the organisation of work or organisation of services

ICT has been an enabler for a number of modernisation programmes from the 1960-ies. They have led to decentralisation of tasks and services from the central level to regional, local and municipal. ICT effects can be seen in the administrative structure and back office organisation, and, lately, in service delivery. Some central agencies have - rather than a planning and controlling role - got a monitoring and evaluative role, that requires more comprehensive and detailed follow up systems (example Social Care). In this process, integration of production and delivery of services is facilitated. Case handling processes have been streamlined, stove-pipe systems reorganised with a client centred focus (Tax administration, National Student Board), and decision processes condensed, sometimes even to "decisions on the spot" (Police Passport service). Advanced systems have in some cases turned an agency with regional offices into a "virtual national call centre" (National Student Board).

Call centres and touch phone systems mean expansion of information services organisation and give back offices mote time for qualified tasks, but little other effects on organisation structure.

In-service training on ICTs for civil servants

Responsibility for ICT training is with each agency and even local management. ICT share of the total in-service training budget can range from about one-third up to half of the budget in peak years. A study of 24 central agencies shows that 3 % of the ICT budget is for training. The "Computer Driving Licence" is the most popular basic training package.

Social dialogue and ICTs

In general, the Swedish labour market is characterised by a decentralised and participatory work organisation. Swedish Co-Determination was formalised in a Law 1977, followed up by collective agreements between

Some important combined results of the first four programmes listed above are:

- Greater autonomy of the day-to-day work and planning for the agencies, as well as financial management and cost control
- Allocation of funds to the agencies based on expected results and commitments
- Transfer of service delivery tasks from central agencies to local or municipal bodies, decentralisation also on the local level and outsourcing to external entrepreneurs
- Central agencies in sectors run by local or regional bodies (basic and secondary education, housing, health and social welfare) get a monitoring, evaluation and supervision role
- Improved reporting and follow up systems and statistics between agencies and ministries and cross sector policy area reporting
- Increased use and refinement of customer service surveys and quality measures

Continuos development of ICT and information resources

The growing and increasingly sophisticated use of ICT has been a necessary tool in this broad modernisation process. At the start of the modernising process, a broad platform of main frame systems covered most of the large service functions, backed up by large databases and registers. These often stove-pipe type systems produced mechanisation gains, but also retained significant groups of clerical employees to feed in information and perform other manual support functions.

The level of technical integration between central government agencies and external partners has gradually increased, first as internal networks with links to other organisations for large volume data exchange, later gradually opened up to Internet gateways. This has been accompanied with activities to align and standardise information content (identifiers, terminology, message structure) to improve inter institutional collaboration. New information resources, as databases, registers or other repositories are built up, many of which are accessible for other public institutions as part of case handling or other routines.

A number of the databases linked to the large systems were, and are, also servicing all sectors and sections of society with basic information on persons and addresses, companies, real estate etc. Exchange and joint use of information is facilitated by Sweden's Freedom of Information Act.

Clerical staff and unqualified work decrease

As the technical platform was gradually extended, with personal work stations and network access to virtually all white-collar employees, and also

Fully digitised case handling. The National Student Board, which is providing study grants and loans to university and college students, has established a fully digitised case handling process. The system covers all NSB offices. Applications for grants or loans are scanned, interpreted, fed into a database and checked against decision rules according to the legal framework. If all formal conditions are met, the positive result is registered automatically, and an order to pay out the relevant amount is sent to the bank indicated by the student. One third of all decisions are taken automatically, at peak times almost 60%. The system has accommodated a dramatic increase in volume, but has also often suffered from overload. A number of digital response systems have been introduced via touch phone systems and web, available 24hx7 to take the bulk of questions.

In this process the office organisation has been transformed, from local offices, covering a geographical area and certain universities and schools, to a virtual national office for production and student information. The database with applications is accessible to all officers. At the offices, decision-makers can concentrate on those cases that have some complication in it. In addition they can be available for answering questions. A "smart" telephone system has been installed. If all officers at the local office are busy, the system can reroute a call from a student to an office elsewhere with officers available. The whole organisation is in that respect moving towards being a "virtual nation-wide call centre".

Streamlining case handling, rearranging stove pipe systems to client focused service. Existing large, high volume case handling main frame systems, organised as stove pipe work flows, have at times turned from being assets to be liabilities, cementing traditional, specialised work organisations at a time when client centred services are asked for. This type of situation is tackled by the Tax administration in several ways. First, the individual workflow are streamlined and joined together. Second, the IT platforms, and the information resources, are being rearranged to support the front end generalists, who are supposed to address almost any question on different taxes from individuals or SMEs. The first part involves simplifications of the legal framework for the administration, automated processes for collection, compilation of data and decision making as well as co-ordinating different tax processes into a single tax accounts for each individual or enterprise. The second part starts with an analysis of all taxation processes from a customer point of view, identification of common modules for case handling, standardisation of terminology and information structures and reengineering of stove pipe systems and databases into an efficient, integrated work platform supporting the front end officers. The latter part of the process is still under way, but is already having an impact on the work organisation on the regional and local level. Units specialised tax by tax have been absorbed in a more generalist organisation subdivided in services for individual and for companies. As ICT support for the day-to-day work has improved, a number of unqualified jobs have vanished.

office package systems and handling the computer. Virtually all training
courses are held by external training firms. A basic computer-training
package leads up to the "Computer·Driving Licence".

There are very few overall statistics on the volume and distribution of ICT
training. A recent pilot study of ICT costs of 24 central agencies indicate
that the training amounts to about 2 % of the total formal ICT budgets.

Two examples from major ICT-using agencies can add further light to the
question. The Tax Administration spends 3.5 days per annum and employee
on ICT training, out of a total training budget of 11 days. The Social
Security Board spent nearly half of its training budget 1999 on ICT.
However, in both cases figures may vary from year to year, if, for example,
many new application systems are introduced or not.

- Social dialogue and ICTs:
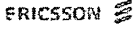
- **Is the general policy on the use of ICTs in the public
  administration discussed with the trade unions?**

Management and administrative reforms as those listed above are political
decisions that are over and above the labour market negotiating system. In
many instances such reforms, and the embedded ICT consequences or
requirements, are prepared before Government and Parliament decisions in
Government commissions or similar forms, where trade unions have
possibilities, like many other organisations, to comment on the proposals.
ICT Bills on the societal level, covering also policy issues for the public
administration, are presented to Parliament without negotiating, and usually
with informal briefings of the trade unions.

The Co-determination Law was introduced 1977 to lay a foundation for the
smooth implementation of new technology, modernisation and a more
participatory work organisation. It is facultative, which means that its rules
could be replaced by collective agreements. Such agreements are in place in
most labour market sectors, including the public administration The
Development for Co-operation agreement from 1997 on the public sector is
covering the use of ICT and other aspects of reorganisation and
management reforms. The Law and agreements generally mirror a broad
consensus on the active use of new technology. But the agreement specifies
also a number of conditions (including training, work environment and
ergonomics, personnel participation in development) and lay out routines
for employer information and for when consultations or bargaining are
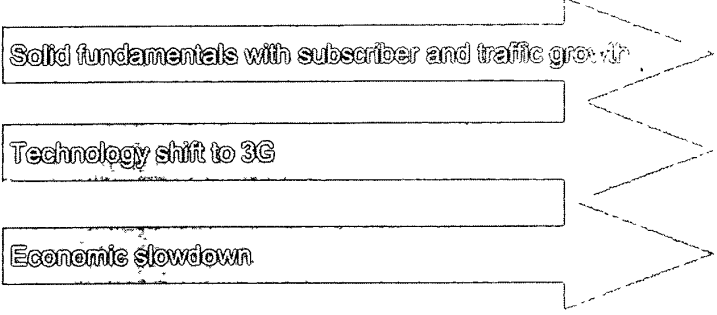compulsory. In general, however, the final decisions rest with the employer.

附件 2

Corporate Marketing & Business
Development

ERICSSON

Parallel trends

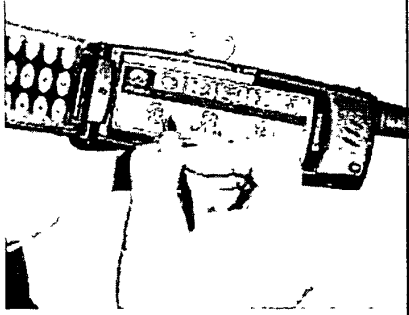Solid fundamentals with subscriber and traffic growth

Technology shift to 3G

Economic slowdown

LME/DMP October 2001   3   Corporate Marketing & Business Development

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ERICSSON

The mobile evolution is an everyday thing - creating a life style revolution

> 1 100 000 new mobile
telephones per day

~ 600 000 new mobile
subscribers per day
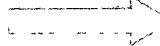
~ 120 000 new Mobile Internet
subscribers per day

LME/DMP October 2001   4   Corporate Marketing & Business Development

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Corporate Marketing & Business
Development

ERICSSON ⊆

Restructuring of the industry

- o The larger telcos will dominate growth
- o Restructuring for profitability
- o Separation of Network building and Service Provisioning
- o Partnering
- o Technology pragmatic
- o End-to end solutions fundamental

⟶ Continued global consolidation

LME/DMP October 2001   5   Corporate Marketing & Business Development

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ERICSSON ⊆

Mobile Operators – End Q2 2001

Exists	500 + Mobile Operators
Concentration	20 largest operators ~64% of subscriptions
	10 largest operators ~49% "

Operators	Subscriptions (Million)
China Mobile	86 0
Vodafone	73 9
Deutsche Telekom	44 5
NTT DoCoMo	37 3
Orange	37 2
China Unicom	31 0
Verizon Wireless	28 3
TIM	27 7
Cingular	21 9
Telefonica	21 2

LME/DMP October 2001   6   Corporate Marketing & Business Development
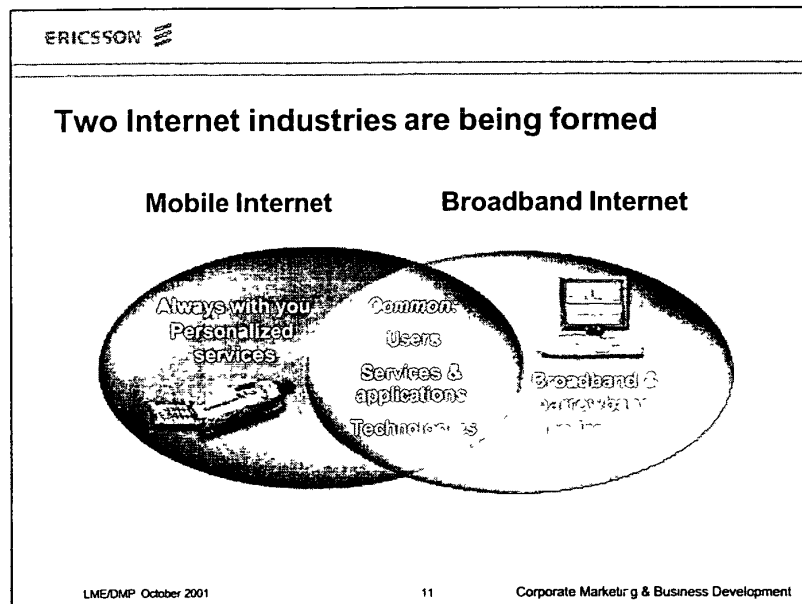

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Cellular Subscriptions, Penetration per region – End Q2 2001

North America 41%   Western Europe* 69%   Japan (excl PHS) 50%

Latin America 15%   CEMA 6%   APAC 7%

*Western Europe includes the EU countries + Norway and Switzerland

LME/DMP October 2001   7   Corporate Marketing & Business Development
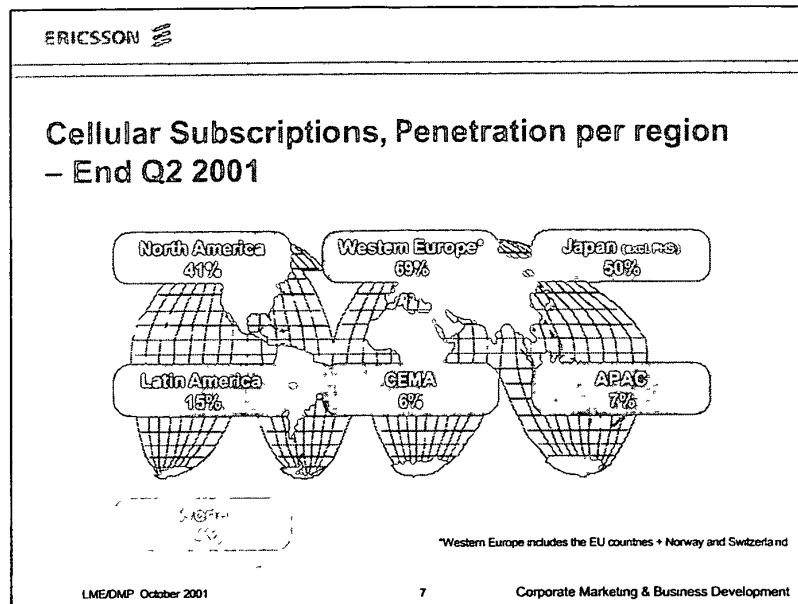
ERICSSON

Telecom in a changing world

- The world is going mobile
- A new network generation
- Always-on services
- A new business environment
- The user will be king
- The mobile industry is taking the lead

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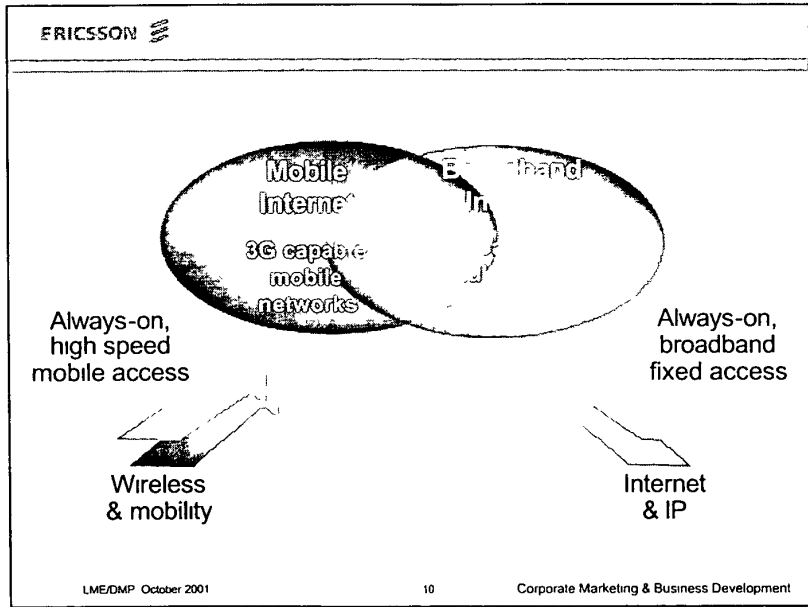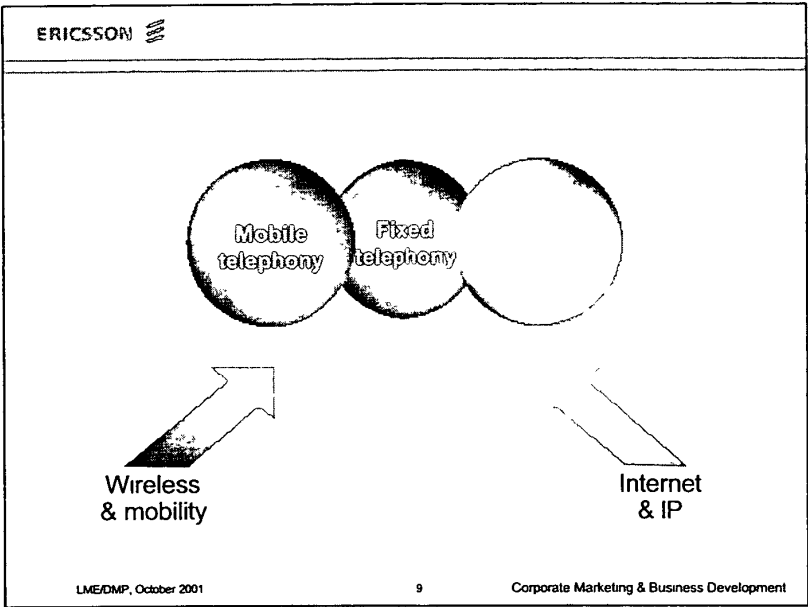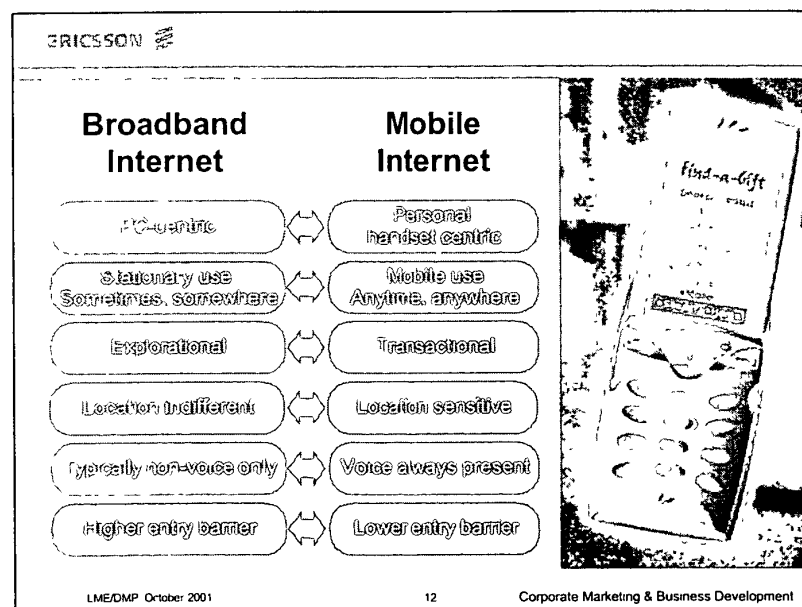
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Mobile Internet - two modes of usage

Laptop mode

The mobile dimension
of the fixed Internet

Phone & communicator mode

New types of services adapted
- to the characteristics of the
  mobile device
- to the user situation

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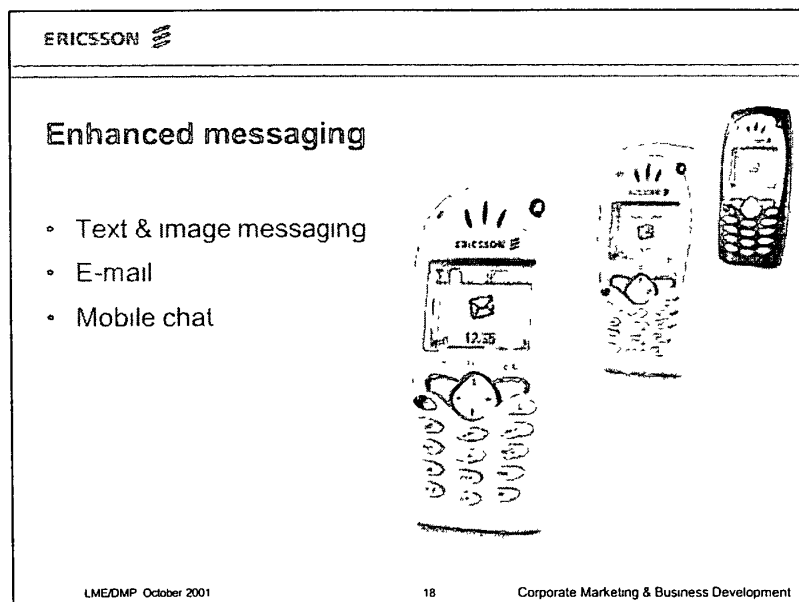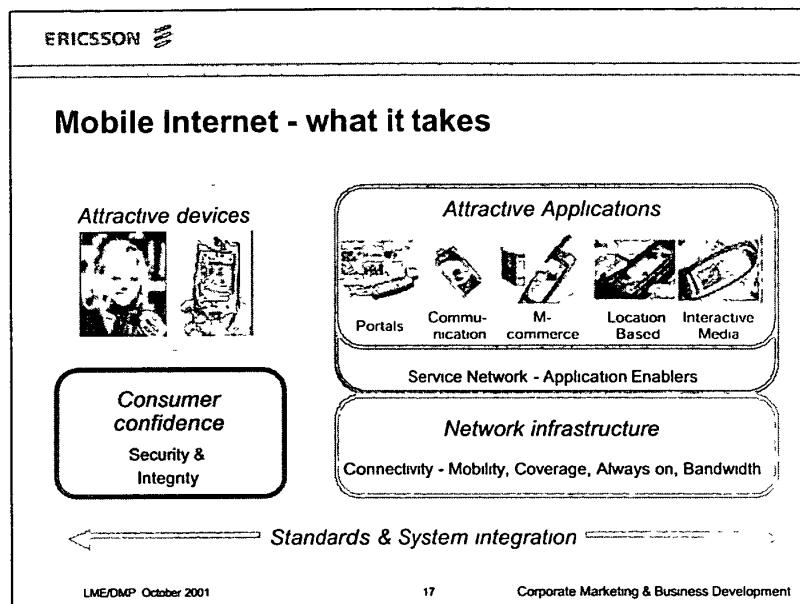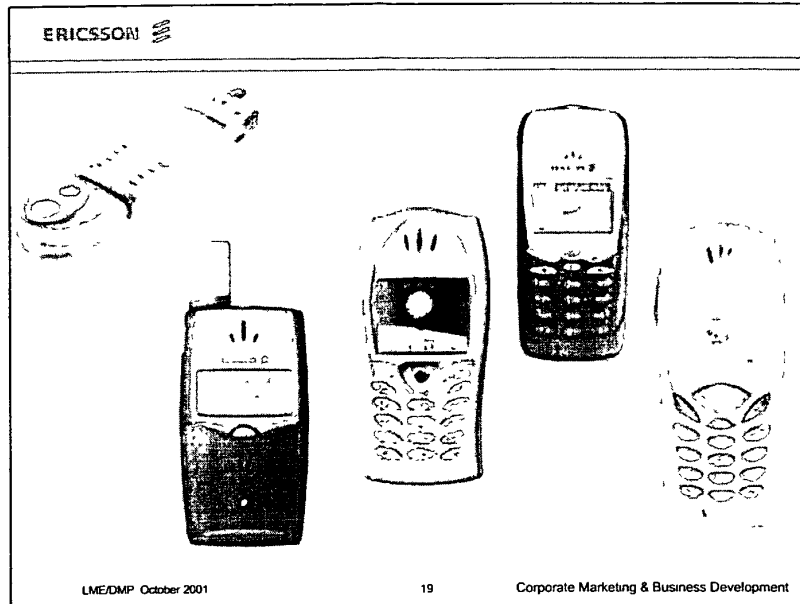
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The Power of Mobility

Personalization   Convenience

Freedom

**Personal efficiency
Competitiveness
Quality of life**

Control

Interaction   Community

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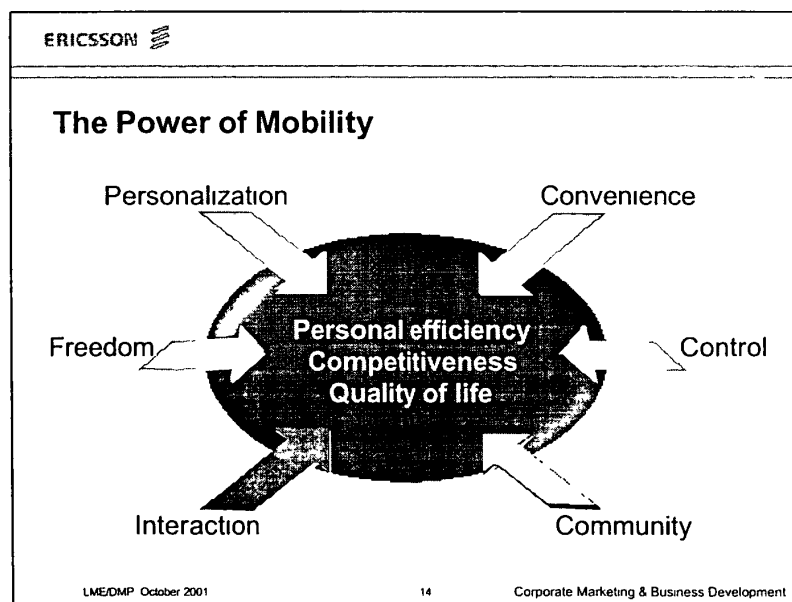
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What users want

| Consumers | Business users |

Kill
time

Fun
Time-saving
Empowerment
Social communication
Safety

The same
productivity tools
wherever they work

Save time

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Mobile Internet - what it takes

Attractive devices

Attractive Applications

| Portals | Commu-nication | M-commerce | Location Based | Interactive Media |

Service Network - Application Enablers

Consumer confidence

Security & Integrity

Network infrastructure

Connectivity - Mobility, Coverage, Always on, Bandwidth

⟵ *Standards & System integration*

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Enhanced messaging

° Text & image messaging

° E-mail

° Mobile chat

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Ericsson - leading the way

- The leading standards setter
- The leader in Mobile Systems
- Leading the race for 2 5G/3G Mobile Internet
- Leading the transition to Broadband Multi-Service Networks (ENGINE)
- Perfect partnership for multimedia handsets - Sony Ericsson JV
- Leading End-to-End solutions with strong global service organisation

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Policies for creation of a favourable environment

- Education & research
- Legal framework for business and trade
- Security and integrity
- Public sector use
- Industrial policy and regulations for the telecom sector

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What industry can do

- Contribute to policy discussions
- Drive knowledge creation through R&D
- Drive open standards
- Be effective solutions and technology supplier
- Work with local application developers

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