



## IT policy under Clinton-Gore

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### Why was IT a priority?

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- Large and growing share of GDP – technology as engine of growth
- Increased productivity of IT-using industries
- Dramatic improvements in price:performance and functionality
- Social benefits
- Personal interest of VP Gore



## **Overall goals**

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- **Maintain America's leadership position**
- **Ensure that more Americans participate in Information Age – avoid “digital divide”**
- **Maximize contribution of IT to other national goals (e.g. learning, health)**
- **Manage risks and potential downsides (e.g. erosion of privacy)**



## **Some of key policy documents**

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- **NII Agenda for Action (1993)**
- **GII – Agenda for Cooperation (1994)**
- **NII Advisory Council (1996)**
- **E-Commerce report (1997)**
- **PITAC report (1998)**
- **Okinawa Charter on global information society (2000)**



## **1. R&D policy**

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- **1993 – 1995 – HPCC begins to expand to include NII-related topics**
- **1996 – Clinton and Gore unveil Next Generation Internet initiative**
- **1999 – “Information Technology for 21<sup>st</sup> Century”**
- **2000 – Nanotechnology**



## **1. R&D policy (cont'd)**

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- **Long-term IT research (software, high-end computing, networking, HCI & IM, high-confidence systems)**
- **IT infrastructure for science and engineering (terascale computing)**
- **Ethical, legal, and social implications of Information Revolution, IT workforce**



## **1. R&D policy (cont'd)**

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- **Trillion-node network, pervasive computing**
- **Computers capable of quadrillion calculations/second**
- **Bio-info-micro**
- **More dependable, reliable software**
- **Information discovery in an exabyte world**



## **2. Telecom policy**

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- **Allocate spectrum for new wireless services**
- **Telecom Act of 1996**
  - **Require ILECs to open up local network (co-location, unbundling)**
  - **Allow ILECs into long distance once they open up local market**
  - **Competition - lower prices, more choice, faster deployment of broadband**



## **2. Telecom policy – outcomes**

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- **CLECs have 16 million access lines (8 percent of market) up from < 1 percent of market in 1996**
- **CLECs have invested \$56 billion in new voice and data networks since 1997, but shakeout occurring**
- **ILEC investment up 50 percent since 1996**
- **Broadband available in 70% of nation's zip codes – but still taking too long**



## **3. E-commerce policy**

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- **Principles:**
  - **Private sector should lead**
  - **Government should avoid undue restrictions**
  - **When intervention is needed, aim should be to create predictable legal environment**
  - **Gov't should recognize unique qualities of Internet**
  - **E-commerce should be facilitated on a global basis**



### **3. E-commerce policy (cont'd)**

- **Accomplishments**
  - **Buy-in from major trading partners on framework**
  - **Internet Tax Freedom Act**
  - **Duty-free zone in cyberspace**
  - **Digital signature legislation**
  - **DNS privatization**
  - **Promotion of ADR**



### **4. Educational technology**

- **4 goals of ed tech initiative**
  - **Connect every classroom to Internet**
  - **Increase access to modern, multimedia computers**
  - **Provide professional development for teachers to use technology effectively**
  - **Encourage development of high-quality content and educational software**



## 4. Educational technology (cont'd)

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- **Potential payoffs**
  - **Strengthen school-home connection**
  - **Make teaching a less isolated profession**
  - **Give students access to resources they wouldn't have otherwise**
  - **Allow students to engage in "learning by doing" (e.g. simulation)**
  - **Technological and information literacy**



## 4. Educational technology (cont'd)

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- **Accomplishments**
  - **Total federal spending on ed tech increased from \$23 million to \$3 billion**
  - **Classroom connectivity increased from 3 percent in 1994 to 63 percent in 1999**
  - **Launched initiative to train all new teachers to use technology effectively**



## **5. Digital divide – premises**

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- **Access to IT and skills important to full participation in America’s economic, social and political life**
- **IT could either help bring Americans together or further polarize our society along income, education, race, geography, disability**
- **Access to Internet should be as universal as the telephone**



## **5. Digital divide – accomplishments**

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- **Created national network of community technology centers**
- **Increased support for innovative applications of IT for low-income communities (TOP program)**
- **Made IT more accessible for people with disabilities (e.g. WAI, SALT)**
- **Served as catalyst for private sector efforts**
- **Expanded support for broadband connectivity in rural communities**



## **6. E-government**

- **Make government information available, at cost of dissemination**
- **Move towards transactions as well**
- **Organize information around users, not org chart of federal government**
- **Creation of FirstGov portal**
- **Linkages with research community**



## **7. Other IT applications**

- **E-democracy**
- **E-learning**
- **Digital libraries**
- **E-health**
- **Intelligent transportation**
- **Geospatial information**
- **Environmental monitoring**
- **Community networking**
- **Crisis management**
- **Telecommuting**
- **Law enforcement and public safety**



## **8. Privacy**

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- **Medical records**
- **Financial records**
- **Children's privacy**
- **Identity theft**
- **Encouragement of self-regulation for general Internet privacy**
- **Privacy coordinator at OMB**



## **9. Cybersecurity**

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- **President Clinton signs PDD-63**
- **Increased R&D on critical infrastructure protection**
- **Encouraged information-sharing within and between industry sectors**
- **Cyber-scholarships**
- **Improve security of federal systems**
- **Strengthen market forces (audit, insurance, legal)**



## **If I were the Tech Czar ...**

- **Make IT part of the solution to sustainable development, not the problem**
  - Real-time pricing of electricity
  - Low-power (More MIPS/watt)
- **Double IT research over next 5 years**
  - Long-term, high-risk research
  - More partnerships between research & mission-oriented agencies
  - Ethical, legal, social implications



## **If I were the Tech Czar ..**

- **Give every agency the following responsibility:**
  - Train management about technology trends, implications for their mission
  - Publish all new information on the Web (directly produced or supported)
  - Create national conversation around one or more IT applications - move towards recommended strategy/agenda



## **If I were the Tech Czar ...**

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- **Promote expansion of the public domain**
  - **Minow/Grossman proposal – create Trust Fund with spectrum revenues**
  - **IP “conservancies”**
  - **Efforts of organizations (e.g. MIT) and fields (physics e-print archive)**
  - **Out of print but not out of copyright**
  - **From “hot lists” to “wish lists”**



## **If I were the Tech Czar ...**

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- **Increase funding for learning research**
  - **Currently 0.1 percent of education expenditures**
  - **How do we learn?**
  - **Improve state-of-the-art of educational technology**
  - **Large scale trials with control groups before “reforms” are implemented**



## **If I were the Tech Czar ...**

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- **Focus “digital divide” efforts on specific outcomes – such as:**
  - **Increase adult literacy by giving everyone access to a “reading tutor”**
  - **Lower unemployment rate among people with disabilities with accessible IT**
  - **Use public health information systems to raise childhood immunization rates**