21st Century Communities
A Short Introduction
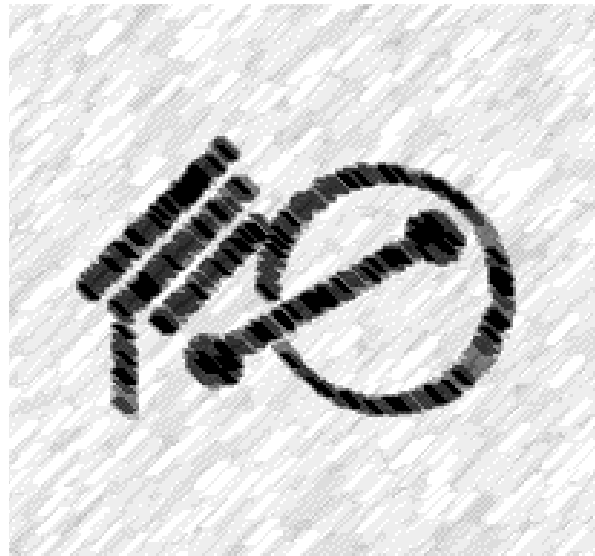
BLACKSBURG
electronic village

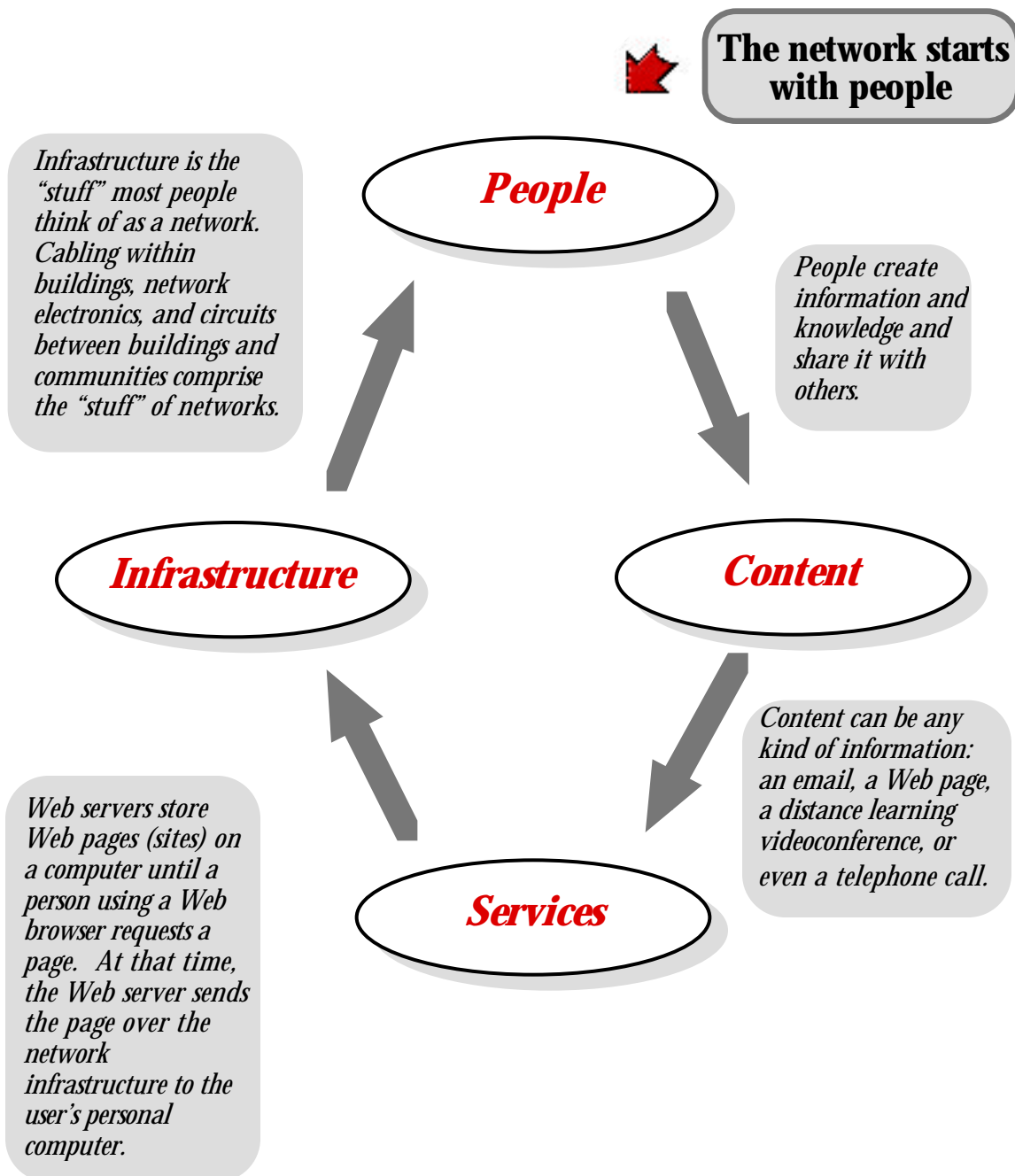An outreach effort of

Virginia Tech

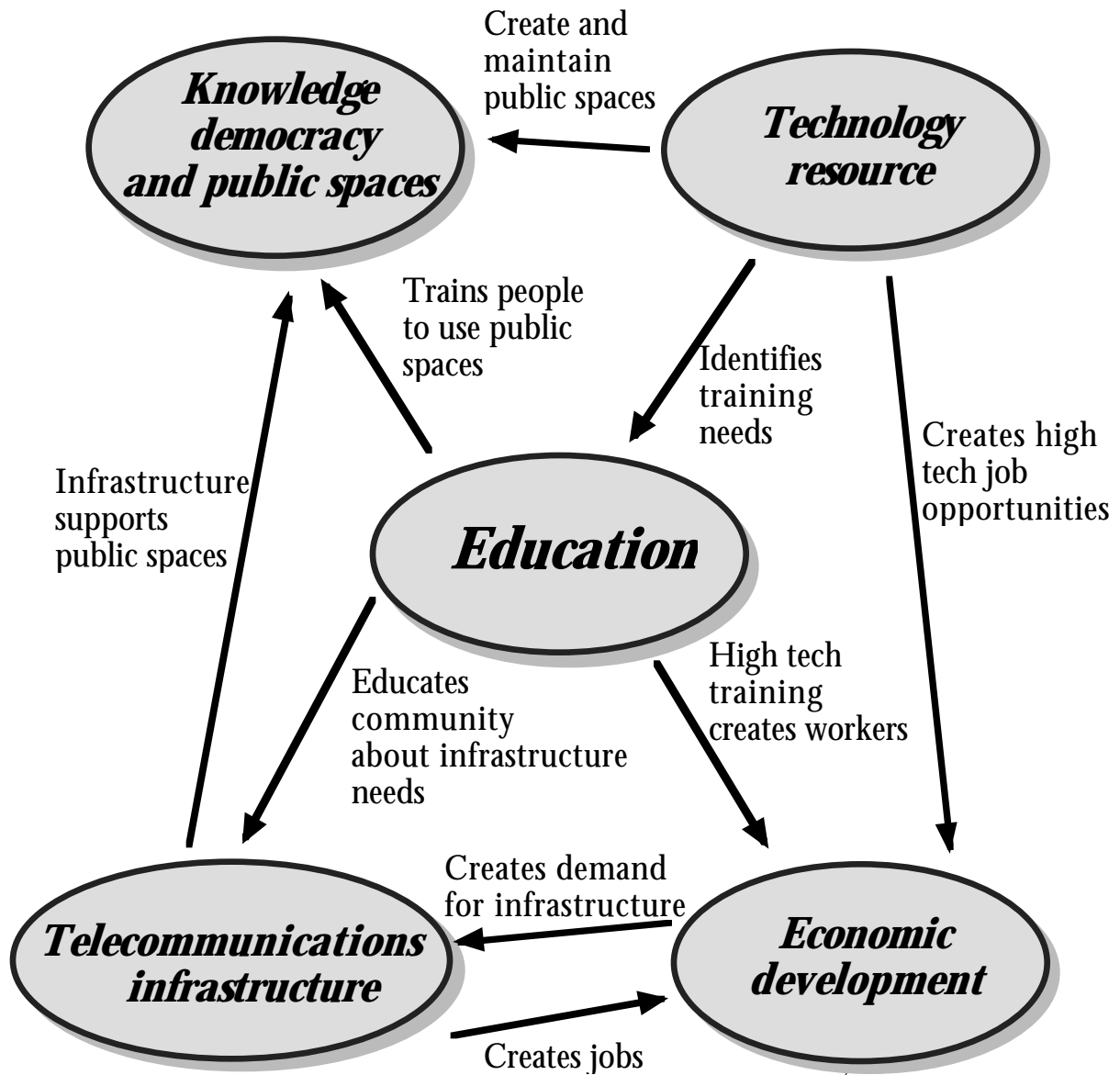*Putting knowledge to work*

Defining the "smart" community

❏ High bandwidth services into and throughout the community, for all businesses, organizations, and residents. The target bandwidth to the home in Blacksburg is 25 megabits/second (dedicated) for both wired and wireless access services.

❏ Affordable access community wide wherever it is needed. Fast access does not always mean cheap access. The two must both be available.

❏ A community–managed telecommunications infrastructure that creates a level playing field for local and regional access and service providers. This infrastructure would include dark fiber (where permitted), community telecommunications duct systems, co–location facilities, and very high bandwidth local switching services (MSAPs).

❏ A minimum of 3-4 network access companies providing a full range of services and reasonable prices.

❏ Economic development initiatives tied to Information Economy business needs, especially the support of entrepreneurs and the development of a skilled workforce.

❏ On-line government, schools, libraries -- government services available 24 hours a day, 7 days a week.

❏ Connected citizens and civic groups engaging the community and bringing people closer together.

❏ Careful attention to quality of life issues, including limits on sprawl, greenspace preservation, and alternative transportation initiatives (bikeways, walking trails).

What is the network?

The goal is to increase the capacity of the community to adapt to a rapidly changing 21st century society and to use technology to solve increasingly complex community challenges.

The network starts with people

Infrastructure is the "stuff" most people think of as a network. Cabling within buildings, network electronics, and circuits between buildings and communities comprise the "stuff" of networks.

People

People create information and knowledge and share it with others.

Infrastructure

Content

Content can be any kind of information: an email, a Web page, a distance learning videoconference, or even a telephone call.

Web servers store Web pages (sites) on a computer until a person using a Web browser requests a page. At that time, the Web server sends the page over the network infrastructure to the user's personal computer.

Services

The roles of a community network

Knowledge democracy and public spaces

Technology resource

Create and maintain public spaces

Trains people to use public spaces

Identifies training needs

Creates high tech job opportunities

Infrastructure supports public spaces

Education

Educates community about infrastructure needs

High tech training creates workers

Creates demand for infrastructure

Telecommunications infrastructure

Economic development
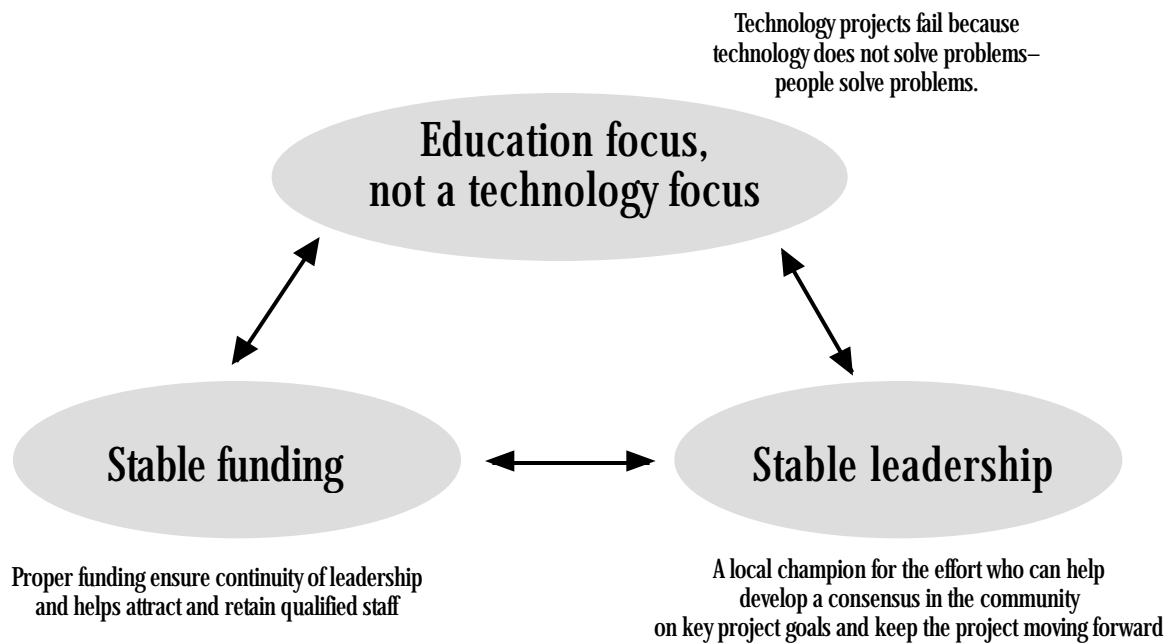
Creates jobs

Economic development issues
❏ Bandwidth to the community/within the community
❏ A trained workforce
❏ Internet–ready office space
❏ Small business development focus

Community network information services

Getting people connected means providing local services and assistance

❏ Every person in the community should have an electronic mailbox (email address) regardless of their ability to pay.

❏ A common electronic mail address space should be available for every person in the community, without regard to how each person accesses the network. This can be accomplished with a community mail forwarding service.

❏ Every person in the community should have affordable access to the Internet through private and/or nonprofit access providers.

❏ Local libraries should be supported as a partner in any community network to provide network access for those who do not have network access at home, and as a source of and access point for network-based information.

❏ Every community should support a common authentication mechanism (a digital signature) that can be used equally by both public agencies and private businesses to facilitate electronic voting and referendums, electronic commerce, and to simplify access to services.

❏ Online calendars make it easy to publish and update time-related information. Most communities will be able to use numerous online calendars, including a community event calendar and individual calendars for use by community and civic groups.

❏ Every community needs a public, online directory of email and Web site addresses of all personal, nonprofit, community, and businesses entities.

❏ Every community needs mailing lists to facilitate discussions on any and all topics of interest to the community, especially local government issues, public education, and to facilitate the work of civic groups.

❏ Every community needs a World Wide Web server as a community information publishing resource in cyberspace for local civic and government activities. The community needs a community–wide site for all general information, and civic groups, local government, and non-profits all need their own Web sites.

❏ Every community needs a local Usenet server and news groups to facilitate a "town commons" where people can meet to discuss issues of interest asynchronously and to facilitate discussion and local commerce.

❏ Every community needs online discussion (forum) facilities to support moderated asynchronous meetings and civic discussions.

❏ Every community needs a community historybase to help document and preserve an online, archival record of important community activities and events.

❏ Every community needs a database to Web publishing system to support the development and use of interactive, community information systems.

Key success factors

Technology projects fail because
technology does not solve problems–
people solve problems.

**Education focus,
not a technology focus**

Stable funding

Stable leadership

Proper funding ensure continuity of leadership
and helps attract and retain qualified staff

A local champion for the effort who can help
develop a consensus in the community
on key project goals and keep the project moving forward

Staffing roles

Education and training

- ❏ Short courses
- ❏ Seminars
- ❏ Coordination with other teaching organizations in the community

Information services

- ❏ Content delivery services (Web site hosting, email, other information services)
- ❏ Web site development for community groups, non-profits, local government
- ❏ System administration and network management

Leadership

- ❏ Project administration
- ❏ Evangelist
- ❏ Planning and development of programs
- ❏ Development of alliances with other groups and organizations

Goals of the Blacksburg Electronic Village

The Blacksburg Electronic Village is an outreach effort of Virginia Tech, the land grant public university of Virginia. The BEV is based entirely on the Internet. The goals of the project are to:

❏ Support and extend the virtual community in Blacksburg to complement and enhance the physical community.

❏ Research, develop and refine models for sustainable community–wide networks.

❏ Promote and extend the use of advanced network technology for local governance, business, and residential use.

❏ Provide support and assistance to other Virginia communities that are developing community–wide networks.

Milestones

Blacksburg has broken new ground in many areas of networking and technology use. Some examples include:

❏ Highest per capita use of the Internet in the world, with more than 87% of Blacksburg residents online and more than 50% of the community using broadband (typcially 10 megabit Ethernet or better) services at home, at work, or both.

❏ First town in the world to adopt an all-Internet model for a community–wide network.

❏ First community in the United States to offer residential Ethernet service as an amenity in apartments and townhomes.

❏ First county in the United States to have every school directly connected to the Internet. In Montgomery County today, every classroom in every school has direct, high-speed Internet access.

❏ Blacksburg has the highest per capita availability of ISPs (Internet Service Providers) in the world, with more than a dozen local and national providers offering modem and dedicated access, including cable modem, ISDN, and DSL services.

❏ Highest business use of the Internet of any community in the world, with more than 75% of Blacksburg businesses using the Internet for commerce and advertising. Nearly 500 local businesses are have listings on the BEV Village Mall.

❏ First community-managed MSAP (Multimedia Services Access Point), providing the foundation for very high bandwidth applications in the community.

❏ First community to have operational high bandwidth LMDS wireless links (http://www.lmds.vt.edu/).

For more information

The Blacksburg Electronic Village is a unit of Communications Network Services, part of Virginia Tech. Virginia Tech is the land grant university of the Commonwealth of Virginia.

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A complete index of BEV related materials is available by selecting *Starting a Village* from the BEV home page.

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An introduction to the 21st century community
The Blacksburg Electronic Village is an outreach effort of Virginia Tech   http://www.bev.net/project/digital_library/