

The Teleworker's Toolkit

A Guide through the Technology Maze

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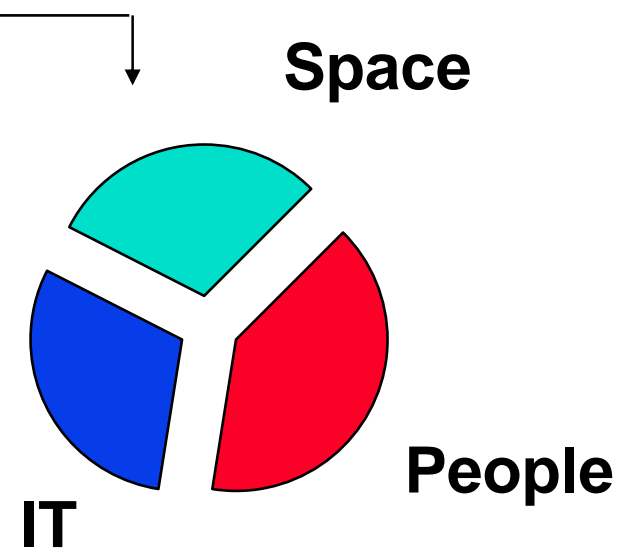
The Teleworker's Toolkit

- **The Business Imperative**
- **The Maze**
- **Toolkit Overview**
 - **Telework Characteristics**
 - **What's Different**
 - **Critical Success Factors**
 - **Products and Services**
- **Implications**

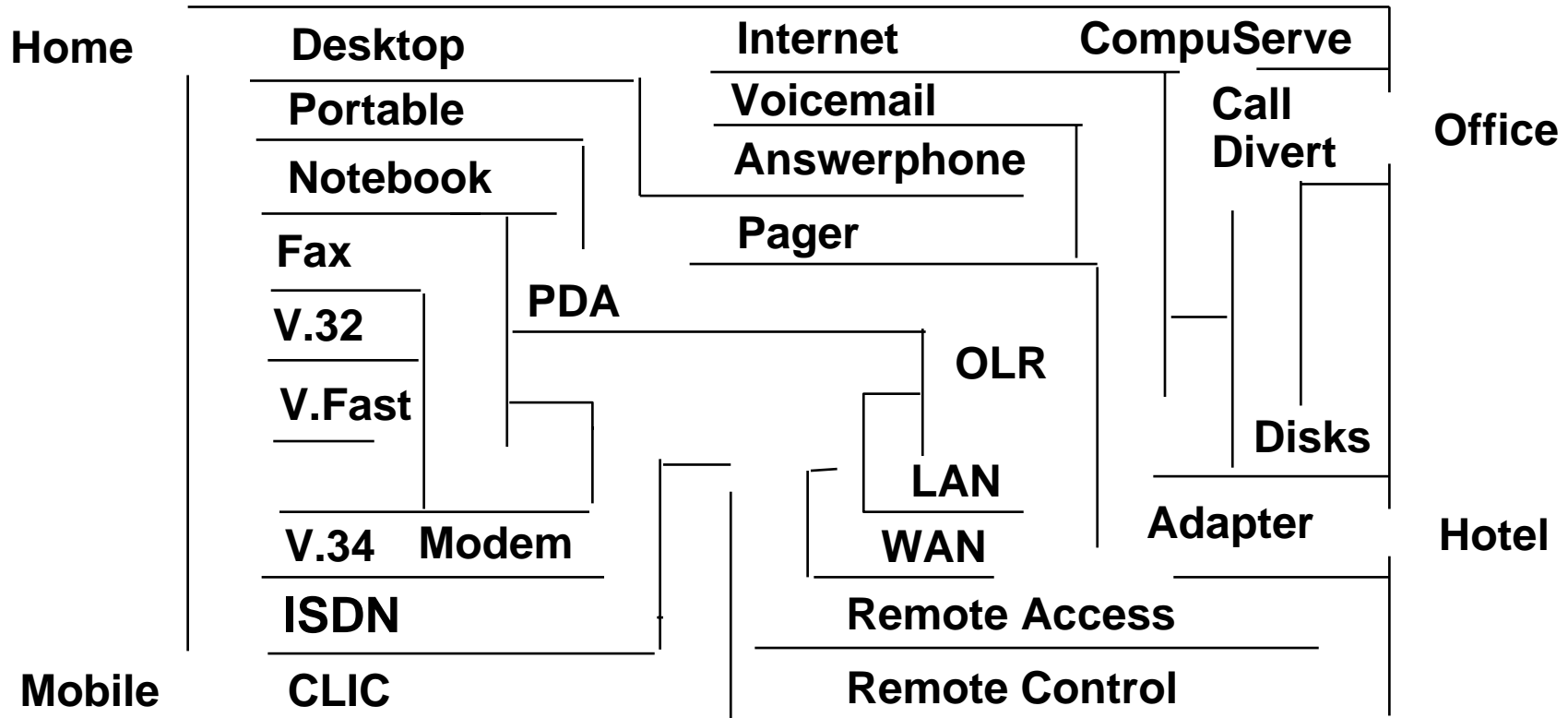
**Computing
Communications
Applications
Online Services**

The Business Imperative

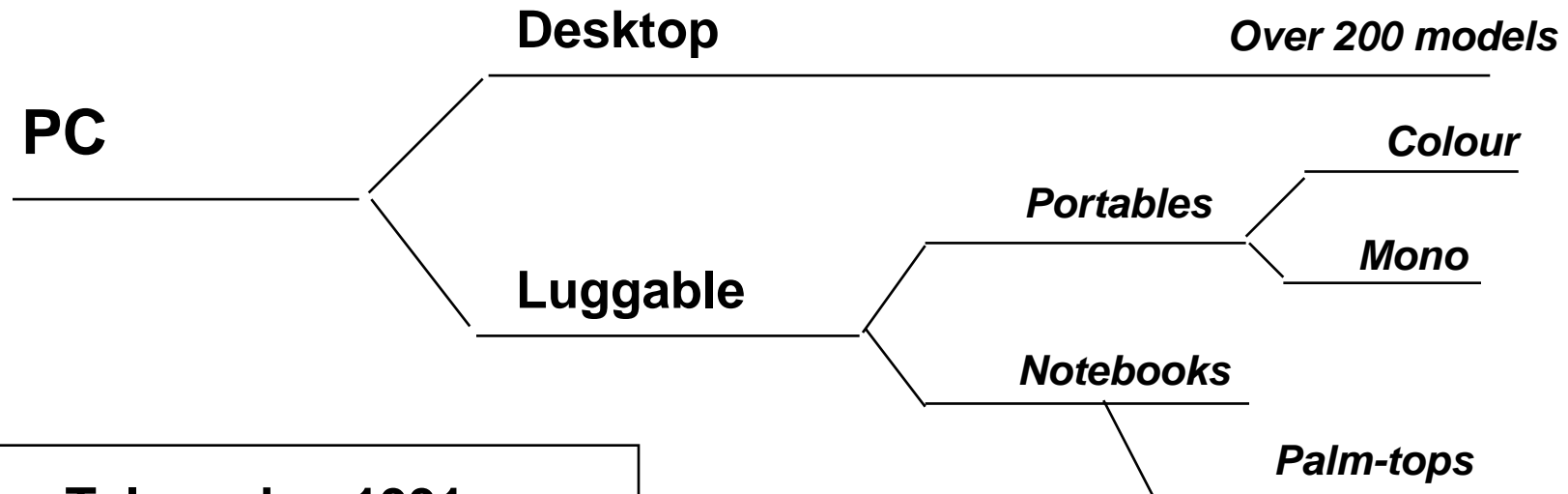
- **Reduced Costs**
- **Resource Productivity**
- **Customer Service**
- **Global Markets**
- **Access to Skills**
- **People Motivation**
- **Flexibility and Responsiveness**



The Technology Maze



Proliferation of Technology

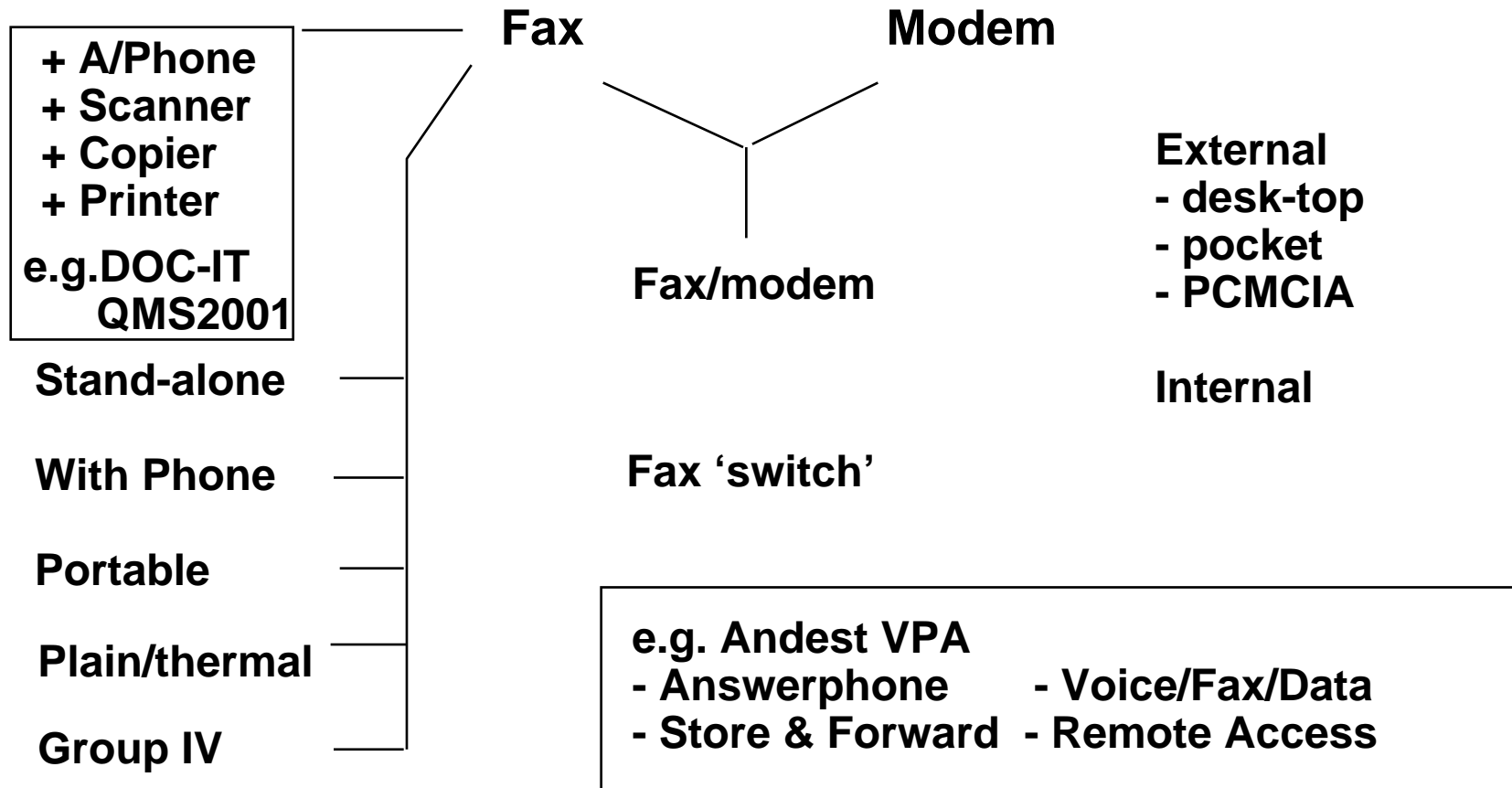


Teleworker 1991

386SX 4MB
40MB Disk
Mono
2400bps modem
£3,000

- More pervasive
- Wider Choice
- Improved Price/Performance

Wide Variety of Packaging



The User/Technology Maze

TECHNOLOGY

- **Diversity and Choice**
- **Variety of Packaging**
- **Ongoing Improvements**

USERS

- **Confused**
- **Ignorant of Potential**
- **Productivity Guidance**

SUPPLIERS

- **Optimistic ('Hype')**
- **Techno-jargon**
- **Not user focussed**

(Source: DTI and IM Teleworking Studies, MTA 1993-4)

The Toolkit - Purpose and Approach

Purpose: To enable teleworkers to gain the maximum business and personal benefits promised by flexible working e.g.

- > personal productivity
- > location independence

Approach: Identify requirements of teleworkers

- > distinctive to flexible vs. ordinary working
- > specific to individuals/teams

Select appropriate products and services

- > either generic or tailored for telework

Offer guidelines for effective use

Components of the Toolkit

Analysis & Envisioning:

1. Context Map
2. Task Analysis
3. Location/Time Analysis
4. Personal Needs/Style
5. Critical Success Factors

Selection & Enhancement:

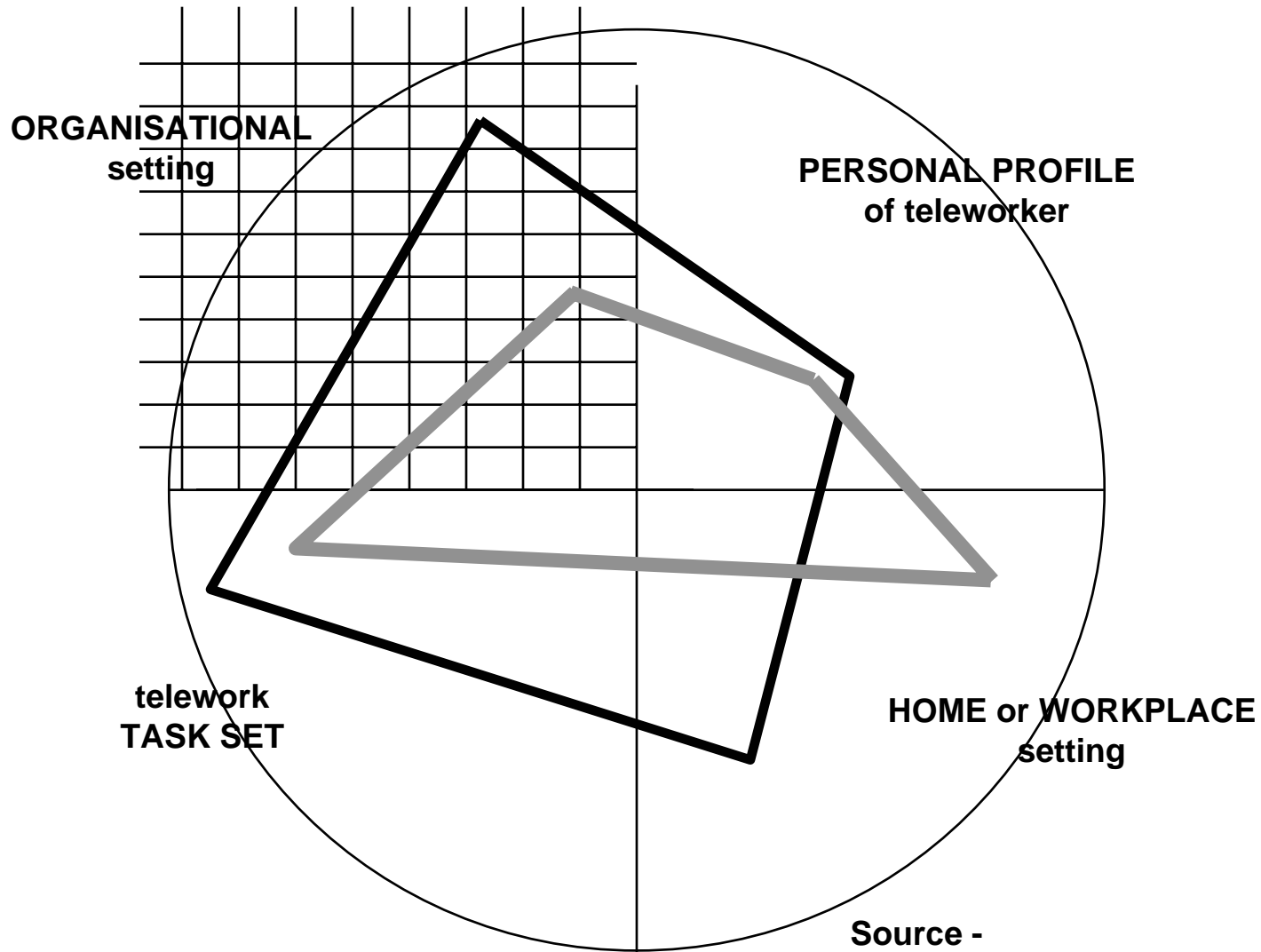
6. Basic Product Set
7. Product Maps
8. Criteria/Selection Charts
9. Holistic Review
10. Proficiency Aids

What's Different about Telework

- **Workplace** - what's shared, what's personal, what duplication?
- **Time** - more flexible: needs planning, chunking, coordination
- **Communications** - contact/access points, caller friendly?
 - dispersed message control
- **Information Locus** - PC/host
- **Relationships** - peer support, person-manager
- **Different technology** - home products, bandwidth
- **Security** - home/mobile security, data access/protection

The solution must address these differences

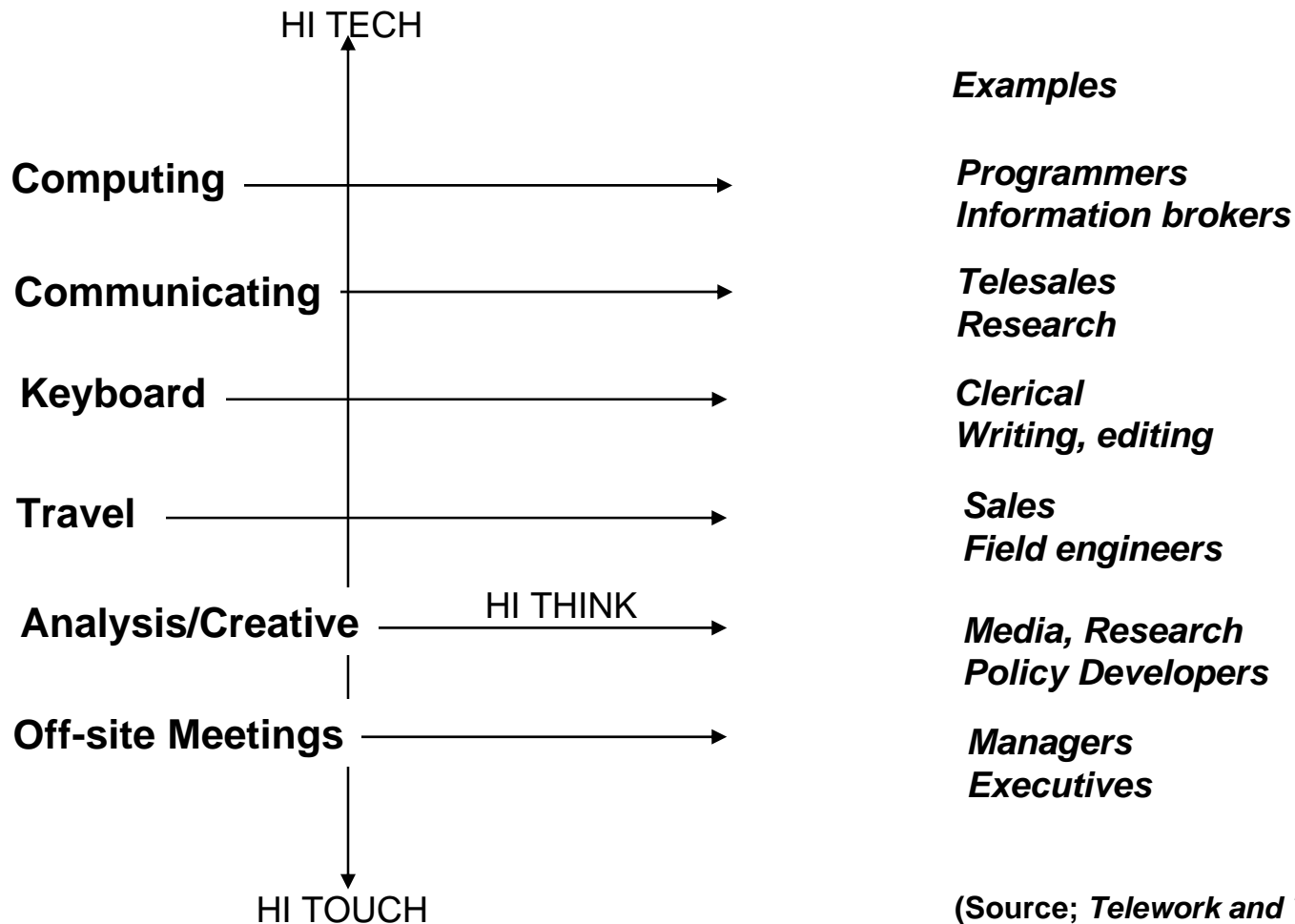
Simplified Teleworking Context Map



Source -
DTI Teleworking Study 1992 - 1993

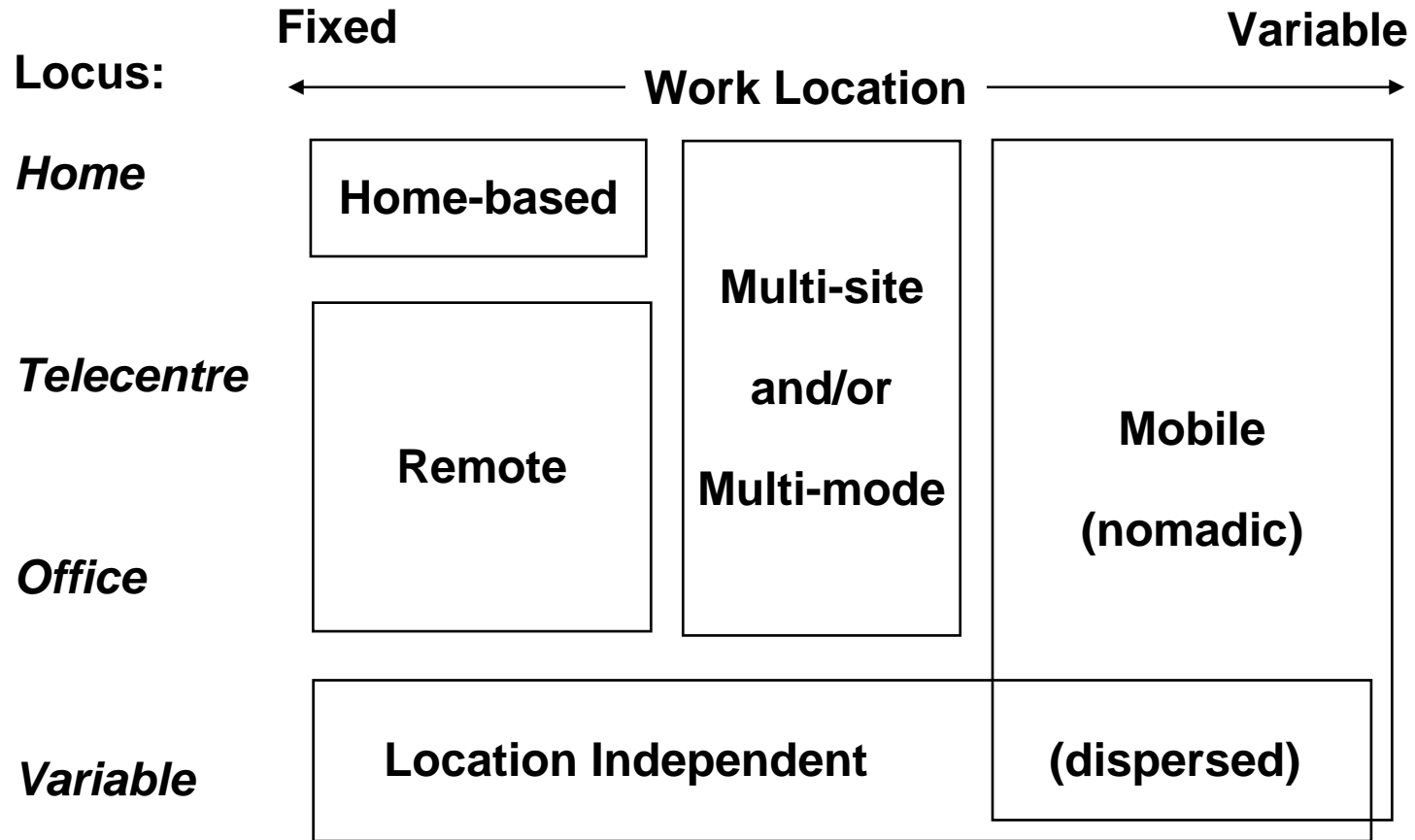
Work Activities that favour Telework

High on one of more of these axes favours telework



(Source; *Telework and Teletrade Facts and Myths*)

Categories of Telework



Note: Other dimensions are nature of contract e.g. employed/self-employed
frequency of telework, hours flexibility, degree of formality

Typical Critical Success Factors

Individual and Work Team

- **Contactability**
- **Message Control & Routing**
- **Information Access (d/load)**
- **Applications Access**
- **Personal (open) networking**
- **Coordination**
- **Work Flow Management**
- **Security**

+

Supportive Culture

- personnel policies

Management style

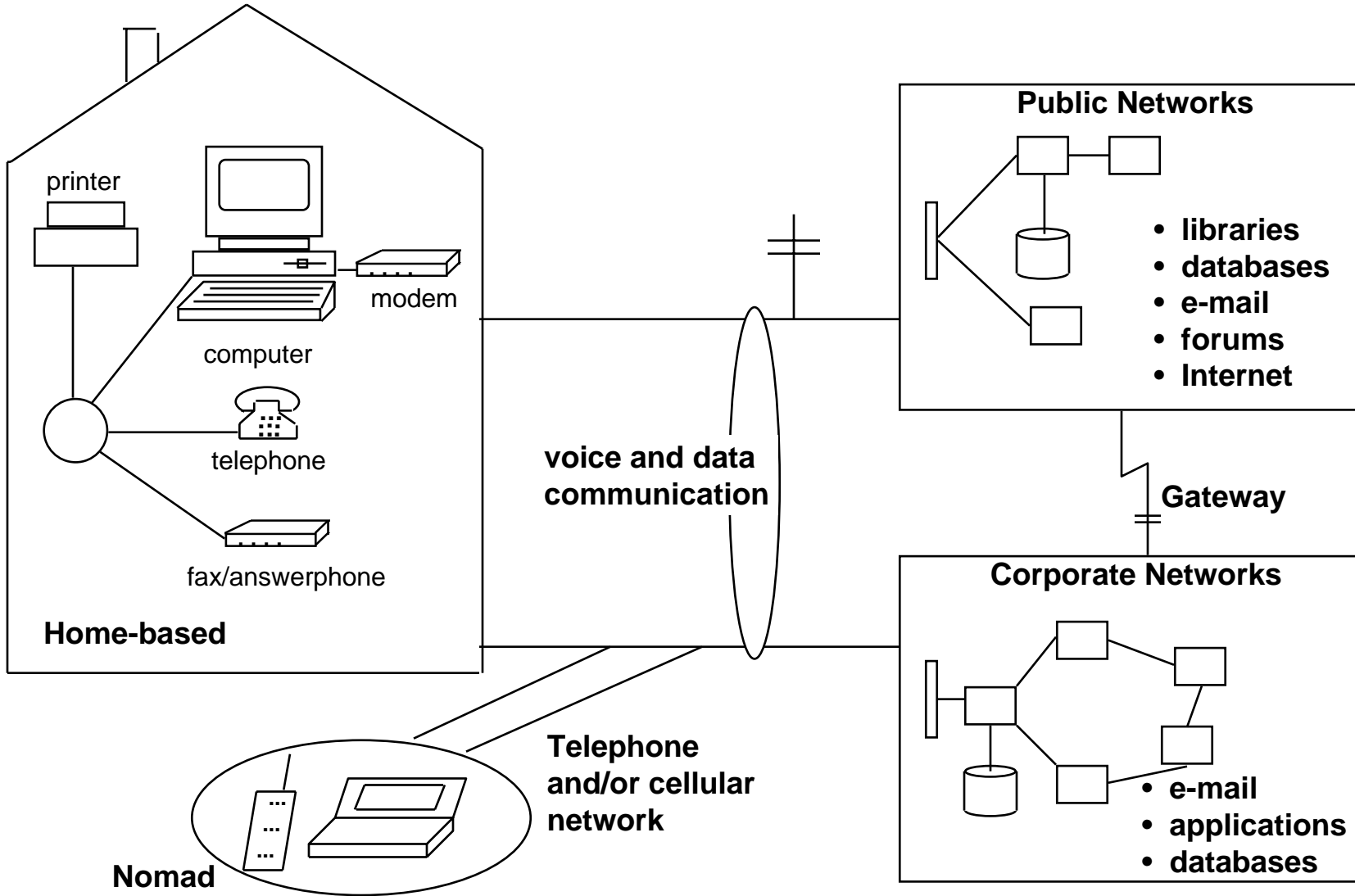
Workshops/Training

Infrastructure

- transparency

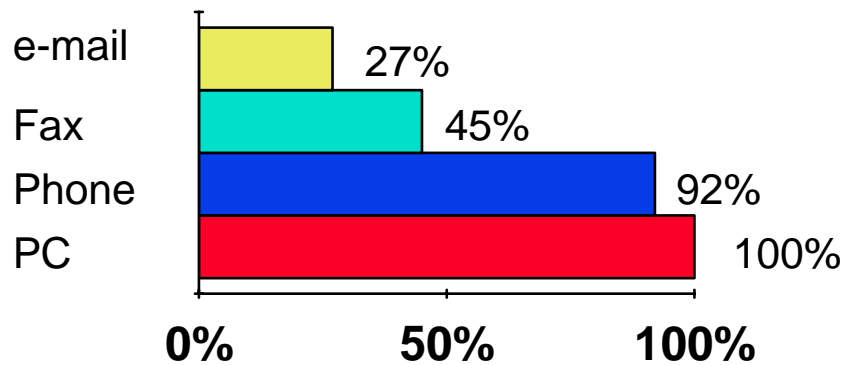
- all hours/dial-in support

Basic Product Set



Key Products and Functions

What teleworkers use

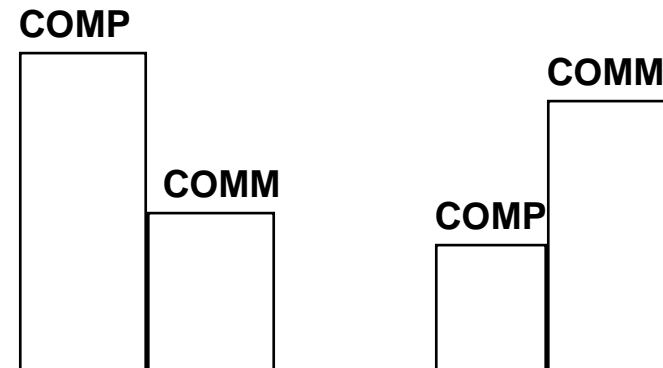


(Source: PATRA 1993)

IM Study:

67% use PCs intensively
67% used data comms moderate-high
(Source: Institute of Management)

Different patterns of computing and communications



Home-based

Mobile

- Store and Access Info
- Send and receive files
- Route messages
- Process messages

Product and Service Map (1) - Simplified

	Info Processing			Communications		
	Comp	Access	Appn.	Voice	Data	Image
Services	Maintenance	Online d/b OEN	EDI	VPN Tele-conf Call divert Messaging	EDI	Video-conf DT conf. Fax messaging
Software	DTP Office suite	Database Contact mgmt Groupware	Marketing Sales cycle	Voicemail	Comms OLRs e-mail Remote cntl	Fax S/W Fax on demand
Hardware	Desk-top Portable PC Printer	Disk CD-ROM		Phone Mobile phone	Modem	Fax Scanner Copier

← ISDN →

Office Equip. + Furniture + H&S + Legal

Some Key Decisions

- **No. of Lines**
- **POTS (modem) vs. ISDN**
- **Portable and/or Desktop**
- **Fax (machine, card, plain)**
- **Message Control and Management**
- **Redundancy/Resilience**
- **Printing**
- **File Storage (local/remote/synchronisation)**
- **Remote access/control**

User Function: *Remote Connection*

ISDN vs. Modem

MODEM

V.34 28.8 Kbps
MNP3-5 Comp/EC

Pocket sized

e.g.

Worldport (£295)
PACE Microlin

- + Throughput upto 110kbps
- + Low cost
- + Universal access (via phone jack)
- + Multiple formats
- + Universal standard (e.g. Hayes)
- 8-9 sec. connect time
- Faster PC I/O hardware needed

*mostly e-mail
small transfers
many locations
public services*



ISDN-2

2 x 64kbps
Terminal adapter

e.g. ISDN modems
Chiron SAT100
CITAM

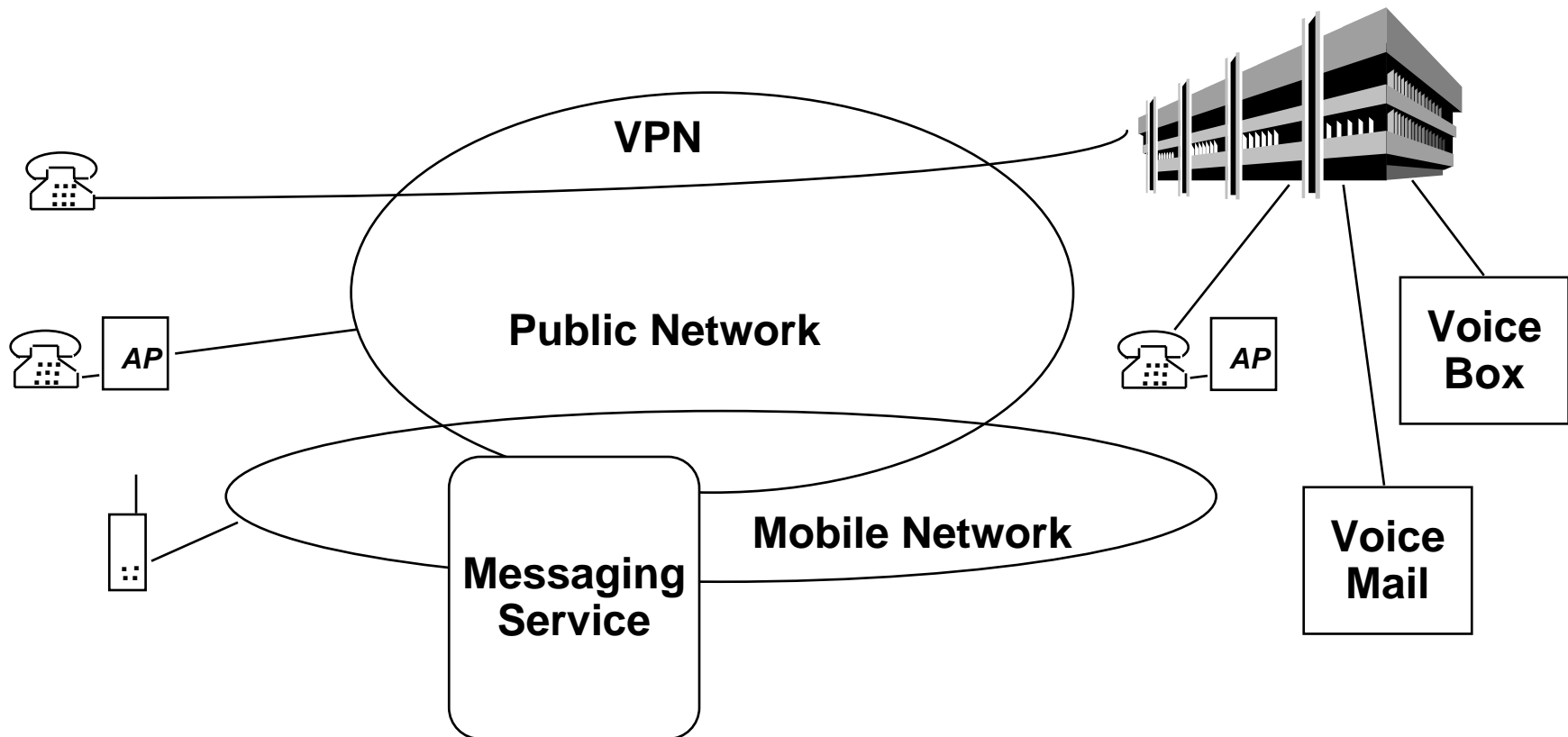
- + High speed throughput
- + Benefits voice/image
- + Fast connect time
- + Multiple line nos.
- High initial cost (£1000+)
- Limited choice of kit

*many large files
fast turnaround
mostly fixed location*

TRENDS - ISDN usage growing; ISDN 'modems'.
Growing need for bandwidth shifting balance
but modem will remain popular for some years.

Voice Communications - Some Options

Routing - Store - Forward - Access - Process

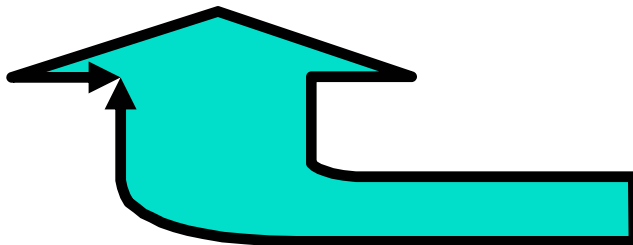
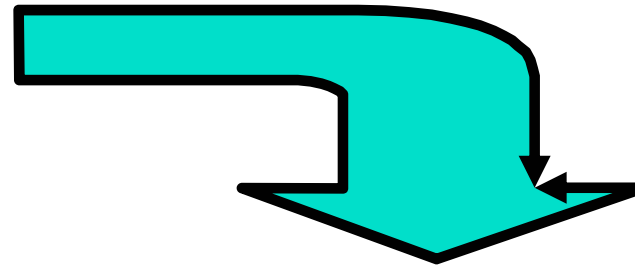


The Universal Business Card?

**Simon Simple
Marketing Manager**

ABC Limited
Sinonstown
ST99 5AB

Tel: 011 123 4567



**Colin Complex
Technology Marketing Manager**

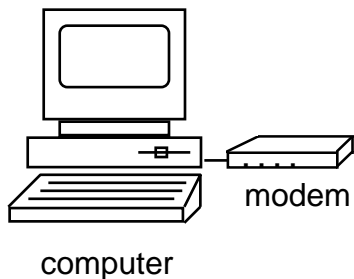
Mailstop 3.55J
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XYZ Internaional
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TP55 5XY-1234

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+44 1234 560000 (Switch)
Mobile 0374 111999
Fax: +44 1234 569876
e-Mail: complex@xyz.co.uk
or colin=name complex = org..

For home address, telephone and other e-mail please turn over

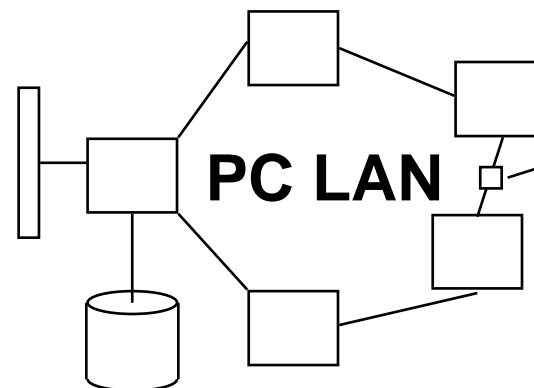
Applications Access

Home



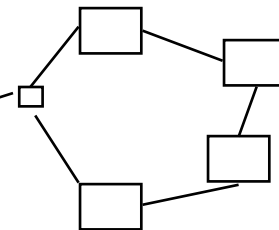
- **Stand-alone**
- **Terminal Emulation**
- **File transfer (e-mail)**
- **Groupware**

Office



- **Remote Access**
- **Remote Control**
- **Client/Remote Server**

Corporate Network

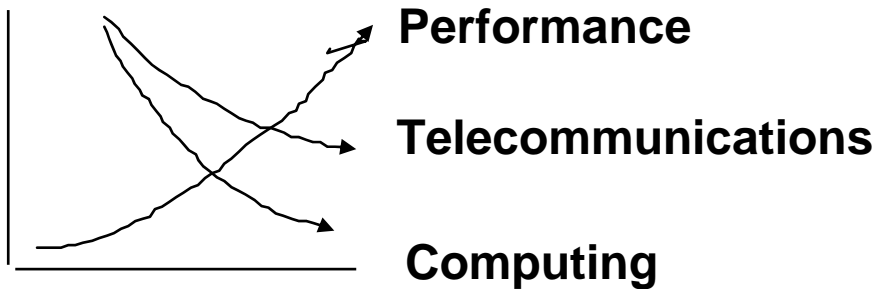


Tele-useful Products and Services

- **Portable handsets (not just mobile)**
- **Some fax/phone switches, home mini PBX**
- **Phone charge cards, call divert, Mercury OneCall etc.**
- **Contact software (e.g. ACT, Maximiser)**
- **LapLink for Windows, (pcAnywhere), Winfax**
- **Audio-conferencing**
- **Desktop video-conferencing, electronic whiteboards**
- **Off-line readers (OLRs) e.g. Wigwam**
- **Paging and messaging services e.g. Vodafax, Paragon**
- **Epinet - receives messages, faxes while PC is off**

Major Shifts 1992-4 (and future)

Prices



386 → Pentium (PowerPC)

9600b modem < £100
(voice modems, CIT)
Home office < £2,500 (£2,000)

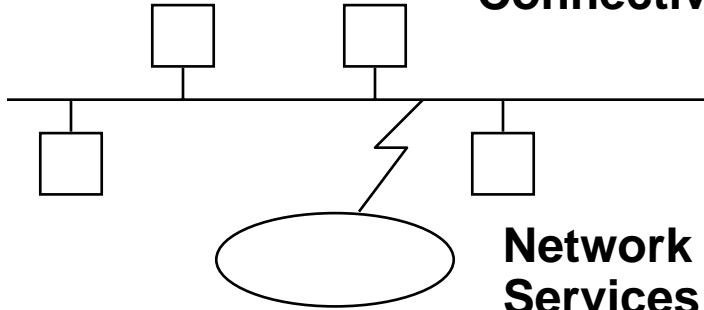
Size



Portability

486/500Mb in a notebook
(PDAs)

Connectivity



LANs > WANs - remote access
Mobile Messaging
TCP/IP - CC:MAIL Remote etc.
(ISDN)

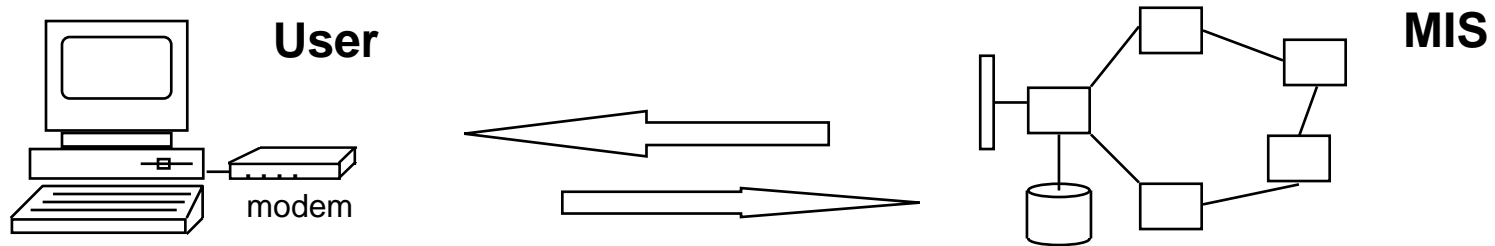
The Internet
(PoPs)

Implications (Navigating the Maze)

- **IS role and relationships change**
- **Work design is important (is your BPR tele-friendly?)**
- **New aspects to IT strategy** (remote access, gateways, the Internet, home support, upgrading etc.)
- **New metrics** (accessibility, utility etc.)
- **User empowerment**
- **Awareness and training** (+ try before buy)
- **Information resources - hardware/software/services**
- **Experience sharing** (e.g. best practice, workshops, conferencing)

Toolkit = process more than a product set

The Balancing Act



Flexibility/Anywhere access

Local Processing/Data

Open Networking

Extending Infrastructure & Support

Benefits of standardisation

Controlling Access/Data

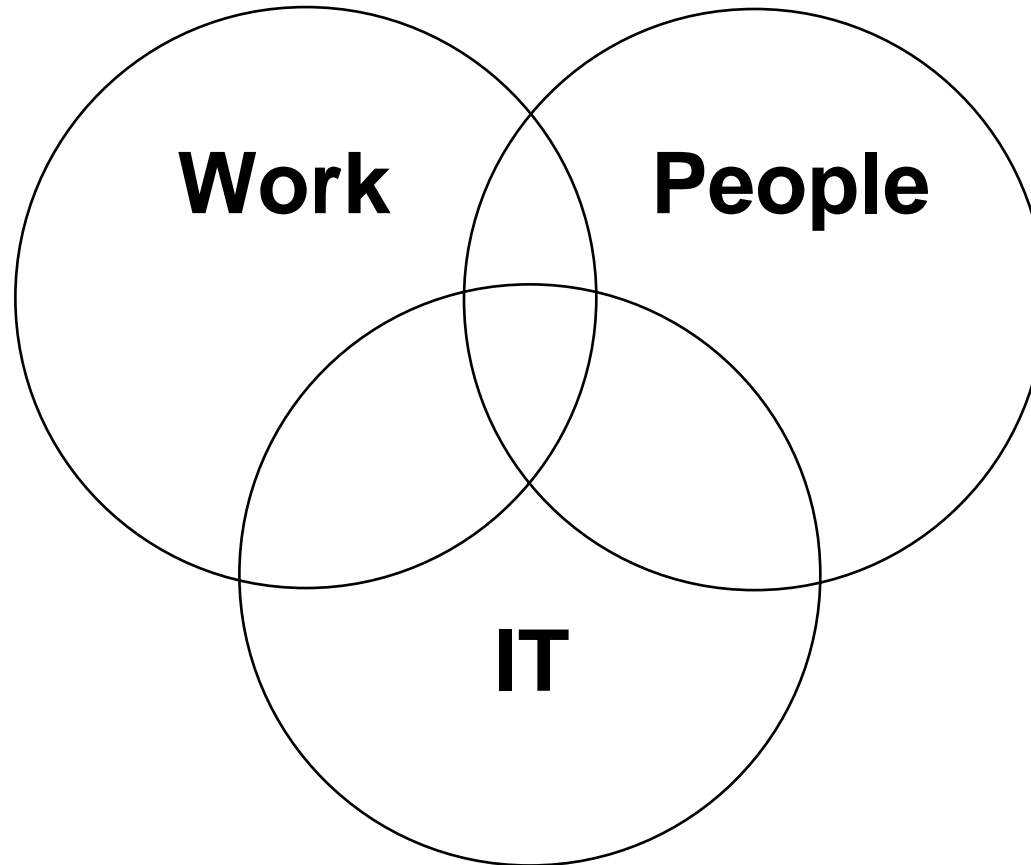
Laisser-Faire
(anarchy?)

Advisors

Symbiotic Partnership

Control

Achieving the Benefits



Management Technology Associates

innovation in open electronic networking

For general enquiries and information on publications:

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For information about the toolkit and consultancy services:

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e-mail: skyrme@cix.compulink.co.uk. Tel: 01635 551434**

Personal Needs/Style

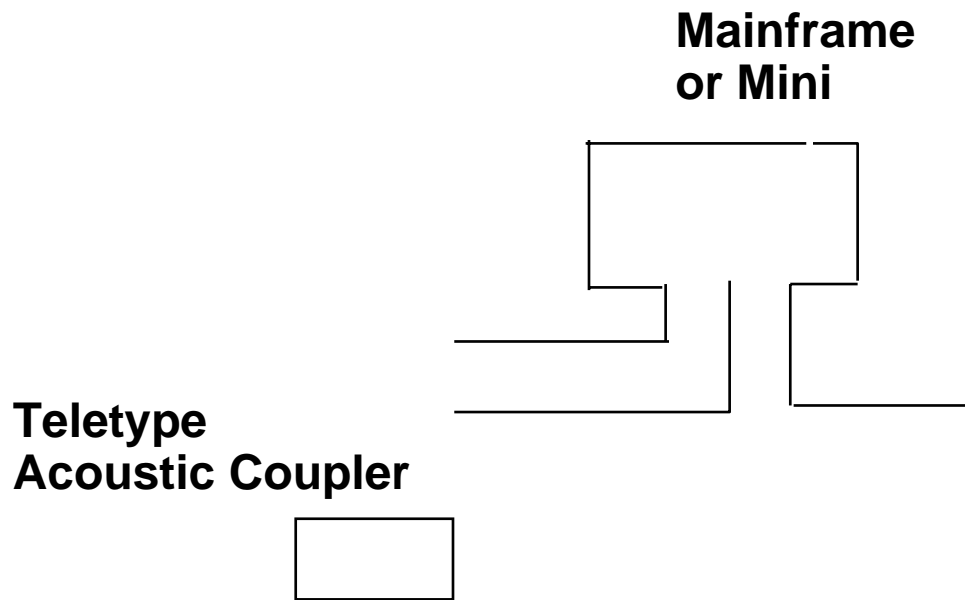


Conclusion: Everybody is different. No single solution will suit all

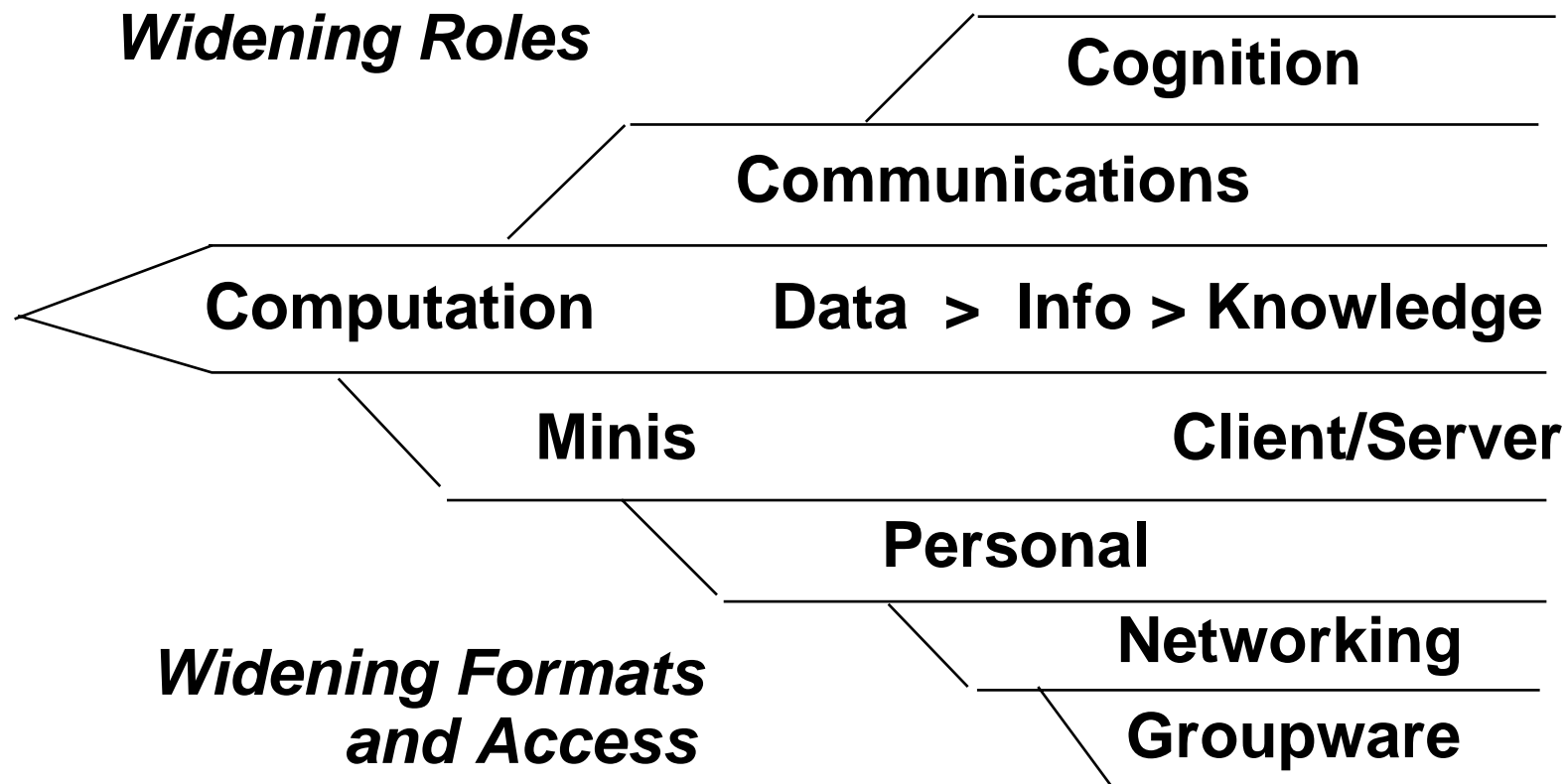
Vendor-speak

- “Industry Standard”** = may not work with other vendor's kit
- “Revolutionary”** = not proven; looking for guinea pigs
- “Unprecedented opportunity”** = we're not sure how to market this
- “Professional range”** = expensive for home, no user manuals
- “Works anywhere”** = needs cables, adapter kits, plugs etc.
- “Portable”** = remember spare battery pack
- “Remote access”** = afterthought to LAN technology
- “Suitable for teleworkers”** = we've just discovered this market but haven't changed the product

The Maze - circa 1980



Technology Evolution



3-5 Slides with Conclusions on..

... FAX messaging (virtual office)

... OEN access (Internet?)

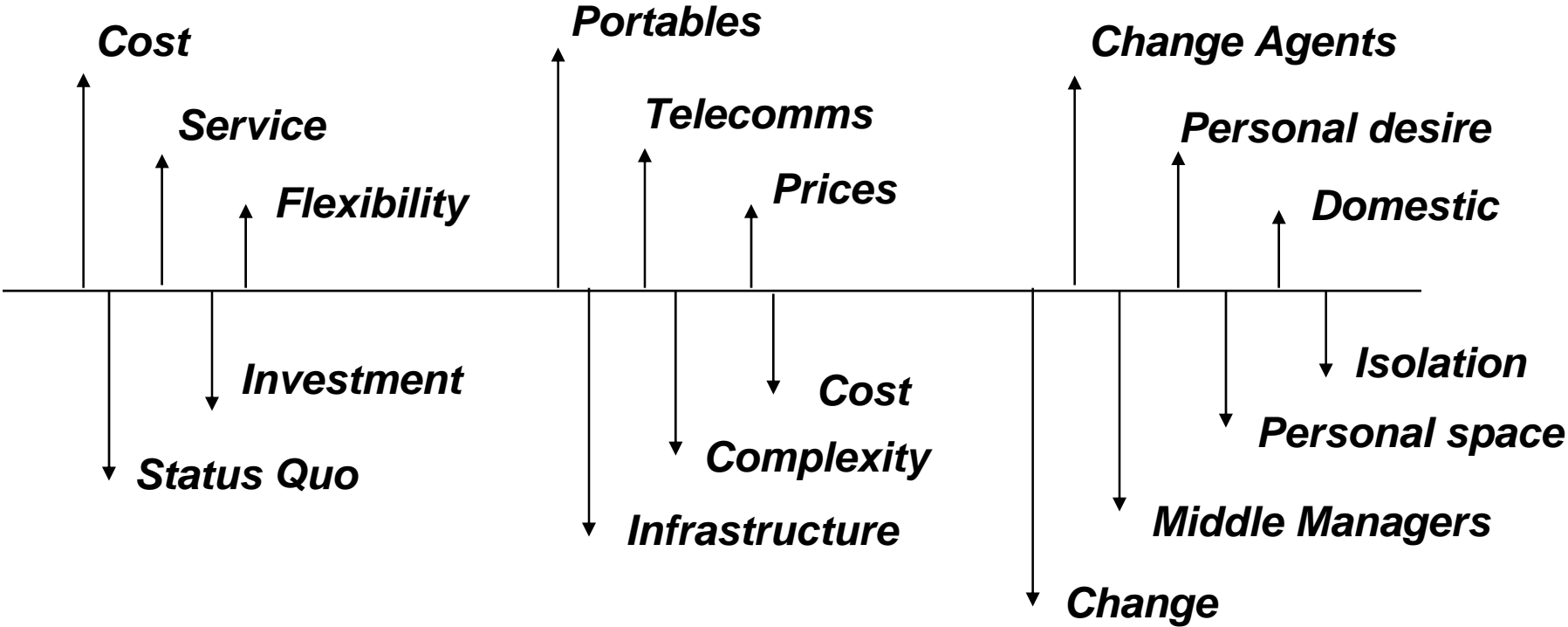
... Info synchronisaiton (Laplink etc.)

Enablers and Inhibitors

Business

Technology

People



Flexible Working Critical Success Factors

- **Clear Business Purpose/Strategy**
- **Holistic Perspective and Process**
- **Business Champion and Sponsor**
- **Active Participation and Learning**
- **Understanding the Differences**
- ***Appropriate Technology***