2. FRAMEWORKS FOR MONITORING ACCESS, USE AND EFFECTIVE USE OF ONLINE SERVICES

A major component of this study was the development and confirmation of various definitions and frameworks, which enable similar approaches to be taken across different sectors. These include:

1. Definition of online services

2. Distinguishing access, use, and "effective use"

3. Relating physical and electronic channels or services

4. Conducting sector-based examination

5. Developing applications focus

6. Identifying change issues

7. Structuring the link between statements of objectives and appropriate measures

2.1 Definition of Online Services

Although the current focus is inevitably largely on the Internet, a broad view was taken of "online services", recognising that we are trying to set in place a structure to map transitions over time. The following definition was used:

> An 'on-line service' is a service that makes content available by means of a telecommunications network which enables the transmission of information between users or between users and a place in the network. This implies the accessing of content via a form of interactive communications carried out over a distance, generally utilising either a computer operating a database and/or as the user interface. Access to the content is facilitated by a navigation tool or otherwise a menu indicating the order or structure of content items.

Prime examples of online services are considered to be:

♦ *Electronic mail (e-mail)* and the *World Wide Web (WWW)*, regardless of whether such services are delivered via the Internet, an Intranet, an Extranet or a proprietary telecommunications network.

♦ *Electronic Data Interchange (EDI), Automatic Teller Machine (ATM), Electronic Funds Transfer at Point of Sale (EFTPOS)* services, or otherwise any other modem-to-modem connection involving data transfer between computers.

♦ An *interactive voice response (IVR)* service involving a telephone as the user interface and computer-generated responses at the distant end.

♦ Information provision, bill paying, home shopping and/or ticket purchase involving *a telephone connection with a distant operator and a subsequent electronic commerce transaction*.

♦ A *kiosk*-delivered interactive service that is connected online.

♦ *Video-on-demand* and other forms of *interactive television*, whether delivered via a broadband communications network or via the Internet.

♦ *Interactive telephony* or *facsimile*, possibly involving a call-back capability.

♦ *Video and audio-conferencing* that facilitates distance education

2.2   Distinguishing Access, Use, and "Effective Use"

We made distinctions between access, use, and effective use, noting that having access to services does not necessarily mean they are used, using them does not mean they are used effectively - access and use are necessary but not sufficient conditions for effective use. "Effective use" we see as meaning there is sustainable value for users, providers, and communications suppliers.

- Access to services: Equipment enabling service delivery has been purchased or the service can be subscribed to; or without purchase, it is physically possible to gain access to such a service or enabling equipment.

- Use of services: Quantification of the actual use or operation of the service, eg. in terms of usage volume or frequency of use.

- Effective use of services: A measure of the actual or perceived value gained from use of the service, eg. satisfaction, affordability, return on investment, value for money, usefulness, extent of repeat use.

Components of value were identified for the key stakeholders in applications. A common structure was developed for all sectors and application areas. This approach was intended to provide guidance to appropriate indicators and measures in different applications, not to be arbitrarily prescriptive of what constitutes value to different stakeholders.

Value to	Indicators

Users	Usefulness (meets needs)
	    Includes quality, timeliness, trust
	Affordability
	    Includes cost effectiveness
	Ease of use
	    Includes physical accessibility, comfort, ability to use interface, social/ organisational preparedness to use

Content service providers (government, businesses, agencies)	Contribution to organisational strategy, probably including:
	    Productivity/leverage
	    Extension of range and quality of services
	    Market access

Communications service providers	Return on investment Extension of range and quality of services Market access

An illustrative, generic framework of measures is at Attachment 1.

2.3   Relating Physical and Electronic Channels or Services

Recognising that users "mix and match" communication channels or services to the characteristics of different activities, it is important to examine online or electronic approaches in a context of understanding physical or traditional approaches.

A simple approach appeared to be to utilise the P-Door (physical door) and E-Door (electronic door) contrast used in material from the Canadian State of New Brunswick, as a means of identifying appropriate indicators which may apply across both the physical and electronic contexts.[1] Initially we developed frameworks which included comparable measures for P-door and E-door. As this became too cumbersome we endeavoured to maintain this recognition of multiple channels through other approaches. This context of both electronic and physical approaches probably needs to be more strongly recognised.

2.4   Sector-based Examination

We focused on different sectors in which online services are utilised, seeking to understand the issues that are general across sectors and those that are specific to particular sectors or to activities within them. The following sectors or crosscutting perspectives were considered:

- ♦ business (including electronic commerce)
- ♦ government services
- ♦ education services
- ♦ health services
- ♦ residential users
- ♦ groups with special needs

     (Signalling the capacity for a monitoring process to focus on outcomes for a range of specific groups; including non-metropolitan users, people with disabilities, people without online access, elderly people. In this study we have outlined only a possible approach to non-metropolitan users).

Other sectors could have been included and should be considered for future development; particularly cultural information and entertainment.

2.5   Developing an Applications Focus

If we are to discuss "effective use" we need to be able to describe ***how*** services are being used. Our approach has been to identify key "applications" or activities within each sector as the elements for detailed analysis. They included:

---

[1]   See the presentation in the Report of the CIRCIT 1997 Policy Forum in *Effective Use of Online Services: How Can Government, Industry, Business and Community Collaborate?,* pages

---

Applications by Sectors

- **Business**

Creating Market Presence
Consumer / Client Management
Supply Chain Management
Work Group Collaboration

- **Government services**

Electronic Services Delivery (ESD)
Inter & Intra-Department/Agency Communications
Whole-of-Government Information Locator (or Directory)

- **Education**

Classroom/remote delivery
Development of learning resource materials
Management of learning
Collaborative projects
Professional development
Information for prospective clients
Administration

- **Health services**

Health Informatics
Professional Development and Continuing Education
Clinical Consultation and Diagnosis

- **Residential**

Family/Social
Money
Shopping
Education
Entertainment
Health
Transport
Compliance

For many of these applications, to provide greater meaning, we developed descriptive vignettes to review with panels and confirm their appropriateness as bases for analysis.

2.6   Identifying Change Issues

A key focus of a monitoring process may be the identification of developmental or "change" issues - approaches to barriers - which must be addressed to achieve effective use. These change issues are candidates for intermediate policy objectives.

In each sector we have identified initial sets of change issues. Generally these require greater review by panels to be authoritative lists; a particular exception being in the non-metropolitan sector where the IPAC Working Group provides a significant initial analysis.

Broadly, it appeared that generic change issues could be identified and described by stakeholder groups, providing a reasonably common framework to test across all sectors. These generic issues include:

- **Related to users**

Awareness of potential use
Access
Skills
Attitude
Comfort/trust

- **Related to content service providers**
  Awareness
  Attitude/disposition
  Skills
  Organisational capability
  Understanding user needs

- **Related to communications providers**
  Infrastructure availability, appropriateness, usability
  Standards, interworking
  Functionality (security, resource discovery,…)

- **Policy/regulatory**
  Funding models
  Market stimulus
  Legal (privacy, consumer protection,…)

2.7 Structuring the Link between Statements of Objectives and Appropriate Measures

The study may be viewed as having three phases:

1. Understanding the kinds of information which might be sought; for which initial frameworks were developed.

2. Understanding what information is available and might be wanted; which entailed the examination of data sources and review of approaches with panels.

3. Understanding what is information is wanted on an ongoing basis and how it can be obtained.

This is the stage the feasibility study has reached. It requires

 (i)   clarity of top-level objectives,

(ii)   specification of intermediate (3-5 year) objectives as the focus for monitoring, and

(iii)   identification of information sources and availability.

This is a task which could be conducted through sector-specific groups.

An initial framework for focusing on these issues is provided for the Government Services sector at Attachment 2.

<div align="right">

ATTACHMENT 1

</div>

Framework For Measures By Sector

ACCESS (Access by members of group to specific services)	USE (Use of specific services)	EFFECTIVE USE (Value in relation to particular kind of use/application)

By identified group:
 	
No. (%) who
 	
- have (own/subscribe to) services
 	
- have, without ownership
    (i)   unlimited
    (ii)   limited
  access to services
  (define levels)
 	
Change/Barrier issues (identify relevant issues and define indicators for sector); e.g.,
 	
Location
Cost
Infrastructure availability
	By service
	
	Amount of use of service
	
	Change/Barrier issues; e.g.,
	
	Awareness
	Skills
	Ease of use
	Availability of support staff
	Demand
		By application/activity: Measures of the following nature as appropriate for activity
		
		Users Meets needs/Usefulness (satisfaction with outcome
		            of activity)
		            Affordability/value for money
		            Accessibility
		
		Content Cost (relative to physical/traditional)
		Service Productivity/leverage
		Provider Extension of range and quality of services
		            Market access
		
		Comms Return on investment
		Provider Extension of range and quality of services
		            Market access
		
		Change/Barrier issues; e.g,
		Organisational acceptability - e.g., timetabling
		Personal acceptability - e.g., security, trust
		Technology - e.g., effectiveness of resource discovery tools
		Policy/regulatory - e.g., applicability of Medicare

<div align="right">

ATTACHMENT 2

</div>

A Framework for Analysis of Objectives and Approved Measures: Government Services Sector

Objectives:

a)   Long-term (5 – 10 years +)
To provide services, delivered online where appropriate, that:
- Demonstrate value to consumer and business users as well as governmental content providers;
- Are nationally and internationally competitive in terms of cost effectiveness and responsiveness; and
- Improve the social and economic well-being of its citizens.

b)   Intermediate (3 – 5 years)
1. All appropriate government services can be accessed online by year 2000/2001;
2. The delivery of government online services (GOLS) will be integrated around customers' needs;
3. For its content providers, government online services will result in improved productivity, improved range of services and increased market access; and
4. The Government will be recognised as a leader, particularly in online service provision, so as to engender an online culture.

Intermed. Objective	Indicator	Measure	Instrument ('how obtained')	Available Data	Action/Comment
1.	**Access** - User Perspective	Volume [%, #] of users [type] who can physically access a GOLS [within x km thereof] by time period [year, year increment].	Survey data		
1.	- Provider Perspective	Volume [%, #] of GOLS made available by time period [year, year increment]	Departmental data		
		Number of integrated 'public access infrastructure points' (viz. kiosks, library terminals, web sites, IVR numbers).	Departmental data		

	Use			
2.	- User Perspective	Volume [%, #] of users [type] who have made an online request [type] by channel [type] by time period [year, year increment]	Mainly system data, also survey data	
		Volume [%, #] of requests [type] made over channel [type] by time [year, year period]	System data	
3.	- Provider Perspective	Change in volume [%, #] of requests [type] fulfilled by online means [channel type?] compared to all possible means.	System and departmental data	.
	Effective Use			
2.	- User Perspective	% satisfaction of users [type, demographics] with services and their content [request type, channel type] according to satisfaction parameter [type: relevance of content, accuracy of content, convenience of services provision, trust in service provision, cost of access, choice between channels]	Survey data	
3.	- Provider Perspective	Growth over time [period] in usage of services [type] by channel [type] per access infrastructure point [type: kiosk, web site, IVR number].	System data	.

4, 3, 2	**Change Issues**	Cost effectiveness of online delivery by channel [type] compared to conventional means. • Accountabilities of Dept heads • Privacy & data protection • Universal provision of secure transactions • Promotion of GOLS availability and value/benefits arising • User-friendliness of interfaces, system design	Departmental data		

Notes:

GOLS = Government Online Service(s)

IVR = Interactive Voice Response

Prior definitions are assumed of: user groups/delivery channel types/(macro) service categories/request types