

行政院所屬機關因公出國人員出國報告書
(出國類別:考察)

考察

「日本網際網路業務相關監理策略及機制」

(編號 01-09-04)

報告書

行政院研考會/省(市)研考會
總號欄

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出國地點：日本

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壹、考察目的與行程：

一、考察目的：

網際網路快速及顛覆傳統之發展，將影響二十一世紀人類 e 生活之方式，配合未來第三代行動電話無線寬頻上網之普及化，網際網路通信將潮寬頻化、多媒體化、無縫隙化（SEAMLESS）整合性發展。故本次考察主要係瞭解日本總務省及產官學界對第一類（無線上網部分）、第二類電信業務（含網際網路）經營者、電信設備生產者及寬頻接取網路服務等電信業務之管理策略及配套機制，網際網路業務經營消長情況及管理或營運策略等問題，俾利形成管理共識，以為電信總局管理及業者經營方向之重要參據。主要考察內容包括日本第三代行動電話之執照開放及無線上網多媒體服務、新一代網際網路 Ipv6 之發展現況、IP 整合性服務、網路電話、第二類電信事業之核照機制、寬頻網際網路之發展、網際網路之安全管理機制、網域名稱爭議處理及多語言網域名稱之發展等。

二、考察行程：

本計畫考察自民國 90 年 4 月 1 日至 4 月 7 日止共七天，參與考察人員由交通部電信總局高凱聲副局長領隊、郭素琴處長、林慶恒科長，與民營電信公司包括數位聯合電信公司傅志忠副總經理、東森國際網路公司王振亞協理、是方電訊公司曾濟深副董事長、邨竹生副總經理、台灣大哥大公司廖俊淇副處長、弘運科技公司沈正宙副總經理及口譯郭詩綿先生等一行十人透過東亞科學技術協力協會電氣通信委員會代理部會長阪口正人先生安排為期五天之考察活動，考察行程如下：

- 4/1 去程：台北—日本
- 4/2 拜訪與考察 NTT DoCoMo 研究所及總務省
- 4/3 拜訪與考察 NTT Communication 及 NTT 武藏野研究所
- 4/4 拜訪與考察 武藏野三鷹有線電視公司及 KDDI
- 4/5 拜訪與考察 JPNIC/JPRS 及 NTT ACCESS 研究所
- 4/6 拜訪與考察 JPIX、JIPDEC 及 JPCERT
- 4/7 返程：日本—台北

貳、參訪過程與會談重點：

一、四月二日參訪 NTT DoCoMo 研究所及總務省

(一)參訪 NTT DoCoMo 研究所

與下列人員進行會談：

代表取締役副社長 宇田好文

國際事業部擔當部長 河野達

國際推進部擔當部長 大西健治

會談重點如後：

1. 本次主要參觀重點為日本行動數據 (I-MODE、PHS、W-CDMA) 之發展，該所提供參訪內容為無線上網影片介紹、防震設施、電波暗室、多媒體評價室、無響室 (吸音/無反射) 及行動通信歷史陳列室 (包含第三代行動電話交換機原型機及手機) 等之參觀。
2. 探討第三代行動電話之核照機制、與第二代行動電話、PHS 系統等之市場競爭影響。

(二)參訪總務省

與下列人員進行會談：

總務省總合通信基盤局 國際部 調查係長 櫻井博之

總務省總合通信基盤局 電氣通信事業部 課長 宮崎順一郎

總務省總合通信基盤局 電氣通信事業部 係長 野九誠

會談重點如後：

1. 介紹日本高速網際網路普及化政策及 Japan GigaBit Network 超高速網際網路之發展。
2. 會談日本第二類電信事業核照機制、普及服務及互連機制、寬頻網際網路發展、網路內容之管理。

二、四月三日參訪 NTT Communication 及 NTT 武藏野研究所

(一)參訪 NTT Communication 公司

與下列人員進行會談：

Arcstar 事業部 事業推進部 擔當部長 田島純一

國際事業部 事業開發部 主查 鋤柄隆浩

Arcstar 事業部 IP 事業開發部 部長 三上哲郎

Arcstar 事業部 IP 事業開發部 擔當課長 牧輝文

用戶事業部 IPv6 開發部 擔當部長 齊藤康己

參訪之重點如後：

1. 該公司主要經營業務為國際、長途、網際網路及其他二類業務 (如 ATM、Frame Relay、VPN、ITSP)。目前日本國際及長途公司正在推行 MY LINE 服務 (即預約登記服務)，該公司亦不例外。
2. 介紹該公司 IP 整合性服務業務，包括網路電話服務 ITSP: Internet

Telephone Service Provider)、國際網路電話清算中心(Clearing House)、IP/VPN(IP 虛擬私人公司網路)及 IP 整合服務之營運模式。另為配合 IP 創新服務的提供,日本亦積極投入 IPv6 的相關技術研發,包括總務省 137 億日元的國家型計劃(含家用器具控制及 Japan Gigabit Network)及民營電信業者的 IPv6 OCN Tunneling Trials,以建立新一代 IP 網路的新應用服務。

(二)參訪 NTT 武藏野研究所

參觀 IP 整合性服務系統、IP/VPN 系統、寬頻核心接取網路、光傳輸網路及寬頻接取網路服務。

三、四月四日參訪武藏野三鷹有線電視公司及 KDDI

(一)參訪武藏野三鷹有線電視公司

會談主要內容為公司組織架構及營運方式、Cable 及 ADSL 上網網路架構及訂價方式。

(二)參訪 KDDI 公司

與下列人員進行會談：

IP 事業企畫部 部長 田代務

IP 國際事業部 次長 戶所弘光

常務取締役 國際本部長 松平恒和

專務取締役 事業推進本部長 酋原常榮

會談重點如後：

1. 介紹該公司業務策略、3G 行動電話之發展及公司營運模式。
2. 介紹寬頻業務發展趨勢,包括電信廣播匯流及寬頻內容營運模式。
3. 介紹日本語多語系網域名稱之技術發展趨勢。

四、四月五日參訪 JPNIC/JPRS 及 NTT ACCESS 研究所

(一)參訪社團法人 JPNIC 及 JPRS 公司

與下列人員進行會談：

JPNIC 副理事長 丸山直昌

JPNIC 理事 坪 俊宏

JPNIC 主任 松丸 真紀子

JPRS 取締役 堀田 博文

會談重點為介紹社團法人 JPNIC 成立、組織、業務、日本語多語系網域名稱發展政策、網域名稱爭議處理機制。

(二)參訪 NTT ACCESS 研究所

會談重點如後：

1. NTT ACCESS 研究所主要是研究先進的接取網路技術,以促進多媒體研究及發展,並促使多媒體社會的早日實現。
2. 目前該所已研發包括採用新網路架構技術(π 系統-ONU)、發展低成本光纖被動雙星型系統(PDS: Passive Double STAR)、發展低成本光纖電纜

及相關技術、較有效率之裝機技術、藉由光維運系統之發展有效降低成本及增進服務品質等五項技術，可使其光纖建設成本降至約與電纜相同，上述技術仍利用建築物之電纜配線連線，應屬於 FTTC (Fiber To The Curb) 或 FTTB (Fiber To The Building)，惟要再提升至 FTTH 很容易達成，目前在橫須賀 (YOKOHAMA) 已建置該系統。

五、四月六日參訪 JPIX、JIPDEC 及 JPCERT

(一)參訪 JPIX (JaPan Internet eXchange) 公司

會談重點為該公司組織、股東、日本網際網路網路交換中心之發展、網際網路環境、網路架構及收費方式。

(二)參訪財團法人日本情報處理開發協會所(JIPDEC: Japan Information Processing Developing Center)

與下列人員進行會談：

常務理事 山鳥雄嗣

情報安全局對策室次長 關本 貢

情報安全局對策室次長 高取敏夫

會談重點如後：

1. 日本情報處理開發協會(相當於我國的資策會)為營造電子商務環境目前正推動網路安全 (security) 及個人隱私 (privacy) 二方面認證機制,在網路安全部分該會正積極參考 ISO/IEC17799 標準建立 ISMS (Information Security Management System) 適合性評價制度,預計明年七月實施。
2. 對用戶隱私權保護方面,該會正推動實施隱私權標章認證系統 (Privacy Mark Award System),以 OECD 電子商務政策保護綱領為基礎,訂定標章核發程序及審查標準,目前正積極與各國洽商相互認證機制 (該會已與美國 BBB Online 達成標章相互認證)。

(三)參訪社團法人 JPCERT/CC(Japan Computer Emergence Response Team /Corordination Center)

會談重點如後：

1. 日本網際網路緊急應變中心 (JPCERT/CC) 相當於國內 TWCERT 功能,其組織為非營利社團法人,1996 年 10 月 1 日由通產省捐助基金成立,目前中心人員共十二人 (技術人員 8 人)。
2. 日本對分散式攻擊 (DDoS) 仍欠缺法令可以管理。去(2000)年全日本入侵事件共 2002 件正逐年快速增加中,足見各國應加強網路安全事務及建立跨國合作,以奠定電子商務之安全環境。

參、考察心得：

一、考察總務省(日本郵電省於 2001 年 1 月 1 日改制歸屬總務省)：

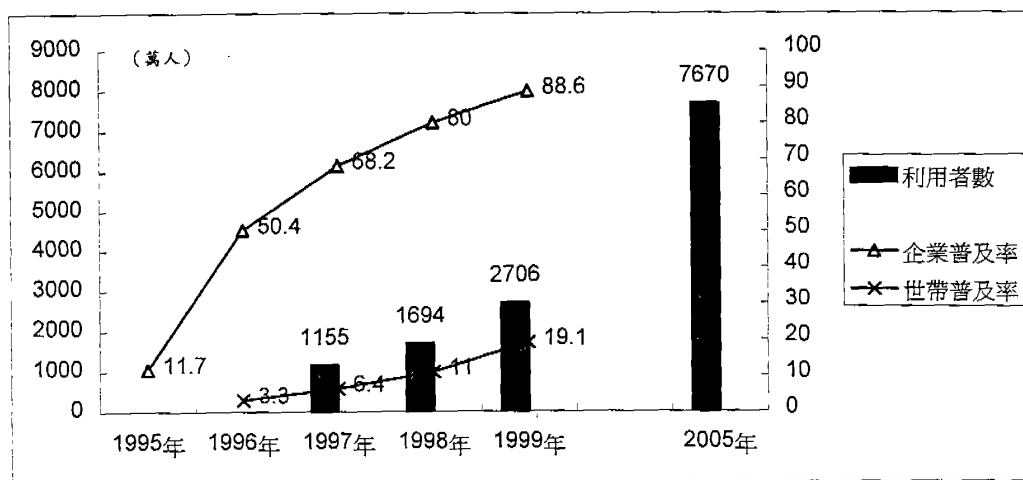
- (一) 日本 GIGABIT 網路 (JAPAN GIGABIT NETWORK) 是以用戶光界面接取網路方式，透過 ATM 骨幹網路連接，並以 IPv6 OVER ATM 方式完成建構，提供超高速資訊公路平臺及各種先進寬頻網路應用服務之研發，目前計有 49 個接取點，用戶接取速率為 50~600Mbps，已提供政府、民間及學術單位研發使用，預計 2005 年用戶接取速率可達 10Gbps、骨幹網路速率為 10Tbps。
- (二) 對特殊二類電信業務之管理須申請許可，申請只須書面審查，無須現場審驗，作業時間約十五天，截至目前尚無審查不核准案例，對外資之管理須先申請許可，另須聘技術主任二人。其電信法 (38 之 3 條) 規定第一類電信事業須與語音單純轉售之特殊二類業者互連，營業額達到一定標準之特殊二類須繳普及服務基金。
- (三) 申請一般二類電信業務僅須核備即可，對國際電話卡、網路咖啡店及公用電話 (例如旅館之粉紅色電話) 不須申請一般二類執照，僅須負通信保密及保護消費者義務。對 0204 智慧型付費語音服務 (日本稱 NTT DIAL Q2 服務) 提供者不須申請一般二類執照，對內容之管理由業者自律，即由公益法人「全日本電話語音協會」(網址：WWW.NLS.OR.JP) 審查管理內容。
- (四) 考慮網際網路寬頻內容之流通及發展，對網路內容採業者自律方式不作管理，亦無強制內容分級制度及標示，但對廣播內容則加以管理。

二、日本網際網路市場發展現況與趨勢：

(一) 整體市場發展概況

1、上網人口成長狀況

根據日本郵政省的統計分析，1999 年日本全國上網人口為 2,706 萬人，約佔其全國人口的 21%，至 2000 年九月中旬，日本全國上網人口已成長至為 2,942 萬人，約佔其全國人口的 24%，日本郵政省並預估日本全國上網人口數至 2005 年將近 8000 萬人 (目前預估至少為 7760 萬) (視圖一)。



(圖一)

資料來源：日本郵政省版通信白皮書

2、日本 IT 主要領域市場規模與預測

綜合日本野村總和研究所等研究單位針對 2000 年底日本的日本 IT 市場主要領域進行的市場規模及趨勢分析，及日本總務省於今年（2001）三月份對日本現階段 IT 業者的營運現況的產業調查，及針對對 2005 年日本 IT 市場產值的成長預估，以下將就日本寬頻上網、ASP、數位內容（digital content）等產業發展進行說明：

(1) 寬頻上網市場—普及至 1000 萬個家庭（視表 1-1）

2001 年將是寬頻市場起飛的一年，至 2005 年連網家庭將達 3000 萬戶，其中 1000 萬戶家庭將使用中高速連網服務，而 ADSL 與 Cable Modem 上網將會普及。

類別		2000 年	2005 年	年平均成長率	目前最新戶數
ISDN	用戶數 (萬)	1000	---	---	
	金額 (億日圓)	---	---	---	
ADSL	用戶數 (萬)	1.7	2777	277%	至 2001/02 用戶數已達 6 萬 9 千戶
	金額 (億日圓)	5	642	261%	
FTTH	用戶數 (萬)	0	2304	--	自 2001/03 推出，目前用戶數已達 700 戶
	金額 (億日圓)	0	929	--	
Cable Modem	用戶數 (萬)	62.5	3956	148%	
	金額 (億日圓)	138	1323	157%	
FWA (註一)	用戶數 (萬)	0.1	728	374%	
	金額 (億日圓)	0	238	385%	

(表 1-1)

資料來源：NRI 及日本總務省

註一：FWA：Public Fixed Wireless Access Networks

(2) 數位內容市場——線上遊戲市場規模達 2500 億日圓 (視表 1-4)

隨著網際網路與中高速上網的普及，數位內容市場市場的規模擴大是可預期的，線上遊戲、線上音樂、線上出版等市場規模至 2005 年將分別達 2500 億日圓、950 億日圓、130 億日圓。

類 別		2000 年	2005 年	年平均成長率	備 註
線上遊戲	億日圓	20	2500	263%	
線上音樂	億日圓	6	950	275%	
線上出版	億日圓	10	130	167%	

(表 1-1)

資料來源：NRI 及日本總務省

(3) ASP 市場——藉由中小企業在資訊化方面的投資，市場規模達 3300 億日圓 (視表 1-3)

日本 ASP 市場藉由中小企業資訊化投資的增加，至 2005 年市場規模將擴增至 3300 億日圓。

類 別		2000 年	2005 年	年平均成長率	備 註
網際網路用戶數	百萬人	19	43	118%	15-59 歲以家中 PC 上網
ISP	億日圓	7900	12992	110%	
ASP	億日圓	--	3322	--	

(表 1-3)

資料來源：NRI 及日本總務省

(4) PDA 市場——隨著無線上網功能的加強，出貨量達 350 萬台 (視表 1-5)

未來 PDA 隨著上網功能的強化，2005 年全球出貨量將達 1900 萬台，其中日本市場為 350 萬台。

類 別		2000 年	2005 年	年平均成長率	備 註
PC	百萬台	114	177	109%	全球需求量
PDA	百萬台	9	19	116%	全球出貨量
行動電話	百萬台	412	719	112%	全球產量

(表 1-5)

資料來源：NRI 及日本總務省

3、日本政府推出國家資訊化法案，增加國際競爭力

相較於美國的通訊建設，費用低廉又快速，而日本卻是又昂貴又慢，日本高昂的電信通訊費用，成為日本發展網際網路的主要障礙，也令許多大企業也擔心日本的發展會阻礙了他們的競爭力，而要求日本政府鋪設高速光纖網路，以推動網路的普及化，根據 CNET 的報導指出，為此日本政府已擬定國家資訊化的法案大綱，希望能夠在 2005 年之前超越美國，成為全球資訊科技的第一強國，這項新法案也建議政府提供一般民眾有關資訊科技的訓練及提升資訊科技專家的品質。另外，日本政府還考慮推出一種「資訊科技憑證(IT voucher)」，根據媒體的報導指出，凡是年滿二十歲的公民都有資格獲得價值約五十五美元(六千日圓)的憑證，可以用於抵付上電腦及網際網路教學課程的費用（本法案已於 2000 年底送日本國會審議）。

三、窄頻上網市場發展現況與趨勢

(一) 日本窄頻業者經營現況

雖然日本上網人口一直保持樂觀的比例成長，同時日本政府也配合 ISP 業者的需求，加快修正其相關的法令的限制，但日本高昂的電信通訊費用一直是日本發展窄頻網際網路的主要障礙，以 2000 年為例，根據日經 Market Access 的調查，日本主要 45 家 ISP 業者的撥接用戶數在 2000 年 9 月底已合計突破 2000 萬戶（同時期日本上網人口約 3000 萬，日本郵政省資料），根據 Yahoo! JAPAN 旗下 Internet Guide 2001 MAY 於 03/16/2001 所公佈的市場調查發現，主要 45 家 ISP 業者中的前十大 ISP 業者的撥接用戶數即達 1,686 萬戶，幾佔該窄頻市場 3/4 強。

根據 Yahoo! JAPAN 前十大 ISP 業者的調查發現，該十大業者中近半數為有生產電腦產品的 IA 家電集團，例如：富士、NEC、Sony 及 Panasonic 四大集團，而其中由富士投資的 @nifty 及 NEC 投資的 Biglobe 兩家 ISP 公司的用戶數合計就超過 800 萬戶（@nifty: 450 萬戶；Biglobe: 356 萬戶），若再加上 Sony 的 So-net（161 萬戶）及 Panasonic 的 Panasonic Hi-Ho（91.6 萬戶）則超過 1000 萬戶，分析其原因，主要在於這些業者將其電腦產品與上網服務的行銷做整合，除藉由電腦價格優惠來提升其上網業務的競爭力與吸引力外，更結合其電腦經銷通路為其上網業務拓展的據點，成為其成功的關鍵。

目前日本大多數窄頻業者的服務申請都不需支付設定費，以其前十大業者來說，也只有用戶數排名第九的 (Plala) 公司於非促銷期間，要求客戶必須支付 2000 丹的申裝費；至於在每月上網費用的收取上，如同中華電信 (Hinet)，日本業者也各自規劃了不同的優惠方案，但整體來說彼此差距都不大，就其前十

大業者的方案為例大致分為以下三種：

1. 月租費 300-400 丹型，每月可有 1 小時免費上網時數。
2. 月租費 800-1400 丹型，每月平均可有 4 小時免費上網時數。
3. 月租費 2350-2500 丹型，每月則可有 10 小時免費上網時數。

值得一提的，各家業者無論客戶選擇其何種方案，各家業者不同方案免費時數外的超時費用的收費是相同的，簡單的說月租費與超時費用是不相干的，而各家業者的超時收費，平均都在 8 - 10 丹／每分鐘。

免費電子郵件服務 (POP3 模式) 已成為窄頻上網的基本配置，目前日本業者均會提供用戶一個帳號，及平均 10MB 的信箱容量，但隨著電子郵件的廣泛使用，以及影音檔案的日益增加，各業者為滿足客戶需求，也提供用戶可依需求額外增購郵件帳號及信箱容量，以其前十大業者所提供的電子郵件服務的郵件帳號而言：用戶每增加一個郵件帳號的月租費大約在日幣 200 至 300 丹左右，設定費平均大約在日幣 300 丹左右（免設定費已逐漸成為趨勢），通常業者僅供用戶增設 3 - 5 個郵件帳號，但排名第四的 DION 用戶可增設高達 29 個帳戶，而 (Plala)、DTI 及 ASAHI (分別排名第八、九及第十名) 則已取消該限制；再比較各家信箱容量，除 NEC、OCN (排名第三) 及 Panasonic 不提供用戶付費擴充外，其它家用戶大多可以 5MB 月租費日幣 250 丹擴充其信箱容量，為了提升競爭力，(Plala)、DTI 及 ASAHI 則提供其用戶信箱容量無上限的超值服務。

免費個人化網頁已逐步成為各業者的加值服務的主要內容，以日本前十大窄頻業者來說，已有八家業者提供用戶免費的 5 -15MB 個人化網頁 (Home Page) / 網路硬碟，而所有業者均提供用戶依各自需求可付費擁有或擴充該項服務，平均來說，每 5MB 容量的月租金大約在日幣 500 丹上下。

日本企業一向標榜客戶第一，其 ISP 業者在客戶服務方面，也均規劃有客服中心，提供用戶各項服務申請及申告，雖然各業者的客服中心均為全年無休式，但包括前十大業者在內，其客服時間卻非 24 小時制，一般而言，在正常上班日 (週一至週五) 為早上九時至下午九時例假日則大多至下午六時左右。

在用戶各項服務的付費方式上，由於用戶可直接透過網路直接申請 / 更換各業者的服務 (日本業者均有免費的上網服務光碟提供民眾索取)，因此，絕大多數的業者都規定用戶必須使用信用卡繳付各項費用，此項硬性規定，除提供業者對使用者身份的認證保障外，相對的，也同時能省卻用戶每月繳費的程序。

(二) 日本國十大窄頻 (傳統) 接取服務提供廠商概況

至 2001 年二月份, 日本國內提供用戶窄頻 (電話撥接) 方式上網的 ISP 業者數共有 49 家, 在今年 3 月份, Yahoo! JAPAN 旗下 Internet Guide 2001 MAY 對這些業者營運內容進行了一項市場調查, 其調查項目包括了: 會員數、基本服務費用、免費電子郵件、個人化加值服務及客服機制等, 以下將就其前十業者 (依用戶/會員數) 之各項數據做一綜合圖表比較。

排名	公司名稱	會員數	主要股東	基本服務費用/月	費用電子郵件服務		免費個人化網頁	必須用信用卡付費	客服中心
					帳號	信箱容量			
1	@nifty www.nifty.com	450 萬 2001 年 2 月底	富士	不需設定費 (1) 月租 1000 丹, 3hrs 免費。 (2) 月租 2500 丹, 10hrs 免費。 超時一律: 10 丹/分鐘。	標準 1 個帳號 每追加 1 個月租費 200 丹, 免設定費, 最多增加 5 個, 設定費 500 丹/個。	標準為 20 MB 每追加 5MB 月租 200 丹, 免追加設定費, 可無限增加。	標準為 10MB, 可付費追加 20MB 以內, 每單位 (5MB) 月租費為 200 丹。追加超過 20MB 以上的空間, 每單位 (10MB) 月租費 400 丹, 最多追加 140MB, 無需設定費。	是 申請服務及每月各項服務費用	每日 9:00-21:00 除公司內部施工外, 全年無休
2	BIGLOBE www.biglobe.ne.jp	356 萬 2001 年 2 月底	NEC	不需設定費 (1) 月租 400 丹, 1hrs 免費。 (2) 月租 1000 丹, 3hrs 免費。 (3) 月租 2500 丹, 10hrs 免費。 (4) 月租 3500 丹, 15hrs 免費。 超時一律: 10 丹/分鐘。	標準 1 個帳號 每追加 1 個月租費 300 丹, 最多增加 4 個, 設定費 500 丹/個。	標準為 20MB 不可增加。	標準為 10MB, 可付費追加 20MB 以內, 每單位 (2MB) 月租費為 80 丹。最多追加 50MB, 無需設定費。	是 申請服務及每月各項服務費用	週一至週五 09:00 - 22:00 例假日 13:00 - 18:00 服務申請 24小時全年
3	OCN www.ocn.ne.jp	200 萬 2001 年 2 月底	NTT-C	不需設定費 (1) 月租 400 丹, 1hrs 免費。 (2) 月租 880 丹, 3hrs 免費。 (3) 月租 2350 丹, 10hrs 免費。 超時一律: 10 丹/分鐘。	標準 1 個帳號 每追加 1 個月租費 250 丹, 最多增加 3 個, 設定費	標準為 5MB 不可增加	標準為 10MB, 不可付費追加。	是 申請服務及每月各項服務費用	週一至週五 09:00 - 22:00 例假日 09:00 - 15:00
4	DION www.dion.ne.jp	175.5 萬 2001 年 2 月底	KDDI	不需設定費 (1) 月租 1200 丹, 4hrs 免費。 (2) 月租 2350 丹, 10hrs 免費。 (3) 月租 4700 丹, 10hrs 免費。 超時一律: 10 丹/分鐘。	標準 1 個帳號 每追加 1 個月租費 250 丹, 最多增加 29 個, 免設定費	標準為 3 MB 每追加 1MB 月租 50 丹, 最多增加 47MB 免設定費。	標準為 5MB, 可付費追加 1MB 月租費為 50 丹。最多追加 95MB, 無需設定費。	是 申請服務及每月各項服務費用	全年無休 09:00 - 21:00
5	So-net www.so-net.ne.jp	161 萬 2001 年 2 月底	Sony	不需設定費 (1) 月租 300 丹, 1hrs 免費。 (2) 月租 1400 丹, 5hrs 免費。 (3) 月租 2400 丹, 10hrs 免費。 超時一律: 10 丹/分鐘。	標準 1 個帳號 每追加 1 個月租費 300 丹, 最多增加 5 個, 設定費 500 丹/個。	無上限設定, 但每二個月會通知用戶後, 進行清空作業。	標準為 5MB, 不可付費追加。	是 申請服務及每月各項服務費用	週一至週五 10:00 - 22:00 例假日 10:00 - 21:00

資料來源: Yahoo! Internet Guide May 2001

排名	公司名稱	會員數	主要股東	基本服務費用/月	費用電子郵件服務			免費個人化網頁	必須用信用卡付費	客服中心
					帳號	信箱容量				
6	ODN www.odn.ne.jp	130萬 2001年 1月底		(1) 月租 400 丹, 1hrs 免費。 (2) 月租 1400 丹, 5hrs 免費。 (3) 月租 2350 丹, 10hrs 免費。 (4) 月租 4700 丹, 20hrs 免費。 超時一律：10 丹/分鐘。	標準 1 個帳號 每追加 1 個月月租費 250 丹, 最多增加 4 個, 設定費 150 丹/個	標準為 5 MB 每追加 5MB 月租 250 丹, 最多增加 15 MB, 無需設定費。	標準為 10MB, 可付費追加 1MB 月租費為 500 丹。無追加上限, 免設定費	標準為 10MB, 可付費追加 1MB 月租費為 500 丹。無追加上限, 免設定費	是 請服務及每月務費	週一至週五 09:00 - 21:00 例假日 09:08 - 18:00
7	Parasonic Hi-Ho www.home.hi-ho.ne.jp	91.6萬 2001年 1月底	Parasonic	(1) 月租 300 丹, 1hrs 免費。 (2) 月租 1200 丹, 4hrs 免費。 (3) 月租 2350 丹, 10hrs 免費。 超時一律：9 丹/分鐘。	標準 1 個帳號 每追加 1 個月月租費 200 丹, 最多增加 3 個, 免設定費	標準為 10 MB 不可增加。	標準為 10MB, 可付費追加 1MB 月租費為 500 丹。無追加上限, 免設定費	是 請服務及每月務費	週一至週五 09:00 - 21:00 例假日 09:00 - 18:00	
8	www.plata.or.jp	63萬 2001年 2月底		(1) 月租 200 丹, 無免費時段, 一般時段：10 丹/3 分鐘 減價時段：10 丹/4 分鐘 (2) 月租 800 丹, 3hrs 免費。 (3) 月租 2400 丹, 10hrs 免費。 超時一律：8 丹/分鐘。	標準 1 個帳號 每追加 1 個月月租費 200 丹, 無限增加, 免設定費	無上限設定	標準為 15MB, 可付費追加 追加每單位 (5MB) 月租費為 500 丹。最多追加 35MB, 需設定費 500 丹/次	需付費 申請費：500 丹 每單位：5MB, 月租費 500 丹 最多可申請 4 個單位, 共 20MB	是 請服務及每月務費	週一至週五 12:00 - 21:00 例假日 12:00 - 19:00
9	DTI www.dti.ndl.jp	28.1萬 2001年 1月底		規定之設定費：2000 丹 但當促銷給予免費 (1) 月租 500 丹, 2hrs 免費。 超時：8 丹/分鐘。 (2) 月租 1380 丹, 5hrs 免費。 超時：8 丹/分鐘。 收費上限：2980 丹 (含月租金)	標準 1 個帳號 每追加 1 個月月租費 300 丹, 無限增加, 設定費 500 丹/個	無上限設定	標準為 50MB, 可付費追加, 免設定費 追加每單位 (5MB) 月租費為 180 丹。無追加上限,	否 可使用其它方式付款	週一至週五 11:00 - 19:00 例假日 11:00 - 17:00	
10	ASAHI www.asahi-net.or.jp	22.1萬 2001年 1月底		不需設定費 (1) 月租 450 丹, 5hrs 免費。 (2) 月租 800 丹, 5hrs 免費。 超時一律：5 丹/分鐘。 (3) 月租 1700 丹, 15hrs 免費。 超時一律：3 丹/分鐘。 (4) 月租 1950 丹, 無限上網	標準 2 個帳號 每追加 1 個月月租費 100 丹, 無限增加, 設定費 300 丹/個	無上限設定	標準為 50MB, 可付費追加, 免設定費 追加每單位 (5MB) 月租費為 180 丹。無追加上限,	否 可使用其它方式付款	全年每日 10:00 - 17:00	
小計		1685.8萬戶								

四、寬頻上網市場發展與趨勢

日本政府為了在 5 年內得以成為全球最先進的資訊技術應用國家，特於 2000 年 7 月成立「IT（資訊技術）戰略本部」主導日本資訊技術（IT）應用與發展，並於 2000/11/06 針對建設日本 IT 發展環境發表了「IT 國家戰略草案」，該草案重點政策主要為下列四點：

- (1) 超高速網路的基礎建設及競爭策略。
- (2) 建立適於電子商務發展的環境。
- (3) 落實電子化政府。
- (4) 強化人才培育。

基於日本網際網路發展環境建設遲緩的主因在於通信費用高昂及由諸多違反公平競爭的法令限制所造成，因此該 IT 戰略的核心主要著重在未來日本應重新檢討法規制度、對於違反公平競爭的行為建立監督機構，以促進網際網路的普及，其中 IT（資訊技術）戰略本部在網路基礎建設方面，將藉由法律制度面的重新檢討、再建構及監督機構的成立，建立一個可以提供廉價上網的環境並計劃在 5 年內，建立一個可以 30M-100Mbit/秒高速上網的網路環境。

1、日本寬頻上網服務現況整體比較分析

資料來源：

PC月刊 2001May, YAHOO! JAPAN 月刊 2001May

列表彙整：ETwebs 企劃處

	ISDN	ADSL	CATV	FTTH (光纖)	電力線 (實驗中)
戶數	★★★★★ 1000萬戶(2001/01)	★★ 6.9萬戶(2001/01)	★★★★ 62.5萬(2000/12)	● 700戶(2001/02)	-----
速度	★★★ 下載速度均為64kbps	★★★★★ 下載：640kbps-1.6Mbps 上傳：250kbps-500kbps	★★★★● 下載：256kbps-1Mbps 上傳：128kbps-512kbps	★★★★★ 下載：100Mbps 上傳：100Mbps	★★★★★● 下載：3Mbps 上傳：3Mbps
涵蓋區域	★★★★★ 日本各大都市、縣/廳所在，均可申請服務	★★ 目前僅有東京23個區、大阪及名古屋等幾個大都會區有服務	★★★ 日本目前有130家有線電視業者於全國主要的都市提供服務	★ 至2001年3月止，僅有東京都涉田區及世田谷區一部份	----- 目前僅由北海道及九州的電力所實驗中
費用	★★★ 申裝費用：2-3萬日圓 月租金：6000日圓以內	★★★★★ 申裝費用：3600日圓 月租金：6000日圓上下	★★★★ 申裝費用：4萬1仟日圓 月租金：5200日圓	說明：★★★★★ 申裝費用：3萬9仟日圓 月租金：6100日圓以內	----- 申裝費用：未定 月租金：5100日圓以內
10MB檔案 下載比較	★ 需時：20分48秒	★★★★★ 需時：53秒	★★★ 需時：2分36秒	★★★★★ 需時：0.8秒	★★★★★ 需時：53秒

2、日本 ISDN 市場風光不再：

日本的寬頻網路服務濫觴於1999年末其電信業者所推出的ISDN服務(由NTT率先推出)，雖然在申裝價格及月租費上並不經濟(相較於一般撥接)，但基於寬頻影音內容市場的逐漸成熟(例如：線上遊戲、動畫及VOD等)，以及該服務主要硬體建設與撥接服務設備相仿，用戶(尤其家庭戶)並不需做額外的配置，即可立即享用該項服務，因此普一推出，即快速攻佔原先的撥接市場，於一年的推廣期間用戶數即接近千萬。

然而，在去年隨著日本政府相關法令的修正，以及各類型寬頻服務相繼推出，無論是在傳輸速度、申裝價格、月租費用上，ISDN已逐漸喪失其競爭優勢，尤其是去年下半年度才推出的ADSL服務，其高速下载頻寬實對ISDN形成更嚴重的威脅，可以預見的，目前仍居日本寬頻龍頭的ISDN業，將成寬頻的明日黃花，而逐步淡出日本寬頻市場。

3、急起直追的日本 ADSL 市場

在日本政府大力改革及企業主全力投入，日本寬頻服務正迅速普及，尤其以 ADSL 服務為例，自去年（2000）秋季開始商業化服務以來，服務的區域快速擴增，根據日本總務省的調查，從去年 10 月~11 月，ADSL 使用者數即急速攀升，至今年（2001）1 月初，已突破 1 萬條線路（1.6 萬戶），至 3 月底止用戶較 2 月份的 3.4 萬戶增加約一倍達 6.9 萬戶，目前每個月的申請人數還以數千人的驚人速度增加中。

NTT 公司提供的 ADSL 服務「Flats • ADSL」對於日本 ADSL 寬頻風潮的興起可說是居功厥偉，由於 NTT 公司佔有本身是電話線路兼 ADSL 服務提供者的優勢，因此在日本 6.9 萬 ADSL 用戶中，NTT 地方公司所推出的「Flats ADSL」用戶即佔了 2.4 萬戶，預期 NTT 未來在日本 ADSL 市場上的佔有率仍將持續擴大。

ADSL 服務之所以能短期間在日本寬頻市場異軍突起，其因素除了產品本身功能優勢，各業者爭相在價格上競爭也是其能極速成長的原因，以下將歸納分析其成功條件：

（1）穩定的高速下載／上傳速度：

雖然日本在 ADSL 試辦時期所提供的速率最高下傳 512kbit/秒，上傳 224Kbit/秒，然而在 NTT「Flats • ADSL」推出營運後，NTT 將其「Flats • ADSL」下傳速率提昇至 1.5Mbit/秒後，為了競爭壓力，使得其他業者不得不跟著提供相對應服務，使得傳輸最高速率下傳為 1.5Mbit/秒，上傳 512Kbit/秒，成為 ADSL 服務的一般標準。

（2）價格優惠，加入門檻低：

目前在日本申請 ADSL 服務的初期申裝費用僅需 3,600 日圓，用戶每個月通信費用僅需 4600 日圓（用戶需另行支付上網費用），但目前大多數 ADSL 業者都有提供所謂的上網套餐，用戶每個月上網費用僅需 1000 日圓，使得用戶每月費用得以維持在 6,000 日圓以內，同時各業者將下傳速率提昇至 1.5Mbit/秒的這股風潮也影響到 ISP 業者的經營，各業者提供相對應增值服務，但費用卻無法轉嫁與消費者，形成實質上降價，造就 ADSL 無法可擋的魅力。

（3）完善的備援方案：

另一方面，在日本當用戶申請 ADSL 寬頻服務時，業者尚提供用戶頗外的

電話門號（目前最多可搭配 3 個門號），使得用戶不致因上網而造成無法使用電話對聯絡，同時業者更附帶提供用戶一組電話撥接帳號，方便用戶於 ADSL 網路中斷時，仍可透過電話撥接進行上網，此一備援措施／服務亦是 ADSL 能廣受青睞的原因之一。

4、成長驚人的日本 CATV 寬頻上網服務

(1) 市場現況：

日本研究機構曾在去年 11 月調查網友使用寬頻上網的意願，當時有 35.2% 的人想裝 CABLE，23.5% 的人想裝 ADSL，22.8% 的人想裝 FTTH。可見 CABLE 上網在日本的認知度及需求度都非常的高，去年底的用戶數已超過 62.5 萬戶。事實上，從 2000 年第一季的 21.6 萬戶成長到去年底的 62.5 萬戶，足足成長了 300%，其成長速度之快，十分驚人。

目前用戶數已突破 60 萬戶的日本 CATV 寬頻上網服務，雖然在傳輸速度上不及 ADSL，但由於超過 200 家日本有線電視業者在日本各主要城市／地方（共 47 個縣市）的市場普及率，加上用戶端相關硬體設備的擴充需求不高（僅需增置網路卡），同時用戶除了上網不需支付電話撥接費用外，尚可觀看業者所提供的網路增值服務（如：VOD、各類演唱會網路直播及卡拉 OK 等）及有線電視，大大提升市場競爭力，但相對的申請該服務的初期高裝置費用（約 4 萬日圓上下，主要在 Cable Modem 的費用）及高達 5000 日圓的月租金，是其最大致命傷，根據日本知名市調公司 Gartner Group 的研究指出，未來日本 CATV 寬頻上網服務的月租費若不能降至 3000 日圓以內，將很難再提升其市場普及率。

(2) Case Study：武藏野三鷹有線電視公司營運介紹：

武藏野三鷹有線電視公司於 1995 年 11 月正式成立，1996 年 7 月開始正式提供武藏野及三鷹市兩地區居民有線電視的服務，並於次年（1997）開始提供其用戶寬頻上網的服務，該公司主要股東有四家，此外，武藏野及三鷹市的市政府也各自投資了該公司一千萬日幣。

武藏野及三鷹市兩地區的家庭總戶數為 14 萬戶，目前該公司計有 42000 戶收視戶（市場佔有率達 33%），其中 8000 戶亦為其 Cable Modem 的上網用戶，去年底（2000），因應市場競爭需求，該公司也推出 ADSL 的服務。此外，在企業用戶的經營上，除對一般商業戶的開發不遺餘力，更因與地方政

府的良好／特殊關係，武藏野及三鷹市兩地區的中小學、圖書館及市政府都已經成為該公司的忠實客戶。

在 ADSL 及 Cable Modem 的市場競爭方面，基於違反公平競爭原則的有線電視法，同一行政地區（縣／市）僅有一家有线電視公司可提供服務，但相對的在日本政府對其 IT 產業相關法令的鬆綁後，以武藏野及三鷹市兩地來說，就有 6 家 ISP 業者提供 ADSL 的服務，由於 Cable Modem 及 ADSL 在服務費用上沒有明顯的差異，因此該公司 Cable Modem 的競爭壓力（包括新增的 ADSL 服務），主要來自於其它 ISP 的競爭。

依武藏野及三鷹市的當地市調，當地居民普遍對 ADSL 的接受度高於 Cable Modem，且從今年初開始，當地 ADSL 的成長幅度即不斷快速提升，因此，該公司的市場經營策略，除妥善發揮其獨有的有線電視各項視訊資源及引以為傲的客服機制外，更與 NTT 公司在 Last Mile 方面密切合作（採租賃或買斷的方式），以強化其市場競爭力。

5、寬頻上網的子彈列車——日本光纖到戶服務 FTTH

在 NTT 推出「Flats・ADSL」服務，帶動日本寬頻上網風潮之際，日本有線寬頻網路公司(usen)於 2001 年 3 月 1 日起提供光纖到府的低廉高速上網服務，造成市場上極大震撼，相較於 NTT 2000 年開始的 10Mbps ADSL 服務收費 13000 日圓的價格，有線寬頻網路公司(usen)針對家庭用戶提供的 FTTH 上網服務最高可達 100Mbps，且每個月的費用僅 4900 日圓即可無限上網，雖然通信速率為其 10 倍，但價格卻只有 NTT「Flats・ADSL」的一半，對於市場的衝擊自不在話下。

就一般性的認知而言，提供『光纖到戶』服務的成本是相當昂貴的，但對於光纖技術先進的日本來說，成本並非最主要的考量。而 NTT 在光纖技術的研發及應用，更是箇中翹楚，如光纖製造、光纜合成、光熔接器、光發送／接收器、量測設備及施工設備等，均是朝降低成本的方向研發，有些項目在全球供應上也有 30%-40%以上的佔有率。

因此，整體而言，NTT 在提供 FTTH 服務時，相對成本比其他國家低了許多，未來在提供普遍性服務時，在價格上也會具有相當的競爭力。

雖然有線寬頻服務公司(usen) FTTH 初期的服務地區，基於相關法令限制及

工程建設因素，只限於東京的涉谷及世田谷（大部份）兩區（目前用戶數已達 700 戶），但如同前述，在日本 IT 戰略本部的法令修正後，從今年 10 月份開始，有線寬頻服務公司(usen)的 FTTH 服務區域將擴大至東京 23 區及日本全國政令指定的各都市，據日本有線寬頻服務公司(usen)的初步估計，至 2003 年客戶數可達 100 萬戶以上。

在有線寬頻服務公司(usen)提供光纖到家服務的同時，其在寬頻內容服務的「BROAD-GATE 01」亦同時啟動，每個月只要多支付 300 日圓用戶即可享有這項增值服務，使得用戶除可上網及收發電子郵件外，還可享有多達 40 項的寬頻內容增值服務，包括 Video on Demand、音樂下載、演唱會現場實況轉播、通信卡拉 OK、線上遊戲等收費服務，從單純上網及收發電子郵件來看，可說幾近於免費的這種服務型態對於需要向第一類通信業者租借線路的其它 ISP 業者形成一大威脅。

6. 未來寬頻黑馬——電力線路寬頻上網

就在日本各大電信及有線電視業者成立的 ISP 競相攻佔寬頻市場的同時，日本電力公司亦不甘屈居人後，推出運用透過電力線進行上網的服務，用戶祇要透過原本的電力配置系統，即可享有上下傳輸均達 3Mbps 的寬頻上網功能，雖然目前該項創舉仍處於實驗階段（目前正由北海道電力及九州電力進行實例實驗），且存在受限於家電用品產生之干擾（如微波及高週波等），但依日本相關科技技術的前進，及家電業者 IA 家電的協力推動，此一運用傳統電力線路上網的技術一旦成熟，勢必對日本寬頻市場造成新的衝擊，甚至可躍居成寬頻市場的龍頭，成為最大的 ISP 業者。

7. VOIP 可能成為 INTERNET 的 KILLER APPLICATION

NTT COMMUNICATION 預估到了 2003 年，VOICE IP 的產值會有 1400Billions，大約會是 data 產值的 7 倍，在傳統上國際間的傳輸都事先透過 local operator 經 long distance operator 再連到國際線路，電信業者投資在實體網路建設的經費非常龐大，如美國每年花在地區性網路建設的成本約在 20billion 左右。但是到了 Internet 時代，VOICE 同樣可以在 IP 的網路上傳輸，甚至可 BY PASS 掉國際、長途及 LOCAL 的 CARRIERS, 直接做點到點的傳輸。

為此，NTT COMMUNICATION 在今年初特別成立了一個名為「CLEARING HOUSE」的專案小組，經營 VOIP 及 VPN 的市場業務。它是以日本為中心點，形成一個總

HUB，再用高速頻寬分別連到其他世界各地。目前前半年的營運狀況良好，NTT 總部很希望它們能進快發展，搶佔國際市場先機。

8. IPV4 資源將盡，IPV6 粉墨登場

全球 Internet 產業發展蓬勃，IPV4 的 address 用量即將耗盡，NTT 預測，依照目前的成長率來推估，再 2007 年時就會用完，因此 IPV6 的發展和實驗一直是 NTT 積極進行的工作要項。

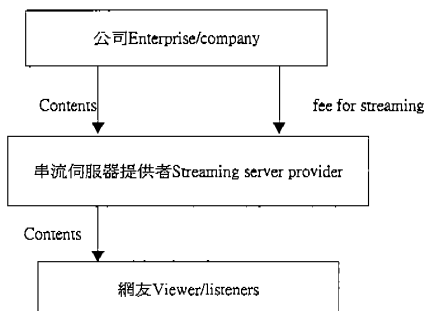
IPV6 被定義為下一代的 Internet 通訊協定的標準，且是雙向 device to device 的 Model，其特性如下：

- (1) 無限的 addresses 資源
- (2) 標準化的安全機制和 QOS 的功能
- (3) 擁有 Auto-configuration 及 Plug & Play 的功能
- (4) 可進行 Multicast 之應用

NTT 早在 1996 年就開始研究 IPV6 的網路看未來可能的營運架構，並在美國和歐洲之間架起實驗的通道。1999 年 12 月開始進行消費者服務面的實驗研究，推出「TUNNELING」的計劃，主要是用 IPV6 over IPV4 的架構，在使用者和網管中心之間分別裝置 Capsulate 和 de-capsulate 的設備，設備之間即為所謂的「TUNNELING」，可將 IPV4 和 IPV6 作一個整合性的傳輸。NTT 並準備在今年下半年進行商業化的服務，提供給企業用戶使用。

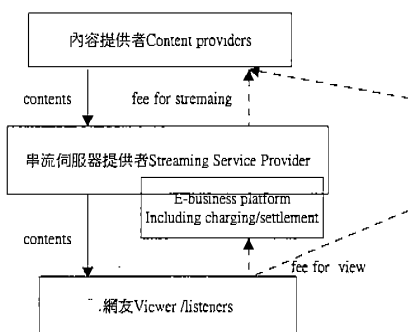
9. 日本現階段寬頻內容 (Streaming Media) 加值收費模式分析

TYPE1:



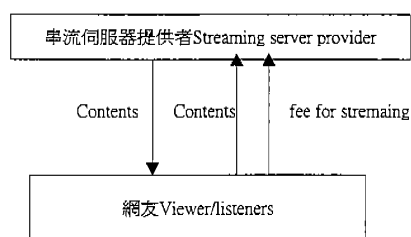
日本各大公司、企業利用 Streaming 進行其產品、公司形象的宣傳及促銷。由公司提供相關產品訊息、教育訓練、公司簡介與串流伺服器提供者製作成 Streaming Media 予網友觀看。並由 Server Provider 向企業索取 Streaming 製作及儲存費用。

Type2



內容提供者 (ICP) 提供 Streaming 服務，並對網友進行使用者收費動作，但基於各主客觀因素，此一模式目前在市場上仍不成熟。

Type3



C B C (Personal Casting)

網友透過串流伺服器提供者所建立的平台與其他網友進行各項串流媒體資源的分享，但基於法令限制 (如：著作權法)、技術完備度及使用者認知等內外條件的影響，市場仍有待開墾。

五、日本電信市場發展現況與趨勢

(一)、日本行動電話市場概況

可上網行動電話 i-Mode 在 1999 年 2 月問世後，日本行動電話開始迅速普及，1999 年日本行動電話用戶較 1998 年成長 20.2%，達 5,685 萬人；2000 年 7 月份已達 6,023 萬戶，較去年同期成長 19.2%。日本的上網手機快速成長，加上一般電話申請費很貴，促成手機快速成長。根據路透社報導，日本 1.267 億的人口中，有將近一半的人擁有手機（平均約每兩人就有一支手機），普及率達 47.5%；全球最大的通訊市場美國，普及率只有 32%。

在日本，使用蜂巢式手機的人有 5,438 萬、使用 PHS 的達 586 萬人，NTT 移動通信網(NTT DoCoMo)主導了市場，7 月份佔有率達 53.8%，到 12 月份時已達 65%。在日本，每 5 隻手機中，就有一隻提供直接上網服務；7 月份使用手機上網的人次達 1,272 萬人。由於用戶使用成長快速，交換機當機的情形，容易因某些特定的時間而發生，尤其明年將進入 21 世紀，有些人乾脆就以手機拜年，取代過去寄賀年片的習慣。預料在元旦期間，電話和電子郵件通訊量，可能達到平常的 30~40 倍，為了避免交換機當機，日本各大手機服務公司，都決定比照往年採取通信量限制，尤其是 NTT Docomo 公司，由於最近用戶成長快速，對於跨年度的關鍵二十分鐘內，決定把通話流量降低 13%，並呼籲大家在尖峰時段少打，免得交換機再度當機，影響所有用戶的使用權益。而依據野村總合研究所調查顯示，

15~59 歲人口的 7 成已是行動電話或 PHS 用戶的行動通信市場未來收入來源將依賴行動商務及行動廣告，以彌補通話費用收入的減少；而至 2005 年用戶數將達 8120 萬，使用者支付給行動通信業者的費用總額將擴增至 7 兆日圓。

日本通信市場規模預測					
類別		2000 年	2005 年	年平均成長率	備註
專線	金額(億日圓)	9823	14656	108%	
IP-VPN	金額(億日圓)	40	1451	205%	
行動通信	用戶數(萬)	6640	8120	104%	用戶(含 PHS 用戶的支付費用)
	金額(億日圓)	42250	70550	111%	

(表 1-2)

資料來源：NRI 及日本總務省

(二)、日本電信業的版塊重整

國際間電信自由化的浪潮，同樣席捲了日本電信產業。尤其這兩年的變化已經對日本的電信市場產生了根本的改變和影響，其中最關鍵的兩個事件，為電信巨人 NTT 的解構和 KDDI 的合併誕生。

就最新的市場規模來看，依序為NTT 營業額 10 兆 8150 億丹，營業利益 8350 億丹；KDDI 營業額 3 兆 200 億丹，營業利益 700 億丹；日本電信營業額 1 兆 4000 億丹，營業利益 1250 億丹；TNet 營業額 2000 億丹；及 IDC 營業額 750 億丹。

目前最新的業者營業範疇如下：

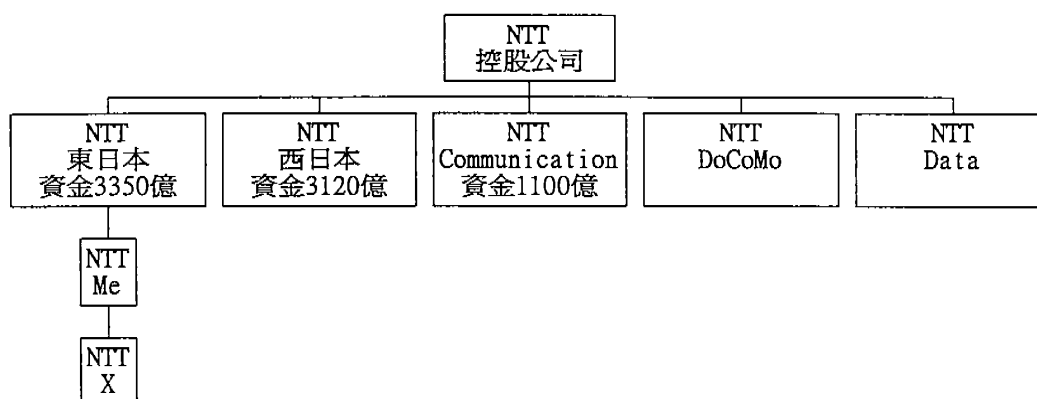
項目 \ 業者	NTT	KDDI	日本電信	電力系
市話	NTT 東日本 NTT 西日本	參入預定	參入預定	東京電話
長途國際	NTT Communication	KDDI	日本電信	
網際網路	OCN	DION	ODN	
行動電話	NTT Do Co Mo	Au ezweb	Jsky	
PHS		DDI		

(三)、NTT 巨人的解構開啟了市場自由競爭之門

長久以來 NTT 為日本電信市場最大的獨占經營者，但在過去十年間，隨著 NTT 企業法及通信商業法的通過，這個具半官方色彩的電信公司已漸漸民營化，並肩負促進市場競爭的使命。

當初在 1990 年，日本郵政省警覺到雖然通信商業法已通過了五年，但對於市場自由競爭的刺激仍十分有限，因此，主張將 NTT 解構為數個小的事業單位。但這項主張卻遭到政治力阻擋，它們認為時間太短當然看不出成效，應該再觀察五年再說。最後，直到 1997 年 7 月 1 日，NTT 才正式如同 AT&T spin off 7 個 Baby Bell 一般，解構為 NTT 東日本、NTT 西日本、NTT communication 及 NTT 國際電話四個事業單位。

其後，由於市場競爭的需求，NTT 的組織在 2000 年正式調整成如下的經營架構，由 NTT 控股公司下設五個主要的 SBU 營運，事業單位之間不能進行交叉補貼。



另外，NTT 的營收結構近年來也有了顯著的變化，在 1995 年時，固網收入佔 73.3%，行動通訊收入佔 15.9%，網路相關收入佔 10.8%，但到了 2000 年，固網收入僅佔 39.3%，成長率僅 6%，而行動通訊則成長到 36%，成長率為 25.4%，同時，網路相關收入也成長到 24.7%，成長率為 25.6%。足見未來日本的電信市場，行動通訊和網路相關收入將主掌大部分的營收來源。

(四)、KDDI 的誕生宣告了「後競爭時代」的來臨

2000 年 10 月 2 日日本電信史上最大的 MERGE 案宣告完成，由第二大的長途電話公司 DDI、國際電話公司 KDD 及行動通訊公司 IDO 三家公司共同合併，成立了 KDDI 總合通訊社。它們並宣示了強烈的企圖心，要挑戰電信巨人 NTT。

合併後的 KDDI 營業額達 3 兆日圓，約為 NTT 的三分之一，這使得日本電訊業界正式進入三強鼎立的競爭格局--NTT、KDDI 及 JR 系統的日本電信。

KDDI 的營業範疇相當廣泛，包括市內電話、長途電話、Internet (DION) 行動電話及 PHS 服務等，成為除了 NTT 以外，唯一的全方位電信服務提供者。它們希望提供更多的加值性且具價格競爭力的服務給消費者。

KDDI 的核心產品服務主要圍繞在三個面向：Mobil Business, IP Business, 及 Network Business。Mobil Business 主要 focus 在行動上網，行動 IP Solution 及 ITS 等服務；IP Business 主要 focus 在 Terabit IP Network, ISP service、IDC 及 ASP 的服務；而 Network Business 則 focus 在高速傳輸的全球網路，seamless 點對點服務等。

在營收結構方面，依據 2003 年的統計資料，67%的營收來自於 Mobil

Business 的業務，24.6%來自 Network Business & IP Business，8.3%為其他收入。該公司預估在 2005 年，有 69.2%的收入來自 Mobil Business，30.8%來自 Network Business & IP Business。可見行動通訊業務在未來五年內仍是 KDDI 的營運重心。

KDDI 為了因應無線上網的龐大商機，特別在 1999 年 2 月推出 EZWeb 的服務，同時，為了和 DoCoMo 的 I Mode 一別苗頭，目前市場上已有超過 3000 萬的手機上網用戶，KDDI 擁有約 800 萬戶，同時市場上以每天 7 萬個用戶的速度增加中。

KDDI 在電信市場的未來發展策略方面，提出了一個「Perseus」（宙斯之子）計劃，主要強調 KDDI 有能力完成一個超高速（GPPS→TDPS）的 IP Platform，未來不管在 MPLS、QOS、VOIP、IP Multicast 之應用，或是在各種 last mile 的 solution，以及消費者的各種娛樂、購物、設群集保全的需求，通通落實在這個 IP 平台上傳輸及交易，目的是讓「every thing over IP」。

其次，KDDI 和 TOYOTA 策略聯盟合作發展一套 Intelligent Transport System Project（ITS），準備整合通訊和運輸系統，未來駕駛人可藉著這套系統，享受路線導航、停車輔助、行動辦公室和安全通報的服務。

（五）、三 G 行動通訊的市場戰火方興

日本早在 1979 年級推出汽車行動通訊的服務，1985 年第一次電信自由化時，NTT 即準備推出商用行動通訊服務，次年 IDO（日本移動通信）也推出同樣的服務，直到 1992 年 NTT 移動通信網（Do Co Mo 前身）獨立後，才邁開提供第二代行動通訊服務的步伐。

日本在行動通訊標準的選擇上是相當封閉的，第一代時，日本是使用 NTT 及 TACS 標準，美國用 AMPS，北歐用 NMT，到了第二代時，日本用 PDC，美國用 CDMAONE IS-136，歐洲用 GSM。至於第三代的標準，日本主要分為兩大陣營，NTT 和日本電信採用 W-CDMA 標準，KDDI 則採用 CDMA2000 的標準，而歐洲用 W-CDMA，美國用 CDMA2000 的標準。

日本目前行動通訊 6000 多萬戶的市場規模（包括 PHS 電話）中，NTT 約佔 57%；KDDI 約佔 23%；日本電信約佔 15%，其他佔 5%。

依據 KDDI 的說法，它們認為冒然從 PDC 直接 UPGRADE 到 W-CDMA 不但要投入大筆資金，還不一定就是終極標準，因此它們寧願保守一點，從 CDMA ONE 漸次升級到 CDMA2000，同時也可隨時留意市場的變化，爭取應變時間。

至於各家推出 3G 的時間表如下：

3G 業者	推出時程	使用標準
NTT Do Co Mo	2001 年 5 月	W-CDMA
KDDI	2002 年 9 月	CDMA2000
JAPAN Telecom	2002 年 6 月	W-CDMA

(六)、NTT「I-MODE」大放異彩，「FOMA」蓄勢待發

隨著行動通訊市場的蓬勃發展，各家業者也紛紛推出 Mobil content 提供訂戶更多的增值服務，讓訂戶隨時隨地可以黏在手機上。其中最知名的要屬 Do Co Mo 推出的「I-MODE」服務，而 KDDI 在這方面亦不惶多讓的推出 EZWeb 的服務，其中最受歡迎的內容包括新聞、氣象報告、運動、訂位服務、銀行轉帳、股市訊息、行動商務、鈴聲下載及卡拉 OK 等單元。J-PHONE 則推出 3J-SKY 的服務，其中最具特色的內容為遊戲和音樂下載單元。

到目前為止，市場上無線上網的相關網站總計有超過 25000 個左右。

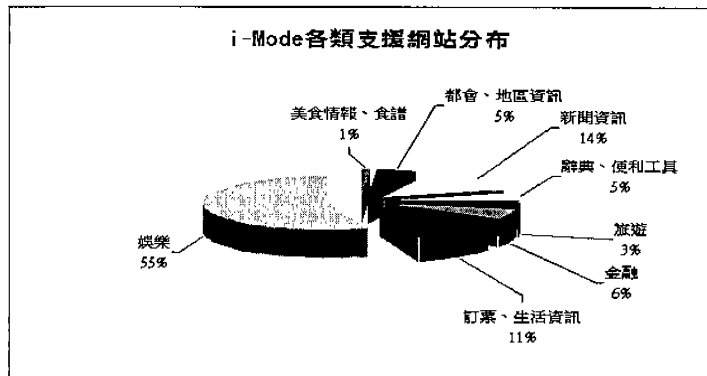
「I-MODE」的服務特色

1、內容規劃

(1)、上網提供之內容服務

1. 交易服務：行動銀行、購票、信用卡帳單查詢、行動交易(如購買股票)、購書、生活保險行動 ATM
2. 娛樂：卡拉 OK、FM 廣播、網路遊戲、占星
3. 資料庫：餐廳指南、字典查詢
4. 其他：新聞、天氣預測、交通路況、旅遊資訊

支援 I-Mode 的網站，依業者是否與 DoCoMo 簽約，又區分為可從手機選單上直接進入（主題網站）以及輸入網址兩種方式。前者目前已增加至一千多家，且根據 DoCoMo 發佈的資料，其中娛樂類型網站佔有 55%、線上交易類佔 20%、資料查詢類為 11%、餘 14% 為即時新聞類型網站。



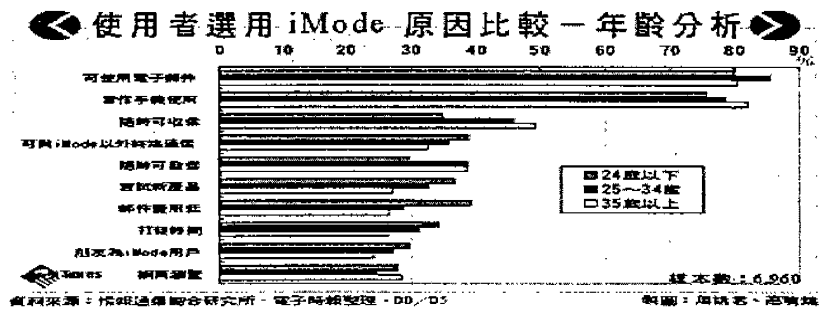
Source: NTT Docomo, 全球電子報整理 2000/8

對照前述情報通信總和研究所的調查結果可知，娛樂型服務乃為 iMode 的魅力焦點。對此，DoCoMo 早有體悟，未來新推出的服務類型，除了結合衛星定位系統，推出行人導航與車用導航服務之外；也積極加強娛樂類的增值服務。配合頻寬與傳輸速率提昇，以及 iMode 手機在記憶卡容量提昇、添增抽取式記憶卡配備，音樂傳輸、遊戲下載與電影預告片，將是 i-Mode 新娛樂型增值服務的重心。

2、用戶使用情形分析

(1) E-mail 使用情況高

根據日本情報通信總合研究所調查，用戶在各類功能上的使用時間比為電話：郵件：網站=4：4：2。I-Mode 手機以連網功能為特色，但使用者在實際應用上，最常使用的仍是電話功能，其次為收發電子郵件，網頁瀏覽使用時間相對較低。使用者選用 I-Mode 的理由（可複選），前 5 大因素中有 4 項都與電子郵件有關。其中比率最高的是「可使用電子郵件」，有高達 82.4% 使用者便是為此而選用 I-Mode。排名第二的是「當作手機使用」，所佔比率亦有 77.4%。其次依序為「隨時可收信」、「可與 iMode 以外終端通信」、「隨時可發信」，所佔比率都在 30~40% 之間。至於「網頁瀏覽」所佔比率則為 26.4%，相對較低。畢竟手機螢幕較小，用於瀏覽網頁，遠不如 PC 或 PDA 方便。



二、i-mode 內容規劃與使用情形分析

(2) 娛樂與遊戲類網站最受用戶青睞

i-mode 用戶使用手機上網服務流量狀況表

項次	Docomo Portal				非官方
	娛樂+遊戲	資訊	財經服務	其他	網站
佔總用戶流量百分比	40%	20%	10-15%	10%	15%

*Business Week /Dec 2000

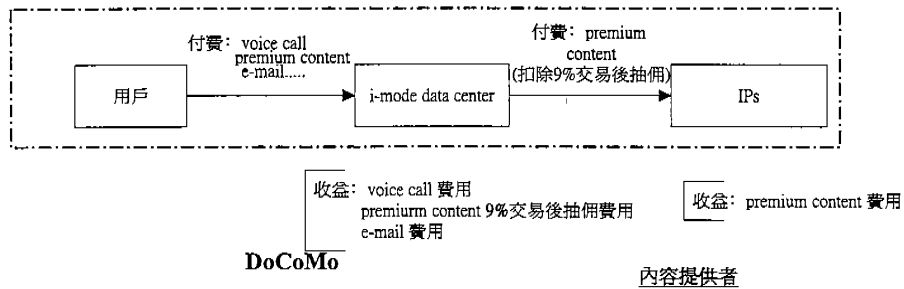
顯見 I-mode 用戶利用手機上網瀏覽網站，以娛樂及遊戲類型網站之比例最高，而且用戶多停留在 Docomo 官方網站，只有約 15% 的流量到非官方的合作網站，這對於 Docomo 在電子商務及未來線上廣告方面的收入有直接的影響。

(3) 最常流連網站：手機/iMode 主題網站奪魁，音樂/鈴聲下載網佔其次

手機/iMode 主題網站奪魁，音樂/鈴聲下載網站緊追其後，超過 50% 的使用者，經常瀏覽「手機/iMode 主題」類型網站 (53.2%) 與「音樂/鈴聲下載」類 (50.5%)，而經常瀏覽「遊戲/運動」類網站的使用者比率，也將近 40%。

再其次依序為「檢索/連結」類 (32.9%)、「雜學/養成/占卜」類 (32%)。相形之下，「票務」、「線上銀行」、「線上購物」等交易類型網站，較不受青睞。除「票務」類型仍有 15.8% 的用戶經常瀏覽之外，其餘類型的比率均為個位數。由此得見，娛樂類網站較受 iMode 使用者青睞。

3、收費機制



- (1) 申請 i-mode 設定費：3,000 日圓，月租費 300 日圓。
- (2) 購買 i-mode 手機費：平均 1-2 萬日圓。
- (3) Docomo 要求付費網站內容提供者，每個月服務費用不可收取超過 300 日圓使用費。
- (4) 透過一戶一帳單的方式，代收用戶付費內容費用，再向內容提供者抽佣 9% 手續費。

4、i-mode 預期未來發展方向

1、運用 JAVA 技術，提昇手機上網的內容品質

目前 I-mode 僅能提供一些基本上網功能(上網、收發 mail)，在未來結合 JAVA 技術後，將可做到利用手機傳送信用卡卡號之安全電子商務 (Mobile Commerce)，困難度較高之遊戲以及新聞代理人 (NEWS AGENT) 等等功能。

2。手機廣告的出現

隨著行動電話網路服務用戶增多，其中蘊含的廣告商機逐漸顯現。DOCOMO 即宣佈與 NTT Advertising、電通等公司合作，成立行動電話廣告公司 D2 Communication。

i-mode 每日網站目錄的 page view 即達到 4,000 萬網頁的高流量，可粗估為 1 個 imode 使用者 1 天連線閱覽 4-5 個網頁，如此龐大的用戶數加上高點閱率，無疑成為有力的宣傳媒體。在 2000 年秋季，I-mode 使用者點閱某廣告，其後閱讀該廣告相關網頁時的通訊費用，將由廣告內容提供者負擔。如此使用者的通訊費可望大幅降低，甚至可能出現格極低或免費的行動電話。

(二) 「FOMA」將帶領 3G Content 的浪潮

Do Co Mo 繼 I-MODE 之後準備在 3G 時代推出 FOMA (Freedom of Mobil multimedia Access) 的服務。由於 NTT 採 W-CDMA 的標準，下載速度最快可達 384K，不但能傳達高品質的語音資料，可能進一步提昇 I-MODE 的功能，傳輸高畫質的影音多媒體內容，提供消費者全新的寬頻上網經驗。

此外，Do Co Mo 針對 3G 市場的需求，開發出許多應用軟體服務，包括個人應用、娛樂應用、商業應用及家庭應用。未來訂戶可以用手機上網直接連到家中的冰箱、查看食物存量的狀況，然後直接在手機上向商家購買商品。

FOMA 的主要特色如下：

- (1) 強化 I-MODE 既有的各項服務功能
- (2) 提供訂戶無線影像和音樂的加值服務
- (3) 能進行影像視訊會議
- (4) 提供寬頻高速的 Internet 接取服務
- (5) 擁有語音和封包同步傳輸的功能

(七)、搶佔國際市場積極提昇競爭力

日本在電信自由化之後，市場面臨激烈的競爭，戰火也早已由島內延燒至海外各地。事實上，國際市場對電信技術和電信服務也有相當程度的需求，因此，各家電信業者莫不積極展開海外市場佈局和擴張行動。

NTT 不但在海外各地設有分公司，如歐洲、巴西、美國、英國、中國大陸等，同時更積極展開海外電信公司的投資行動。在美國方面，除投資 AT&T Wireless Group 16% 的股權，亦出資 42.3% 與 AOL (40.3%) 合資成立 AOL Japan 公司。但其與美國另一家 Voices Tream Wireless 公司的合作則不順利。

在歐洲方面，NTT 除曾投資巴西 Telesdeste Celluer 公司外，去年更投資 5000 億日元入股荷蘭的 KPN Mobil (佔 15%)，及 1944 亦日元入股英國 Hutchison 3G 公司 (佔 20%)，足見其切入歐洲市場的企圖心。而在亞洲方面，除今年投資和信電訊 20% 股權，早在 1999 年底及投資了和記電訊 19% 的股份，揭示進軍

中國大陸的動向，另外，最近和南韓電信的投資案，也達成了10%的協議。

項次	內容
合作	JIMM(和全球8主要公司合作,包括英國vodafone公司)
聯盟	微軟、昇陽、symbian、3com
投資(創投)	美國: Advent(East)、Century(Midwest)、Ignite(West) 亞: Java Fund 日: Mobile Internet Fund
國外分公司	DoCoMo Europe 98/10 DoCoMo Brazil 94/4 DoCoMo USA 99/11 DoCoMo Finance(UK) 00/7 Beijing China office 00/7
海外投資	Brazil (Telesdeste Cellular) 9/98 95M BRL Hong Kong (KTCL) 12/99 410M US\$ The Netherlands (KPN Mobile) 7/00 4.0B EUR(15%股權) U.K. (Hutchison 3G UK) 7/00 1.2B AOL Japan Unit (42.3% 股權) AT&T Wireless Group Inc. (16% 股權) 和信電訊 (20%股權) 南韓電信 SK Telecom 洽談中(10%股權) 利用持有少數股權的方式擴展海外事業版圖。
顧問	U.S. To be formed in fall 2000

註: 透過 CDMA 技術, 手機用戶將可接收連續影像, 同時也可以接收數倍於今日的數據傳輸速度, 取得網際網路資訊。

KDDI 雖未在海外進行大規模的投資行動, 卻也很快整合了原本 KDD、TDD 和 DDI 的既有資源, 並陸續在韓國、上海、香港、新加坡、台灣、越南、菲律賓、泰國、馬來西亞、印度、澳洲、歐洲及美國成立分公司。

而日本電信由於擁有 AT&T 和 British Telecommunication 這兩家 big name 的外資股權, 不但能引進歐美經驗強化營運能力, 同時亦有助於未來在國際市場的開疆拓土。

(八)、政府著手研議「雙網合一」(電信+有線電視)的可能性

IT 技術的革命和創新, 已經從商業層面影響到了社會和經濟的層面, 也即將改變大眾的生活型態。2000 年 7 月日本政府成立「資訊技術策略總部」和「資訊技術策略委員會」, 目的在研討如何結合及運用各項資源, 讓日本迅速邁入資訊社會。

最近一年, 資訊技術策略委員會討論的主題主要放在是否該讓電信網路和有線電視網路整合成一條通往家戶的資訊高速公路。

睽諸世界各國的經驗，除了重新賞識廣播電視和電信網路相關法律外，更試圖整合出一個“hybrid”的服務，以因應新資訊時代的來臨，該委員會所建議的政策走向如下：

- A、發展一套系統，能夠讓電信服務和廣電服務法規相容於一條傳輸網路之上。
- B、加快超高速骨幹網路的建置，及數位廣電服務標準的設立，以完成必要的基礎建設架構。
- C、政策支持相關產業的發展，特別是平台建置和平台服務的相關行業。
- D、針對資訊傳遞方面的議題，規劃新的法規，以因應整合時代來臨，並給消費者一個健康的產業環境。
- E、創造一個內容生產者和內容提供者易於生存的產業環境。

六、其他日本網際網路相關機構簡介

(一)、JPNIC (Japan Network Information Center)

JPNIC 如同台灣的 TWNIC 一般，成立目的在管理和發放 DOMAIN NAMES 和 IP ADDRESSES，JPNIC 也針對 INTERNET 產業進行很多相關的研究和推廣工作。JPNIC 是在 1997 年成立，由科學技術廳、文部省、通產省和郵政省四個政府單位共同監管的非營利機構。

JPNIC 制定的 DOMAIN NAMES 型態主要分為三類：

- (1) 依組織型態劃分
 - CO (COMPANY)
 - GO (GOVERNMENT)
 - OR (FOUNDATION)
 - NE (NETWORK SERVICE)
 - ED (SCHOOL)
 - GR (ORGANIZATION)
- (2) 依地理區域劃分如 Chiyoda、Tokyo、JP
- (3) 依特定用途劃分

目前各類型 DOMAIN NAMES 的申請比例，以 co.jp 最高，佔 80.9%；其次是 ne.jp，佔 6.5%；及 or.jp 佔 4.6%。

日本 DOMAIN NAMES 的註冊是從 1996 年開始，每年都呈現 100% 的成長，

每月幾乎都會增加 10000 件以上，目前到 2001 年 4 月 1 日的註冊數已達 249475 件。

(二)、JPIX (Japan Internet Exchange)

JPIX 為日本個大 ISP 間網路互聯和交換中心，1997 年 7 月才正式成立，主要股東為 KDDI、JENS、日本電氣、東京電信及富士通。目前聯外頻寬的流量為 2Gbps，其中 88% 的流量都是連至美國。

JPIX 的客戶數約有 80 家，主要分為四大類：

- (1) 第一類電信業者：如 KDDI、TTNET、OMP 及日本電信
- (2) 第二類電信業者：如 NEC、SONY、IBM、DTI 及 CABLE 和 ADSL 業者
- (3) 媒體業者：日本經濟新聞社、日本特許情報機構
- (4) 外資投資的電信業者：PSINET、AOL、VUNET、Singtel、Teleglobe

由於目前機房所在地區已十分擁擠，無法再容納多的空間，未來 JPIX 已準備在其他地區擴建機房，包括東京郊區、名古屋及大阪等地。此外，JPIX 也積極提昇網路傳輸品質和速度，並對 IPv6 的發展密切觀察，以適時提供客戶最完善的頻寬管理服務。

肆、建議事項

- 一、日本雖然為電信自由化極早之國家，由於民族主義強烈，截至目前仍然為 NTT 公司之獨大及壟斷；我國電信事業之分類與日本極為相似，觀其對電信事業之管理部分與我國亦極相近，但對第二類電信事業之管理仍比我國鬆綁，亦有借鏡之處，或許是國情不同使然，國內今年七月將開放語音轉售業務，相關監理機制正規劃中，未來應配合修改電信法鬆綁對第二類電信事業之管理（例如不須現場審驗），亦可減少行政負擔之成本，以達簡政便民之效果。另日本對網際網路內容之管理係採業者自律方式，不強制管理，與電信總局八十七年之委外研究結論，「網際網路之管理機制應採低度管理」相近，相對於國內由於民意代表及網路文化社群的壓力，政府對網際網路內容之管理正擬定各種法規加以管裡，宜審慎為之，以免扼殺網路的發展。日本係由總務省及相關部會編列預算建構超高速資訊高速公路（GIGANET NETWORK），為其步入二十一世紀 e 資訊社會之先進實驗設施，值得國內建立超高速網路之參考。
- 二、日本行動電話用戶截至去年底為 5870 萬，預估再成長有限（最高預估 8000 萬），為增加營收及獲利，因此 NTT DoCoMo 二年前推出 I-mode 數據服務，截至目前為止 I-mode 用戶已 2100 萬（該公司總用戶數為 3800 萬），成為

世界獲利最高的行動電話公司。I-mode 的成功主要有三點：一、採用簡潔的 HTML 語言（已有 40000 個網站內容提供者）。二、Always On 操作簡便。三、採用數據量計費，費用合理低廉。目前類似 I-MODE 的用戶數已超過 3000 萬，每天仍以 7 萬人的速度增加，無線上網之普及不愧為日本邁入網路資訊社會最快速的方法。反觀國內行動電話數已達 1800 萬戶漸趨於飽和，如欲提升業者營收，實應推展類似 I-mode 服務之 GPRS 數據服務，惟 3G 與 GPRS 推出時程接近，業者亦怕投入成本無法回收，但提供之 GPRS 數據服務經驗亦可作為 3G 服務成功之基礎，建議業者仍可於大都會區先建置再視業務推展情形擴充，目前和信公司正與合作伙伴 NTT DoCoMo 研發將 I-mode 技術移植至歐規 GPRS 系統，相信未來用戶數據服務用量的提升，將使業者整體營收提高，加諸國內發達之 PDA 及手機製造技術，應可藉無線上網之普及，普化網路資訊社會。另 NTT DoCoMo 3G 服務的營運方式及管理，亦可作為本局未來監理及業者營運參考。

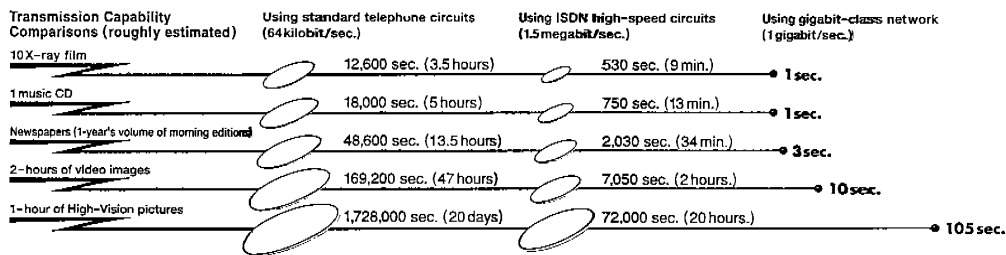
- 三、本次考察 NTT Communication 及 KDDI 公司，均將 IP 整合服務視為未來推展業務的重點之一，未來的網路不僅傳送網際網路訊務，還包括網路電話（ITSP）、影像等之整合性服務，傳統的電話網路服務層須要業者設定，未來 IP 整合網路用戶可經由網路控制層（第三層）自行設計，降低了許多創新障礙。由於 IP 的發展，據 NTT Communication 公司預測至 2003 年語音服務營收為數據服務之七倍（數據營收為 12.5%），以目前該公司數據營收只佔 0.4%，仍有相當大潛力。國內業者宜加強對 IP 新服務及數據增值服務之研發，該公司之 IP 營運模式亦可為重要參考。另國內對 IPv6 新應用服務之研究，除中華電信及教育部等投入少許經費研究外，亦欠缺整合單位，建議行政院國家資訊通信基本建設專案推動小組（NII）可擔任此整合角色，政府亦應投入更多經費研發 IPv6 技術及新應用服務，以因應下一代網際網路之來臨。

Japan Gigabit Network

— high-speed transmission of information

- Japan Gigabit Network (JGN) is an optical-fiber telecommunications network that makes high-speed information transmission possible. The gigabit-class network is 1,000 times faster than megabit, and 1,000,000 times faster than kilobit-class networks. For example, JGN is capable of transmitting ten X-ray film in one second or two-hours of video recording in ten seconds, making it one of the fastest telecommunications systems of its kind.
- Focusing on the research and development side of basic technologies to achieve an advanced information and communications society, the Telecommunications Advancement Organization (TAO) developed, and continues to maintain JGN. It is a nationwide, next generation, very high-speed telecommunications network that is made widely available for use at universities, research institutions, venture businesses, local governments, etc.
- Progressing towards the new age of "Gigabit" telecommunications network, JGN is widely used for research and development of very high-speed networking and high-performance application technologies. JGN is also expected to create new business opportunities and telecommunications services while contributing to the development of local communities.

NETWORK



● In the U.S., Vice President Al Gore unveiled the Next Generation Internet (NGI) program in 1997. This program was created on the understanding that an advanced information infrastructure is essential for improving the competitive strength of all industries in global markets. With a budget of 85 million dollars in fiscal year 1998, the high-speed NGI network has connected more than 100 nationwide sites, thus establishing a highly accessible testbed. For fiscal year 1999, there was and continues to be a demand for an even bigger budget of over 100 million dollars.

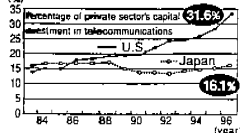
● Japan's Effort While Japan's telecommunications industry has grown rapidly in recent years, Japan has been surpassed by its U.S. counterpart in many fields such as private sector investment in telecommunications, the number of host computers connected to the Internet, and the market size of electronic commerce. Developing advanced research facilities that include network systems is crucial to promoting research and development of high-speed networking and high-performance application technologies. To this end, the Japanese Government allocated a 59.1 billion yen (562.9 million dollars: US \$1=105) supplementary budget in fiscal year 1998 and 1999 to the Ministry of Posts and Telecommunications. Financed by the Ministry, the TAO has designed and promoted JGN as a nationwide research and development facility. JGN is now accessible for research and development of very high-speed networking and high-performance application technologies until the end of fiscal year 2003.

Private Sector Investment in Telecommunications (1997)

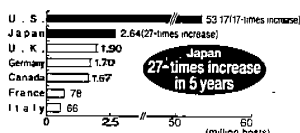


Source: 1999 White Paper-Communications in Japan

Investment in Telecommunications



The number of Internet hosts in G7 nations (January 2000)



Source: Network Wizards

E-commerce market size (1998)



Source: 1999 White Paper-Communications in Japan

Japan Gigabit Network Outline

JGN is the network designed for research and development of very high-speed networking and high-performance application technologies.

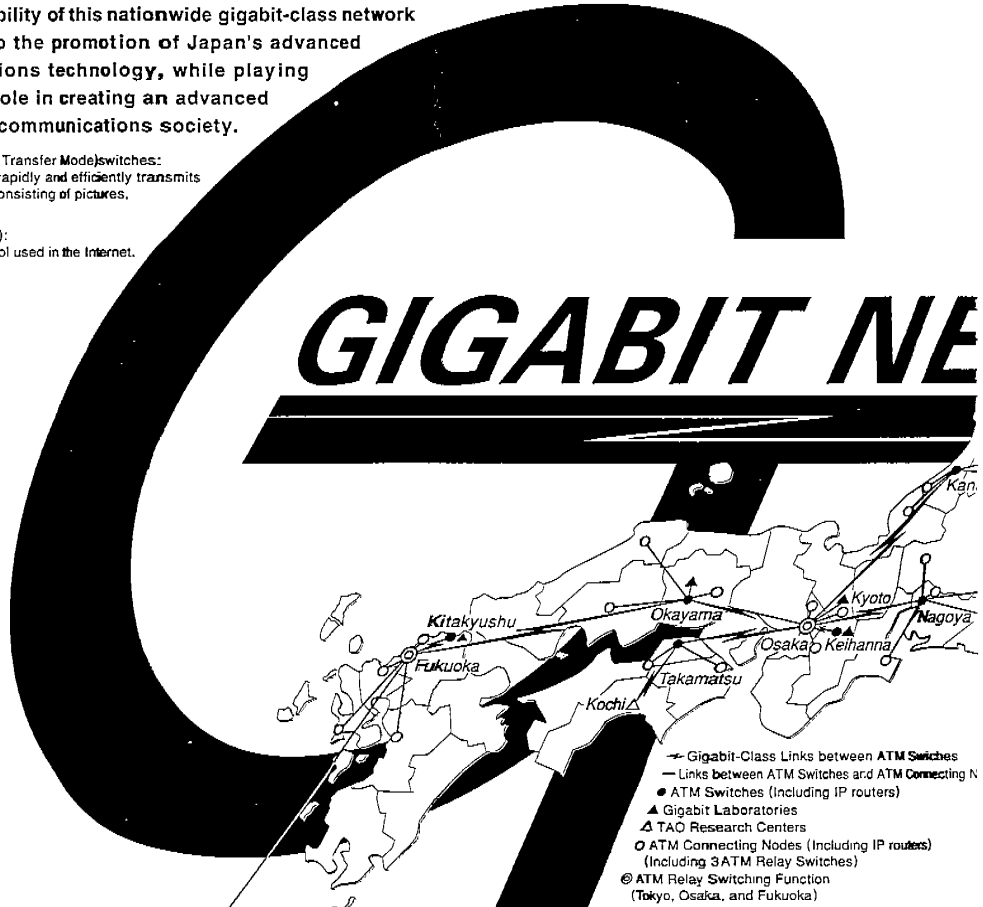
JGN consists of nationwide, high-speed, optical-fiber networks with ATM switches (Gigabit Network Link) and 5 Shared Use R. The ATM switches are located in 10 areas: Sapporo, Sendai, Tsukuba, Nagano, Kanazawa, Nagoya, Keihanna (Kansai Science City), Takamatsu and Kitakyushu, and are connected each other by very high-speed optical-fiber links (IP connection is also available). 39 nodes connected to the ATM switches allow access to researchers from anywhere in Japan. JGN is available to both public and private entities that conduct research and development of high-speed networking and high-performance application technologies.

The easy accessibility of this nationwide gigabit-class network will contribute to the promotion of Japan's advanced telecommunications technology, while playing a leading world role in creating an advanced information and communications society.

※1) ATM (Asynchronous Transfer Mode) switches: a switching method that rapidly and efficiently transmits multimedia information consisting of pictures, sound, data, etc.

※2) IP (Internet Protocol): a data transmitting protocol used in the Internet.

Gigabit Network	Gigabit Laboratories
10 POINTS	5 POINTS
Connected 10 ATM switches nationwide with an optical fiber network link.	Established 5 Gigabit Laboratories
	Installed 39 ATM connecting nodes nationwide, allowing easy access for researchers.

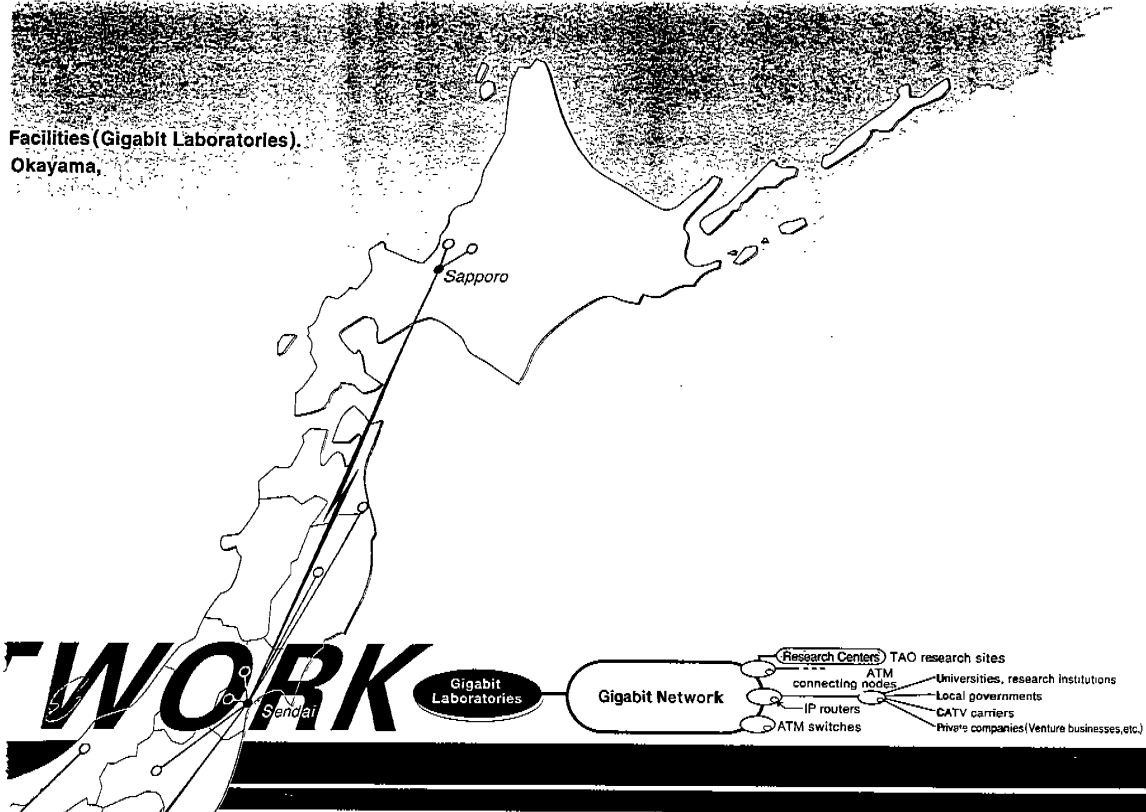


波 2.4 G
 Access: 500 ~ 600 Mbps
 Access point: 49 個 (今年達 64 個)
 Test platform: 2 校民間 且 学校 単位 使用 (Bed)
 ATM 全国 網 (動作 網 常)
 IPv6 over ATM 完成 完成。
 IPv6 今年 完成

035



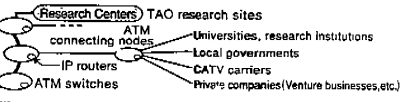
Facilities (Gigabit Laboratories).
Okayama,



WORK

Gigabit Laboratories

Gigabit Network



Newly established and accessible at five nationwide locations, Gigabit Laboratories support technological developments.

- ▶ Tsukuba, Keihanna, and Kitakyushu / These laboratories provide suitable environments for research in very high-speed networking and high-performance application technologies.
- ▶ Kyoto and Okayama / These laboratories provide excellent testing environments for optic telecommunications technology where optical-fiber networks are integrated and gigabit-class networks and information terminals are available.
- ※ With minimum expense for light and fuel, users are able to conduct their own research.

Locations with switches and connecting nodes

Hokkaido Area ● ATM switch: Sapporo ○ ATM connecting nodes: Hokkaido University Computing Center / Sapporo Information Network

Tohoku Area ● ATM switch: Sendai ○ ATM connecting nodes: Hachinohe Institute of Technology / Iwate University Media Center / Tohoku University Computing Center / Sendai City Information and Industry Plaza NeT U / University of Aizu

Kanto Area ● ATM switch: Tsukuba ○ ATM connecting nodes: Waseda University Global Information and Telecommunication Institute / University of Tokyo Intelligent Modeling Laboratory / University of Electro-Communications Information Processing Center / Yokosuka Telecom Research Park / Yamanashi Open Research Center

Shinshu Area ● ATM switch: Nagano ○ ATM connecting nodes: Niigata University Integrated Information Processing Center / Nagano City FULLNET CENTER / The Juridical Foundation of Matsumoto Software Development Center

Hokuriku Area ● ATM switch: Kanazawa ○ ATM connecting nodes: Toyama Total Information Center / Ishikawa High-Tech Conference Center / Information Processing Center Fukui University

Tokai Area ● ATM switch: Nagoya ○ ATM connecting nodes: Softopia Japan Center / Nagoya University Computing Center / Mie Prefectural College of Nursing / University of Shizuoka

Kinki Area ● ATM switch: Okayama ○ ATM connecting nodes: Kyoto University / Osaka University Computing Center / Nara Institute of Science Technology

Chugoku Area ● ATM switch: Takamatsu ○ ATM connecting nodes: Kagawa Creation of New Industries Support Center / University of Tokushima Faculty of Engineering

Shikoku Area ● ATM switch: Kitakyushu ○ ATM connecting nodes: Kyushu University Computing Center / Netcom Saga Association / Nagasaki University Information Science Center / KUMAMOTO INSTITUTE OF COMPUTER SOFTWARE, INC. / Asia-Pacific Multimedia Hub Center / Nago Multimedia Center (Plus 3 other ATM relay switches)

IP routers: installed at locations with ATM switches and connecting nodes.

Gigabit Laboratories					TAC Research Centers	
<p>Tsukuba Gigabit Laboratory http://www.tsukuba.tao.go.jp</p> 	<p>Keihanna Gigabit Laboratory http://www.keihanna.tao.go.jp</p>  <p>Keihanna Plaza Laboratory Building 3F</p>	<p>Kitakyushu Gigabit Laboratory http://www.kitaa.tao.go.jp</p>  <p>AMAA Pacific Import Mart Building 7F</p>	<p>Kyoto Gigabit Laboratory http://www.kyoto.tao.go.jp</p>  <p>TELEPORT Okayama 8F</p>	<p>Okayama Gigabit Laboratory http://www.okayama.tao.go.jp</p> 	<p>Makuhari Gigabit Research Center http://www.makuhari.tao.go.jp</p> 	<p>Kouchi Communication Traffic Research Center http://www.kouchi.tao.go.jp</p>  <p>Kouchi University of Technology Education and Research Building ASD, etc.</p>



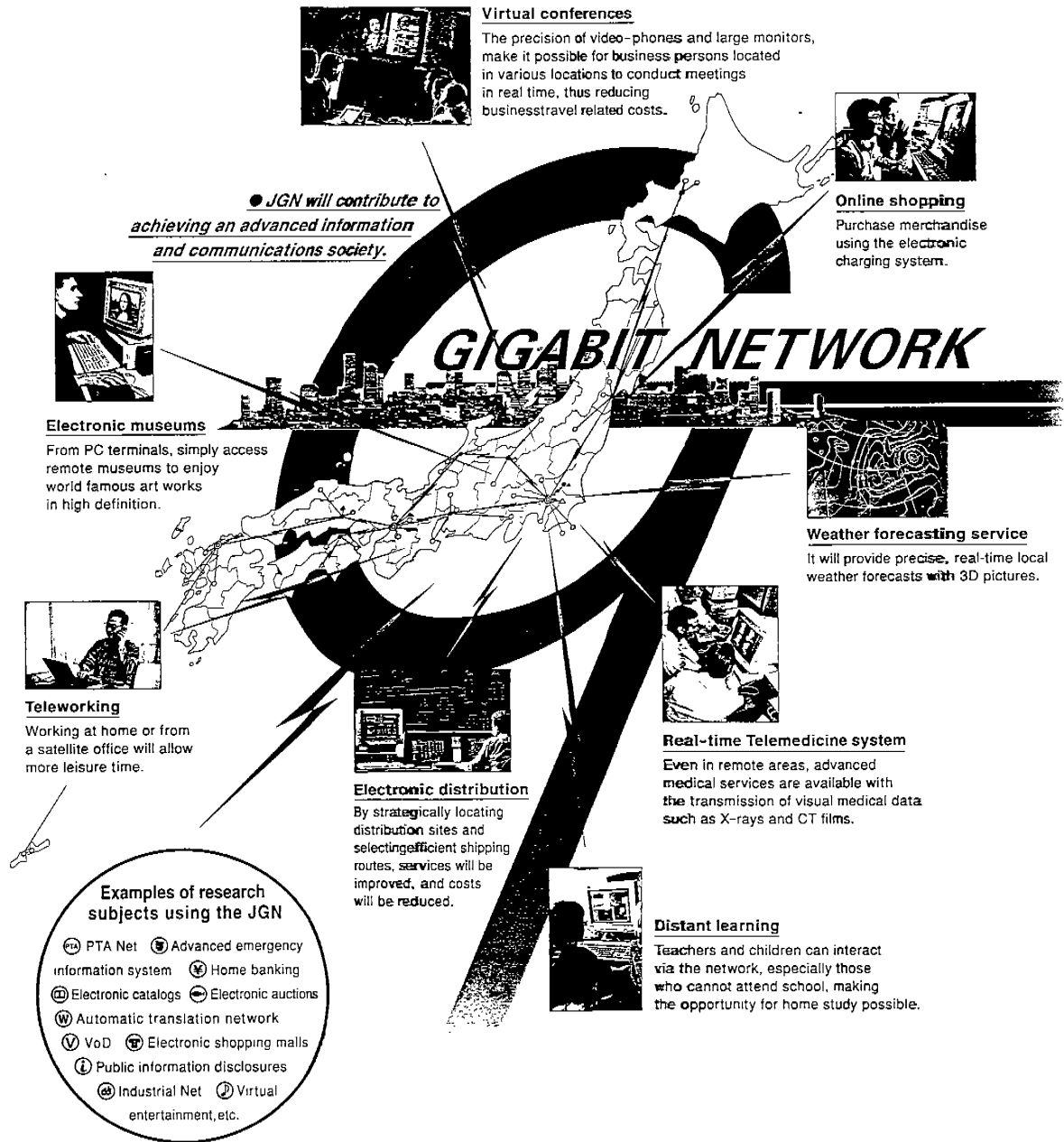
Japan Gigabit Network—with its tremendous potential

Using JGN, researchers can apply their ideas to various types of research.

Now, JGN can quickly transmit large-capacity multimedia information, such as highly-precise image information, to any remote area. JGN can also be widely used for research and development in various fields such as

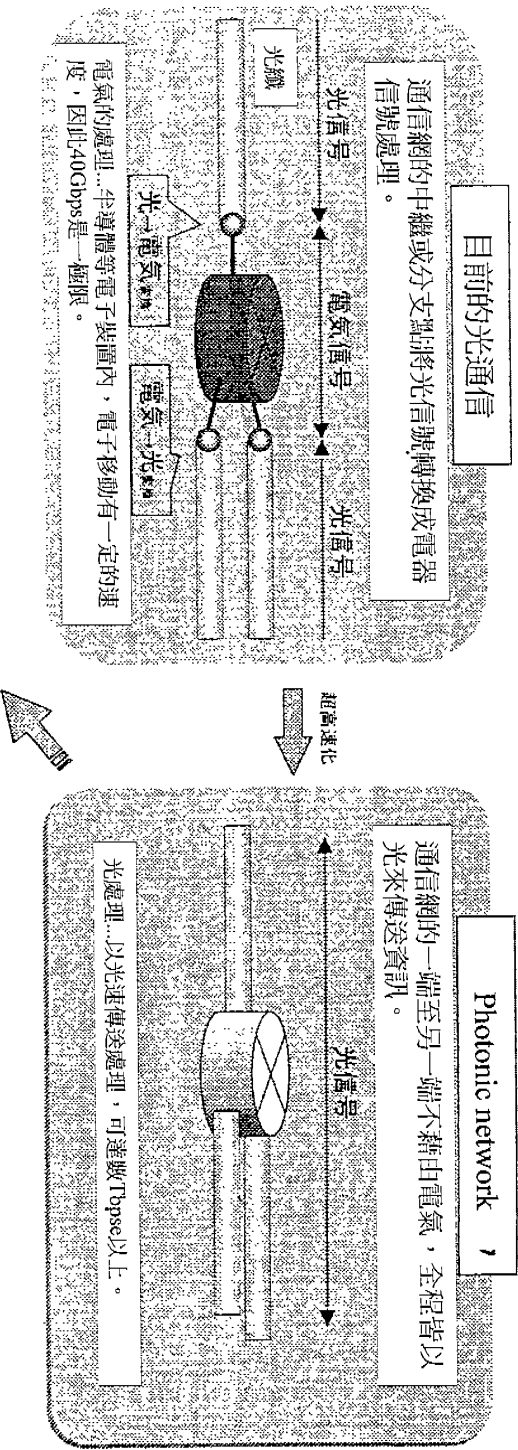
- ◎The operation and control technologies of the very high-speed telecommunications network that are the foundation and support mechanisms for the Next Generation Internet
- ◎High-performance applications for digital museums using virtual reality
- ◎High-speed Telemedicine systems that transmit visual medical data for real-time treatment of patients.

These potential uses can be achieved and further extended, depending on the researchers' ideas and originality.

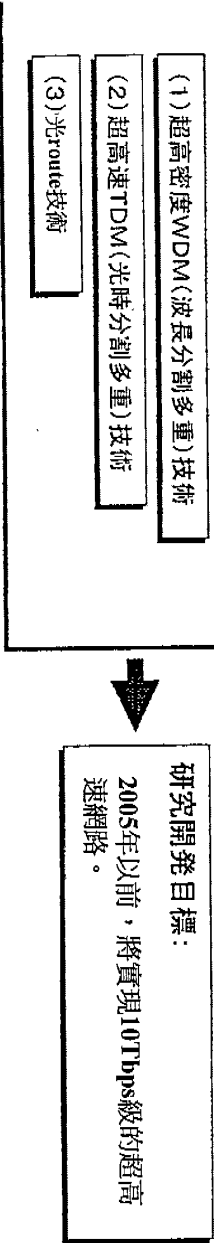


超高速Photonic network技術(1/3)

— 概念圖 —



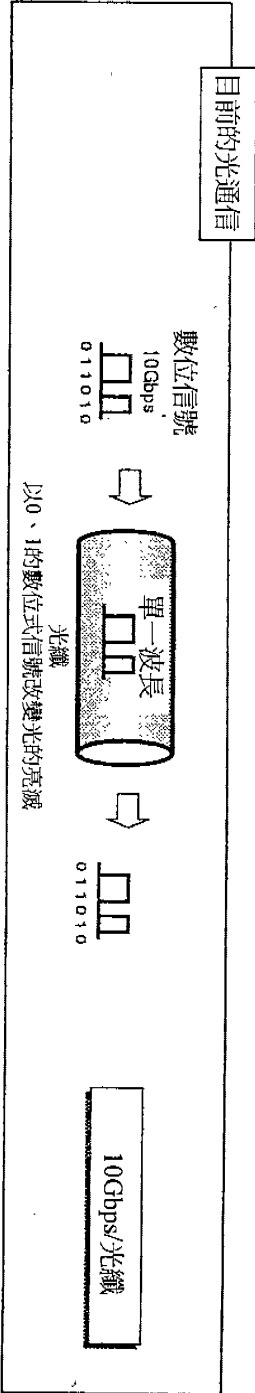
Photonic network的主要技術



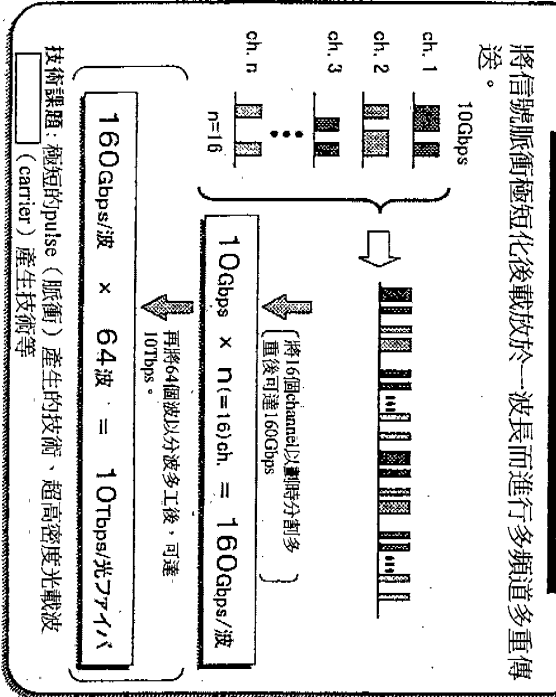
Photonic network：從一端至另一端的終端機間所有的中繼、增幅、交換或處理等過程皆以光信號進行，故亦可稱之為「全光化網路」，但為避免與目前所使用的「光通信」名稱混淆，故採用「Photonic network」名稱，以區別現今的光纖通信。

WDM: Wavelength Division Multiplexing
 TDM: Time Division Multiplexing

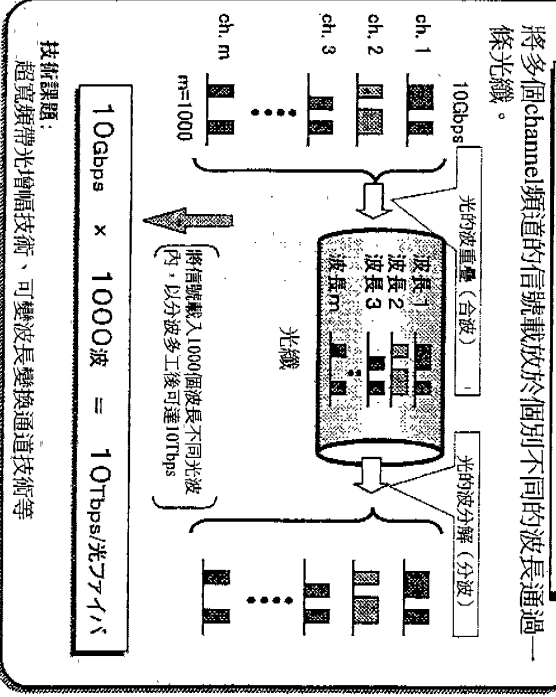
超高速Photonic network技術(2/3) — 超高速backbone技術 —



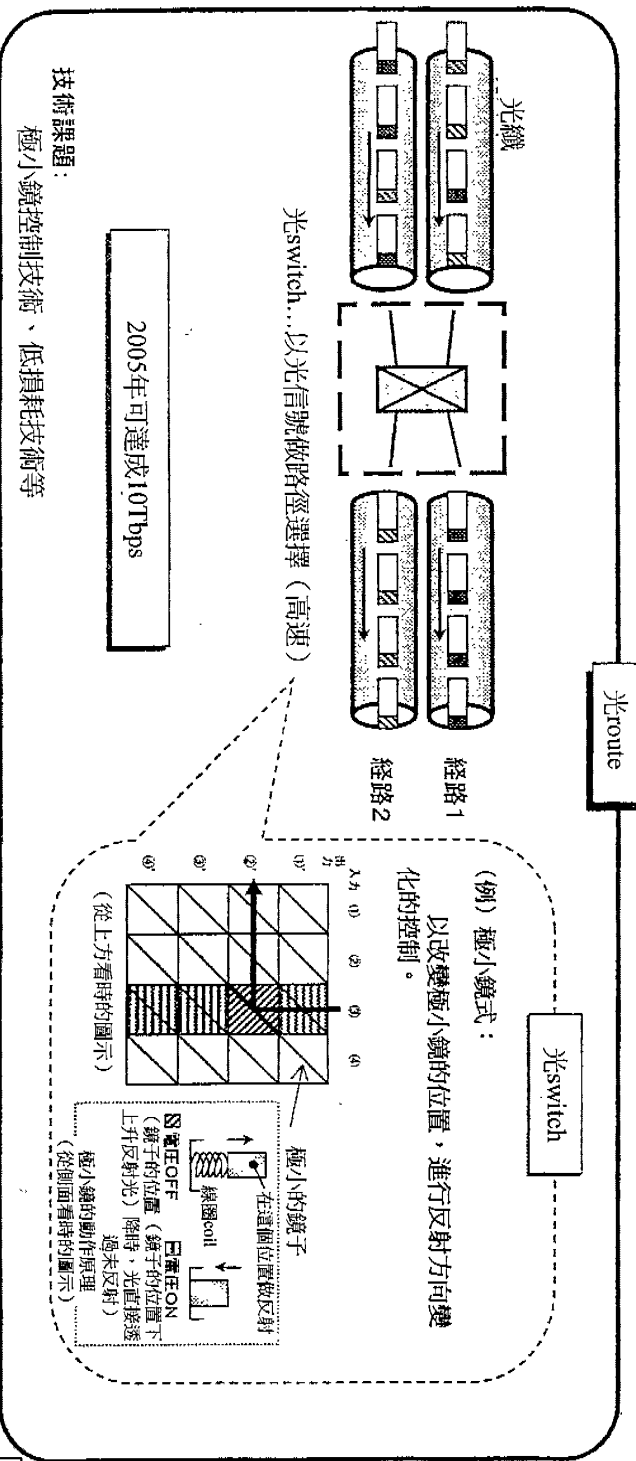
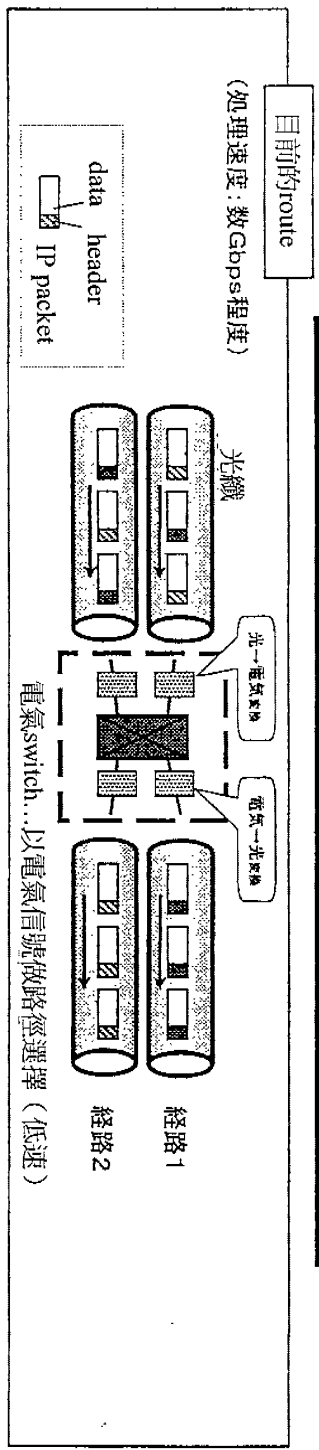
A. 超高速TDM(時分割多重)通信



B. 超高密度WDM(波長分割多重)通信



超高速Photonic network技術(3/3) ——超高速route技術——



IPv6 的特徵 —

※IPv6 (Internet Protocol version 6)

IPv6的特徵：能處理幾進無限大的address

IPv4的世界

若全世界每人分配一個address是不足的

IPv4的Internet
最多可有43億個終端機同時
通信

Address不足，
無法通信！

IPv6的世界

Internet上可接續無數的機器

IPv6的Internet
可同時通信340兆 X 1兆 X 1兆台機器

IPv6上可追加的其他新的功能

- 通信內容（電話、動畫等）不同，可優先傳送。
- IP address的自動設定（一接上，立即可使用）。
- 安全機能標準裝備（密碼化）

【參考】

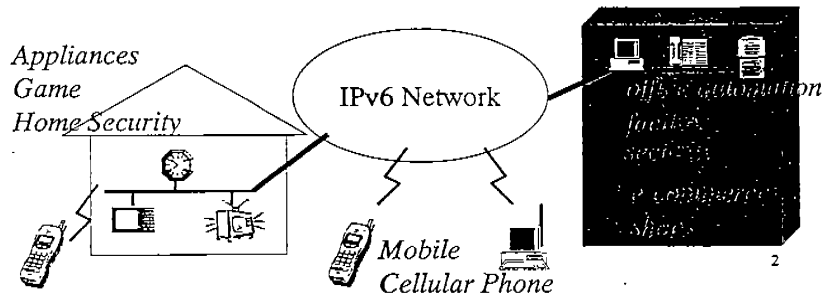
- 若把一個address比喻成一粒砂子，則
- IPv4的address量約為一個水桶。
- IPv6的address量約為一個地球。

Towards Popularization of IPv6 Business (NTT Communications' Global IPv6 Trial and Services)

Yasuki Saito (yaski@ntt.ocn.ne.jp)
 NTT Communications Corporation
<http://www.v6.ntt.net>

What is IPv6?

- The Internet has expanded exponentially. => Address will be exhausted.
- IPv6 has been developed as the next generation Internet.
 - inexhaustible addresses (cellular phone, appliances, facility in the building)
 - standardized security & QoS functions (e-commerce, image distribution)
 - auto-configuration, plug & play function (appliances) (packet for TV)
 - another functions: multicast etc.



When will IPv4 addresses are used up?

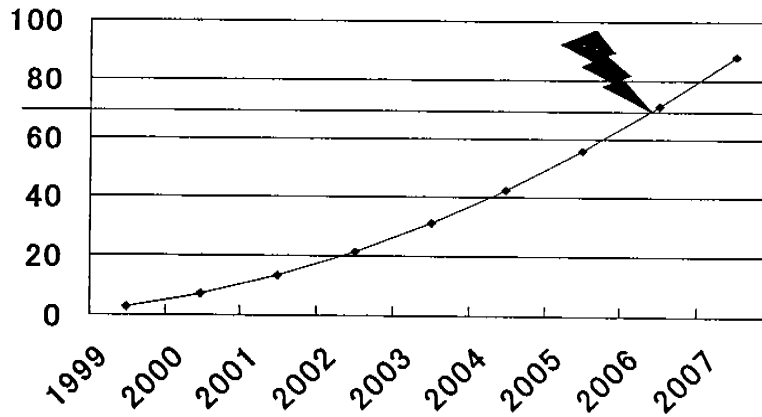
- If you measure IPv4 addresses with 1/256 of a total address space as a unit (= /8, old class A size), 70 units are still unused.
- How many units are consumed per year in each region?

	RIPE/NCC (Europe)	APNIC (Asia Pacific)	ARIN (America)	Total
1998			0.77	
1999	0.8	0.58	1.29	2.67
2000	1.2	1.16	2.08	4.44
2001				??

3

IPv4 address exhaustion, when?

(How many percentage will be used within unused space?)



4

Current situations around IPv6

Technology:

- Standardization has almost completed without dial-up protocol etc.
- 3GPP will use IPv6 for multimedia mobile network after 2003.

Business:

- The formal address assignment has started from September 1999.
- Japan leads development of OS and router and deployment of IPv6 by ISPs. EU leads mobile systems. US develops on underground.
- Nokia: demonstrated IPv6 based mobile multimedia network in Madrid.
- The IPv6 Forum was held in Osaka last December.
- ✓ National project: 2001年度事業
 - 13.7 Billion Yen budget in total. (IPv4 to IPv6)
 - Appliances and JGN.

Services:

- Network Service
 - US: MCI announced IPv6 service.
 - Japan: IJ, NTT Com, Fujitsu, NEC, KDDI, JENS and more.
- OS
 - SUN Solaris 8, FreeBSD 4.x, Linux
 - MAC OS X? ← Nokia
 - Windows XP (Whistler)
- Router:
 - Telebit, NEC, Hitachi, Fujitsu, CISCO etc.
 - IPv6-IPv4 translator: YDC
- Application
 - transplant IPv6 applications
 - DV over IPv6 Digital Video
 - IPv6 Appliance (trial product)

sTLA Holders (at the end of January)

The 65 organizations including 14 Japanese ISPs.

- | ASIA Region | US Region | Europe Region |
|---------------------------|------------------|--------------------|
| • APNIC (26) | • ARIN (12) | • RIPE NCC (27) |
| - *WIDE-JP | - ARIN | - EU-UUNET |
| - NUS-SG | - ESNET | - DE-SPACE |
| - CONNECT-AU | - VBNS | - NL-SURFNET |
| - *NTT-JP | - CANET3 | - UK-BT |
| - KIX-KR | - VRIO | - CH-SWITCH |
| - *JENS-JP | - CISCO | - AT-ACONET |
| - ETRI-KR | - QWEST | - UK-JANET |
| ✓ HINET-TW | - DEFENSENET | - DE-DFN |
| - *UJ-JP | - ABOVEINET | - RU-FREENET |
| - *IMNET-JP (Inter-Media) | - SPRINT | - GR-GRNET |
| - CERNET-CN | - UNUM-IPV6 | - DE-ECRC |
| - *INFOWEB-JP (Fujitsu) | - GBLX-V6 | - DE-TRMD |
| - *BIGLOBE-JP (NEC) | - STEALTH-IPV6.1 | - FR-FRENATER |
| - *6DION-JPNIC-JP (KDD) | | - DE-NACAMAR |
| - DACOM-BORANET | | - EU-EUNET |
| - *ODN-JPNIC-JP | | - DE-JIPPII |
| - KOLNET-KRNIC-KR | | - DE-XLINK |
| - TANET-IPV6-TW | | - FR-TELECOM |
| - HANANET-KRNIC-KR | | - PT-RCCN |
| - TANET-TWNIC-TW | | - SE-SWIPNET |
| - *SONYTELECOM-JPNIC-JP | | - PL-ICM |
| - *TTNET-JPNIC-JP | | - BE-BELNET |
| - KORNET-KRNIC-KR | | - SE-SUNET |
| - NGINET-KRNIC-KR | | - IT-CSELT |
| - *INFOSPHERE-JPNIC-JP | | - SE-TELJANET |
| - *OMP-JPNIC-JP | | - DK-TELEDANMARK 8 |
| | | - RE-ROSNUIROS |

NTT's Background

- **Since 1996, NTT has been studying IPv6 network and its operation on a global scale.**
 - NTT Com obtained sTLA registry from APNIC in September 1999. (One of the earliest in Japan).
- **Some customers long for connecting to IPv6 networks.**
 - First of all ISPs should support IPv6, we thought.
 - NTT Com has started IPv6 trials on a global scale in December 1999.
- **Corporate users start considering business with IPv6.**
 - Our trials have supported developers of IPv6 business.
 - Now we are preparing for commercializing IPv6 services in April/May.

9

NTT Communications' IPv6 Trials

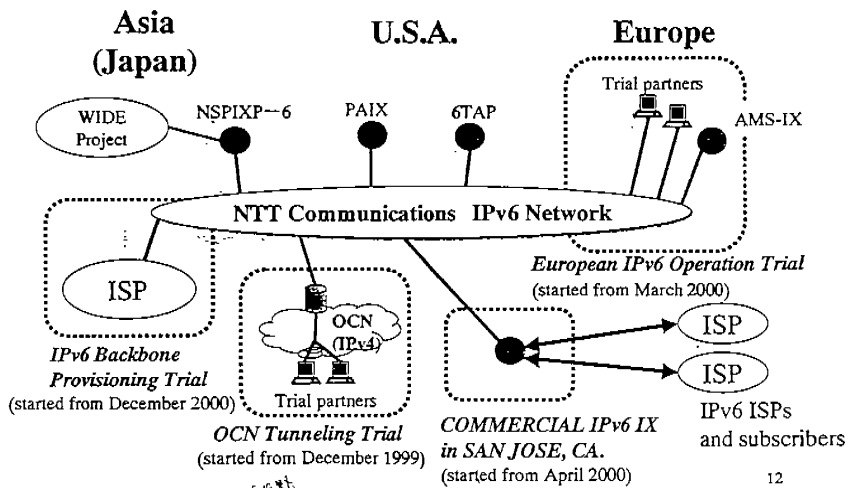
- **Network Operation Trials** (<http://www.v6.ntt.net>)
 - IPv6 OCN Tunneling Trial (NTT Communications).
 - No charge for accessing IPv6 network during the trials.
 - The trials will end on May 31, 2001.
 - IPv6 Operation Trials in Europe (NTT Europe).
 - IPv6 Commercial IX in San Jose, U.S.A. (NTT MCL).
- **IPv6 Application Trials**
 - Application Trials
 - Tests & developments for system integration and migration.
 - Individual Trials
 - Joint trials with several companies.

10

Network Operation Trials

- **IPv6 OCN Tunneling Trial** (NTT Communications)
 - IPv6 over IPv4 tunneling technology
 - For customers of OCN leased-line connection services.
- **IPv6 Operation Trials in Europe** (NTT Europe)
 - Both native and tunneling connections.
 - Connecting to many IPv6 networks in Europe.
- **IPv6 Commercial IX in San Jose, U.S.A.** (NTT MCL)
 - Operating a commercially usable IPv6 IX.
 - Located in NTT America's San Jose data center.

NTT Com Global IPv6 Network



IPv6 OCN Tunneling Trials

13

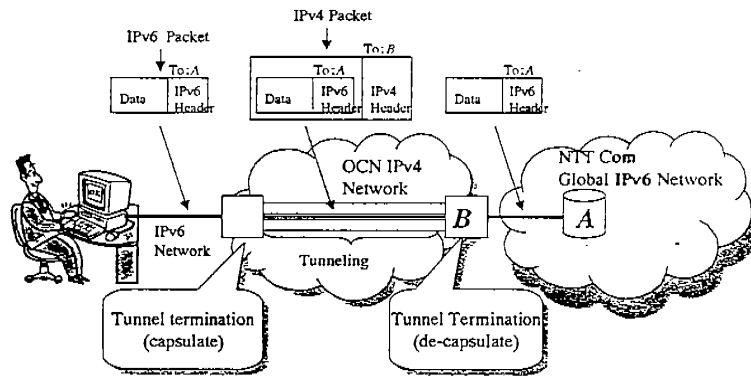
Summary of OCN tunneling trials



- **Purposes:**
 - find out services of next generation Internet with partners.
 - Accumulate skill and know-how of IPv6 operation.
- **Term:**
 - 20th Dec. 1999 - 31st Mar. 2001 (Extended to the end of May 2001.)
- **Partners:**
 - Customers of leased line OCN services.

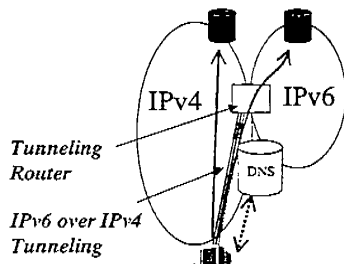
14

IPv6 over IPv4 tunneling



Transition Support

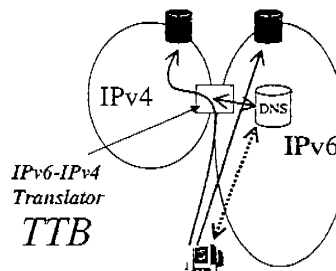
Providing IPv6-IPv4 translator function "TTB" (Joint Trial with YDC Corporation)



IPv4 / IPv6 dual stack terminal

IPv6 over IPv4 tunneling

A dual stack terminal can access to the servers on IPv6 networks using IPv4 network services.



IPv6 terminal

IPv6-IPv4 Translation

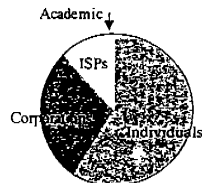
The terminal in the native IPv6 environment can access to the servers on IPv4 networks via IPv6-IPv4 Translator "TTB".

User profile of OCN IPv6 Trial

Number of trial partners: about 170 (as of Feb. 2001)

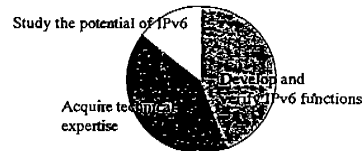
Breakdown of Participants

Shifting from research phase to business phase



Purpose of Participation

53% of participants are preparing to commercialize the service



Participants with previous IPv6 experience 28 %
 IPv6 researchers and developers 20 %

✓ What do you expect out of IPv6?
 No.1 More Addresses!
 No.2 Security!

IPv6 Application Trials

● Application Trials

- develop and test IPv6 applications
- system integration and migration of enterprise network
- demonstration:
 - N+I 2000 : Music Distribution with IPv6 security.
 - INET 2000 : TV Conference between Yokohama and San Jose.

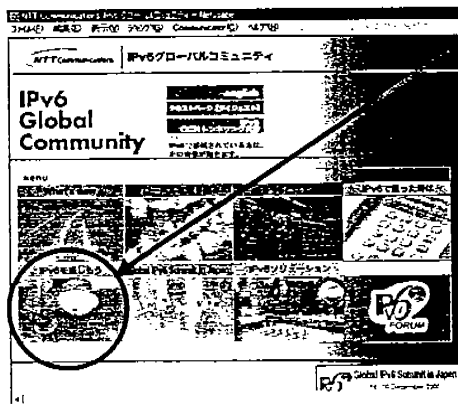
● Individual Trials

- develop and test IPv6 solutions with several companies
- support to develop new Internet business markets

Application Trials

A sample application on our Web Site

<http://www.v6.ntt.net>



- Music Distribution
- Joint trial with
 - NTT Business Information Service, Inc.
 - NTT Software Corporation

Web sites for testing IPv6 applications

These sites are open to every IPv6 users worldwide.

NTT Business Information Service, Inc.

- constructs a music distribution site
- application: mpeg123 (Linux and FreeBSD)
- <http://tako.v6.ntt.net/music.html>

NTT Software Corporation

- develops TWIN-VQ IPv6 for Windows2000 + MSDN
(joint research with NTT Cyber Space Laboratories)
- provides music (songs) for audition
- <http://tvqv6.ntt.soft.net>

21

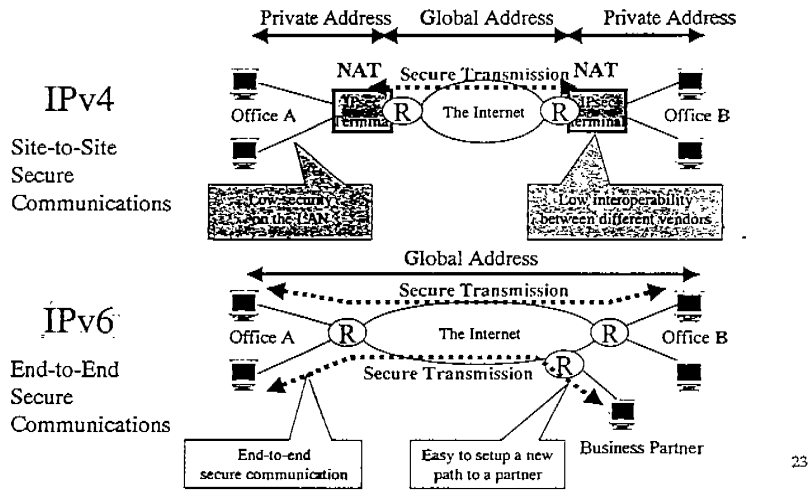
Individual Trials

22

End-to-End Secure Communication

NTT Communications

Easy to setup IP-VPN between end-to-end terminals with IPv6



IPv6 End-to-End Security Trial

NTT Communications



Takenaka Corporation is Japan's oldest architecture, engineering and construction firm with long history and rich tradition that spans nearly 400 years.

(<http://www.takenaka.co.jp>)

← Osaka International Convention Center (Grand Cube Osaka)

Constructed by Takenaka Corporation and nine other companies (JV).

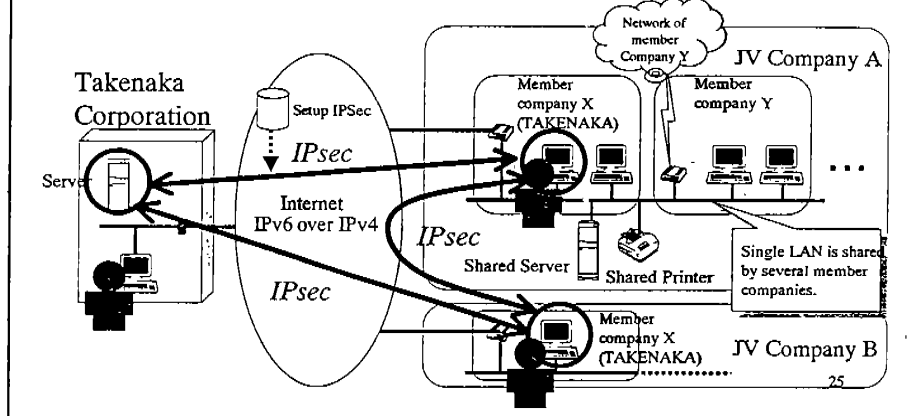
Many landmarks are constructed by JV (Joint Venture).

24

IPv6 Application Trial with Takenaka



- In a JV office, many workers from different companies are using a single LAN to share c information. On the other hand, workers who belong to each member companies have to communicate each other.
- Therefore it is necessary to establish end-to-end secure communication.
- We are investigating the validity of IPv6 within our IPv6 application trial scheme.



Future Plan



● Start IPv6 Commercial Services

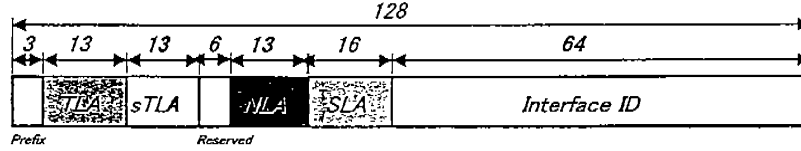
- April/May of 2001.
- IPv6 over IPv4 tunneling service for OCN users and,
- Native IPv6 service for Japanese ISPs to start.

● Expand IPv6 Trials

- IPv6 backbone provisioning trial (for ISP, ICP, ASP....).
- Expand region of the IPv6 backbone (to Asia and)
- IPv6 trial for OCN dial-up users (only a plan at the moment).

Broadband Access

Appendix 1: IPv6 address space



Top-Level Aggregation
Assigned to big ISPs among sTLA holders.



Sub Top-Level Aggregation
Assigned to big ISPs who cleared certain requirements

Assignment started on July 1998

135



Next-Level Aggregation
Assigned to ISPs.

148



Site-Level Aggregation
Assigned to end users.

Appendix 2: IPv4/IPv6 header format

IPv4 header format

0				32
IP Header	IHL	Type of Service	Flags	Total Length
Identification		Fragment Offset		
Time-to-Live	Protocol	Header Checksum		
Source Address				
Destination Address				
Option				Padding

IPv6 header format

0			32
IP Header	Priority	Flow Label	
Payload Length	Next Header	Hop Limit	
Source Address			
Destination Address			

Tentative translation

*The Stable Development of Converged
Telecommunications and Broadcast Services*

Round-table conference on info-communications policy
in the age of converged
telecommunications and broadcast services

14 December, 2000

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Preface

The IT revolution is developing into a global phenomenon, bring changes to every aspect of society and economics through advances in info-communications. The realization of a Japanese IT society in which digital media is the foundation on which all Japanese exchange information and knowledge and in which they can do so freely is said to be the key to enriching the lives of the Japanese in the coming twenty-first century and giving our country a competitive advantage.

In July of this very year, the government established the IT Strategy Headquarters and the IT Strategy Conference, and on November 27, these groups put together the Basic IT Strategy aimed at achieving an IT society in Japan. This strategy proposes plans for advancing the four policy spheres of primary importance: (1) ultra-high-speed network infrastructure installation and policies on competition, (2) electronic commerce and new support facilities, (3) implementation of electronic government, and (4) improved workforce education.

Over the past six months since the inception of the round-table conference, they have thoroughly examined the info-communications policies related to converged telecommunications and broadcasting. The issues focused on were how to view the changes brought about by the lightening development of today's IT and how to respond to these changes. The established work groups just completed discussions on converged telecommunications and broadcast services which also took into consideration the state of affairs in other countries as well.

In their conclusions, they summarize these discussions and delve into the measures to be taken to achieve a Japanese IT Society from the viewpoint of converged telecommunications and broadcast services, and even though they center on systematic measures in order to deal with changes in a flexible manner, I am pleased with the strategic view they have provided for future info-communications policies.

I expect that use of this report in the policy proposal process will result in the creation of new value appropriate to the twenty-first century.

Masao Horibe

Chairman, Round-Table Conference on Info-communications Policy in the Age of
Converged Telecommunications and Broadcast Services

Chapter 1 Convergence of Telecommunications and Broadcasting through IT

IT advances in recent years are bringing a high-speed low-cost stable info-communications user environment within reach of all Japanese. The convergence of telecommunications and broadcasting is a particularly notable phenomenon brought about by these IT advances, making it necessary to evaluate and reassess today's info-communication systems and policies firmly based on current conditions and the direction of these changes.

1. IT Today

The miraculous growth of IT has reached various technological fields including elemental technology, network technology, human interface technology, and security technology.

In elemental technology, advances in semi-conductors, fiber optics, data storage devices and media are supporting the growth of today's IT.

In network technology, optics related technological developments, such as wavelength division multiplexing (WDM)¹, have been astounding, while the transmission capacity of backbone networks is continuing to increase at a remarkable pace. And for access networks, the advent of high-speed Internet connections, like cable TV, DSL², Fiber to the Home (FTTH)³, and Subscriber wireless access systems (FWA)⁴ has ensured a steady increase in transmission capacity. Digital compression technologies, such as MPEG-2⁵, are one of the forces driving analog to digital conversion in terrestrial, satellite, and cable TV.

In human interface technology, developments in displays, voice and other recognition systems, intelligent processing techniques have improved user convenience, examples of these advances are the miniaturization of high-resolution LCD displays for cellular telephones and increased functionality for automated translation systems.

Advances are also being made in security technologies, with electronic signatures, anti-virus software, and packet filtering added to encryption, the fundamental technology of security. Some notable examples are the construction of the Public Key Infrastructure (PKI), which uses public-key-cryptosystem, and the spreading use of firewall technology prevents unauthorized access. Along with the spread of the Internet, demands increased protection and speed from security technology.

1. Wavelength Division Multiplexing. Sending several optical signals of different wavelengths over a single fiber. This technique allows much higher volumes of data to be transmitted over optical fiber.

2. Digital Subscriber Line. This is the general term for transmission methods that make high-speed data transmission possible over existing metallic cable telephone lines. ADSL, SDSL, VDSL are some of the methods included, each type having different transmission speeds ranging from several Mbps to several tens of Mbps. ADSL permits transmission at several Mbps within a distance of 2 km.

3. Fiber to the Home. By connecting each subscriber to the local exchange by fiber-optic cable, ultra-high-speed, high-capacity transmissions, such as video, is possible to the home.

4. Fixed Wireless Access. In Japan, a subscriber wireless access system has been implemented for use by telecommunications businesses. Same as wireless local loop (WLL).

5. Moving Picture Experts Group. MPEG-2 is a general purpose digital compression scheme being put forth jointly by the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) in conjunction with the International Telecommunication Union (ITU) regarding telecommunications, broadcasting, and storage media. This scheme is flexible and capable of handling a wide range of quality levels from present day television signals to HDTV. Standardization was completed in November 1994.

2. Changes brought about in the user environment by IT

Innovations appearing in elemental technologies and network technologies have driven the development of the Internet, digital satellite broadcasting, and other info-communications media, making it possible for the general public to access technologies that were once limited to a small group of users and changing the characteristics of this access as well.

(1) The spread of the Internet and improvement of access lines

A. Spread of the Internet

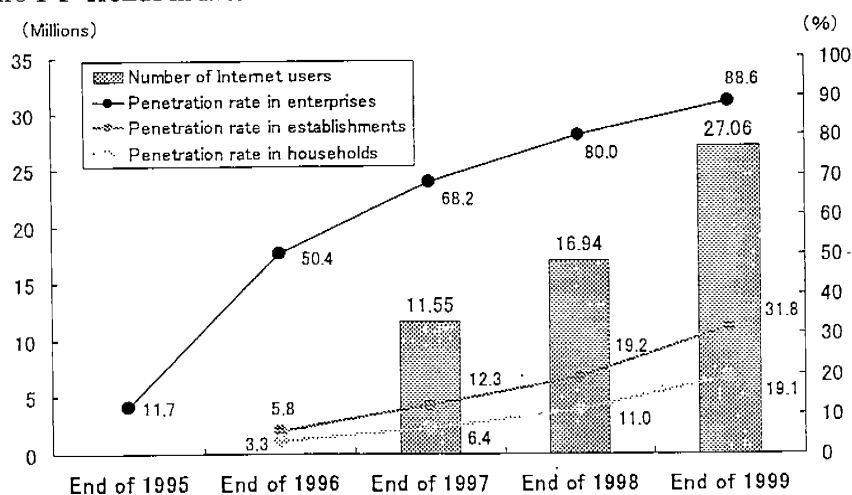
The Ministry of Posts and Telecommunications estimated, based on the White Paper "Communications in Japan 2000," that there were 27.06 million Internet users⁶ aged 15 to 69 in Japan at the end of 1999, an annual increase of 59.7%. (Figure 1-1)

The primary factors contributing to this explosive increase in Internet use are thought to be increased PC penetration in the home due to lower PC prices and the arrival of mobile Internet services (February 1999), which make it possible to access web content through cellular phones.

That same white paper predicts that the number of Internet users will have increased to 76.70 million by 2005, with penetration of the Internet to new users leading the expansion into the future.

6. This white paper includes Internet users who access Web content or send or receive e-mail through cellular telephones, PDAs, home game handsets, or television sets equipped with an Internet access devices, in addition to PC access.

Figure 1-1: Trends in Internet Penetration



(SOURCE: WHITE PAPER "Communications in Japan 2000", Ministry of Posts and Telecommunications)

Table 1.1: Internet Users by Access Method

		Mar. 2000	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.
Dial-up access type (telephone lines)	Index	100	103.9	107.6	111.2	115.1	118.3	121.8	125.3
	Subscribers 1 = 10,000	21.6	-	-	32.9	-	-	46.3	-
Cable TV network	Index	100	-	-	152.3	-	-	214.4	-
	Users 1 = 10,000	749.9	935.1	1056.7	1272.3	1506.6	1729.0	1967.9	2180.0
Cellular phone	Index	100	124.7	140.9	169.7	200.9	230.6	262.4	290.7
	Users	211	399	760	1235	1605	2122	2537	3171
DSL	Index	100	189.1	360.2	585.3	760.7	1005.7	1202.4	1502.9
	Users	211	399	760	1235	1605	2122	2537	3171

SOURCE: Ministry of Posts and Telecommunications documents.

NOTE:

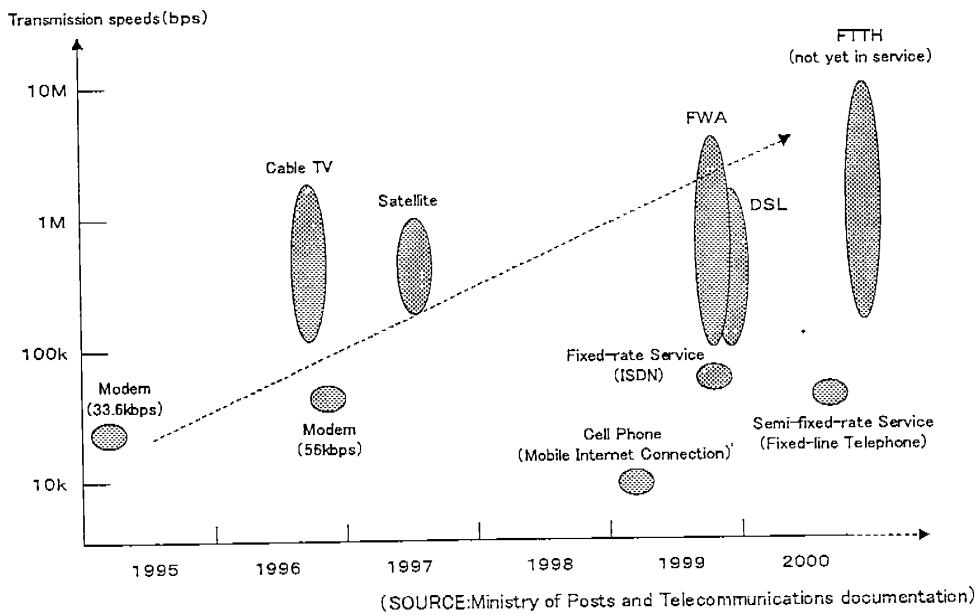
1. For this index March-end 2000 = 100.
2. The index for dial-up Internet access is based on the number of subscribers from the top 15 ISPs (11.94 million), and March-end 2000 = 100.
3. The number of subscribers connecting to the Internet via cable television networks includes some dial-up subscribers. It also includes the number of lines provided to ISPs by carriers.
4. The number of users who access services via cellular telephone is the total number of subscribers to i-mode, EZweb (including the earlier EZaccess), and J-Sky services.
5. The number of DSL users is the number of subscribers to DSL service (trial service) in two NTT regional companies. The details can be found at the DSL Report Page, <http://www.mpt.go.jp/whatsnew/dsl/>.

B. High-speed Access and a Variety of Access Methods

Until 1995, the only method of access available to general users was a modem and a common telephone line (subscriber line). Later, however, cable television networks, DSL, and FWA services users are quickly growing in numbers as service areas grow, making high-speed access with transfer rates of several hundred kbps or higher relatively easy to obtain for the general user. Two NTT regional companies plan to offer FTTH service, with speeds of 10 Mbps, to the general public shortly, and we are waiting for the next-generation mobile telecommunications systems, IMT-2000⁷, discussed later, to start providing services as well.

7. International Mobile Telecommunications - 2000, the next generation mobile telecommunications systems.

Figure 1-2: Internet Access Lines (Private)

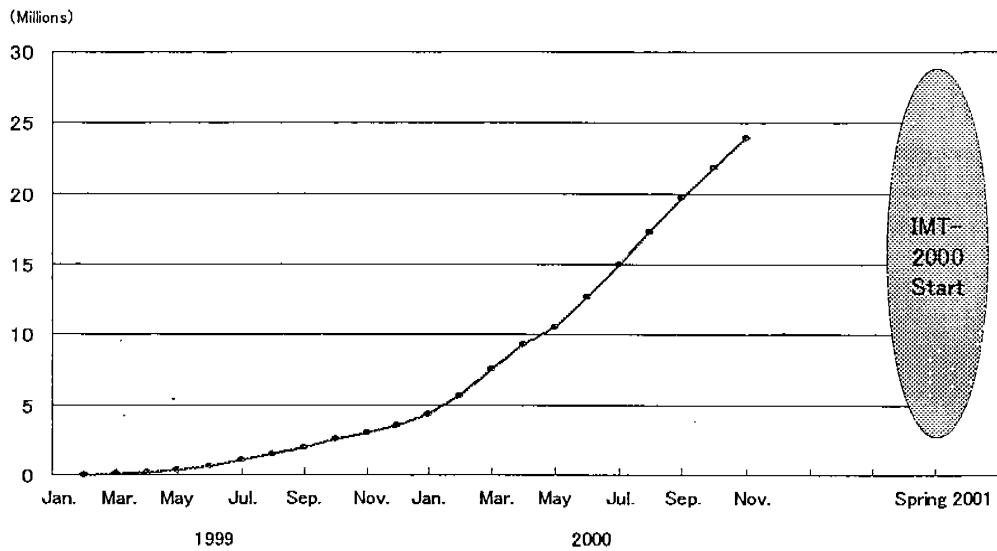


C. Mobile Internet

While access to the Internet via PC is increasing, the number of users accessing websites solely via a cellular telephone is also increasing rapidly. Since the NTT DoCoMo Group began i-mode service in February of 1999, DDI Cellular Group, IDO, TU-KA Group, and J-Phone Group all began similar services, and the number of mobile Internet contracts have increased at a startling pace, reaching 23.96 million contracts as of 30 November 2000.

In addition, NTT DoCoMo Group's IMT-2000 service, scheduled to begin in May of next year, will provide data telecommunication speeds of 384 kbps (while walking, moving at low speeds, or inside a building) and is expected to increase to 2 Mbps (inside a building), providing a viable means of high-speed Internet access. The J-Phone Group and KDDI Group plan to offer IMT-2000 as well. Japanese carriers are introducing IMT-2000 ahead of Europe and America, drawing international attention to the creation of attractive web content and applications made possible by the high-speed system.

Figure 1-3: Mobile Internet Contracts



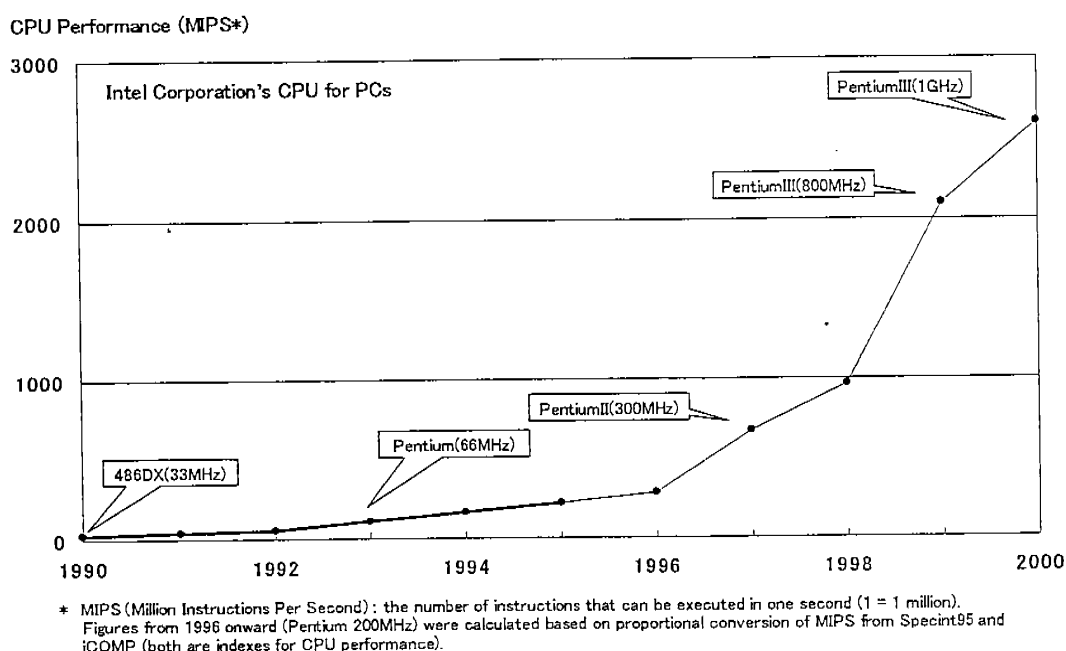
(SOURCE: Created by the Ministry of Posts and Telecommunications based on Impress Corporation's "Internet White Paper 2000" and the Telecommunications Carriers Association website.)

(2) The increasing speed of personal computers

Over the last ten years, the processing speed of CPUs for use in personal computers has increased 100 fold due to progress in semi-conductor related technologies (Figure 1-4).

Personal computer functionality has greatly improved as well, not only due to improved CPUs performance but also due to high-volume memories and hard disk drives resulting from advances in data storage devices. Processing of large image and sound files, which has been difficult up till now, is easily handled on the high-performance, inexpensive PCs now available. These machines are also becoming more widely used for video and television program viewing, recording, and editing.

Figure 1-4: CPU Performance in Personal Computers⁸



(SOURCE: Created by the Ministry of Posts and Telecommunications based on the Intel Corporation's website.)

(3) Digital broadcasting (Document 1)

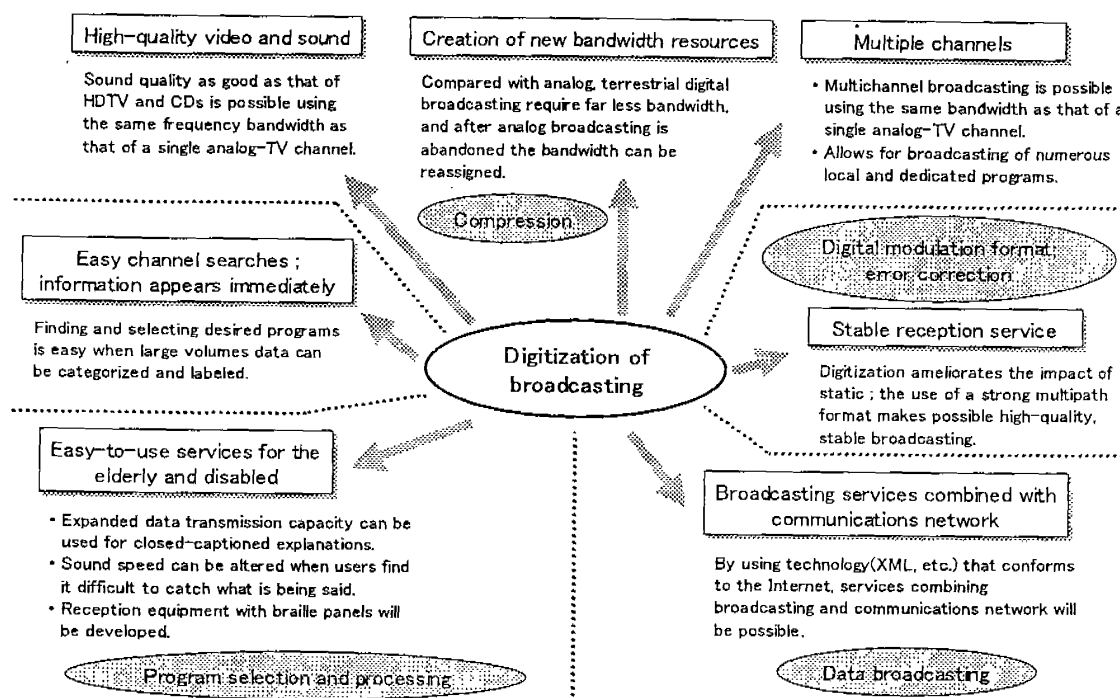
Currently, countries around the world are converting to digital broadcasting, and the improvement and diversification of broadcasting services brought about by combining and merging computers with info-communications is expected to bring a larger selection of programming and services to the viewers (figure 1-5). In Japan, digital broadcasting over communications satellites (CS) began in June of 1996, and broadcasting satellite (BS) digital broadcasting will be added in December of this year. CS digital broadcasting is slated to begin in 2001 using the communications satellite N-SAT-110, stationed at 110° east longitude, the same longitude as the BS digital broadcasting satellite, BS-4 second stage (figure 1-6). Terrestrial digital broadcasting is slated to begin in three major areas at the end of 2003 and other regions at the end of 2006.

In other fields, cable television providers began digital broadcasting in selected areas in July of 1998, and they are working diligently to offer more services, such as telephone and Internet access, and provide quality relay of digital broadcasts like the BS digital broadcasts. Tie-ups between carriers to cover a larger area and other such

trends are emerging as players in the field seek to actively support digitization and accommodate the improvements in cable television.

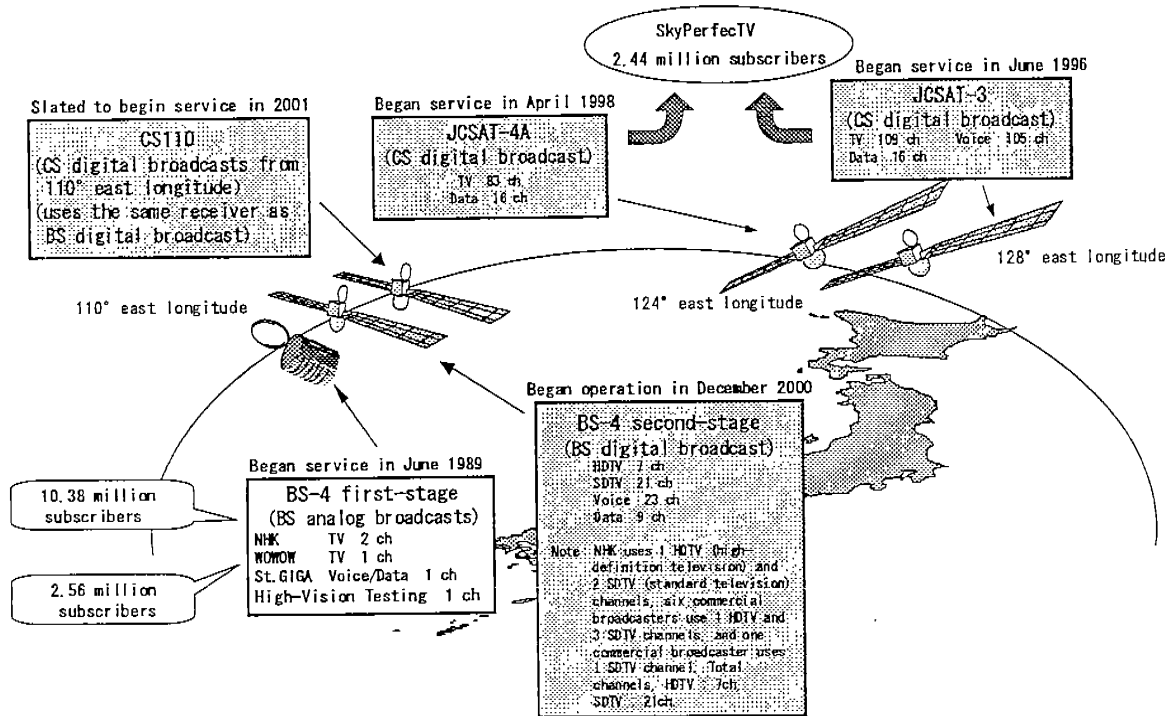
8. In figure 1-4, figures from 1996 onward were calculated based on proportional conversion of MIPS from Specint95 and iCOMP (both are indexes for CPU performance). As a result, the MIPS value in 2000 was 2600, an approximately 100 fold improvement in performance over the 1990 MIPS value of 27.

Figure 1-5: The Merits of Digital Broadcasting



(SOURCE: Ministry of Posts and Telecommunications documentation)

Figure 1-6: Satellite Broadcasting Today



Figures for channels and subscribers are as of November 2000, except for NHK subscribers, which are from October, and BS digital broadcast channels, which are from 1 December.

(SOURCE: Ministry of Posts and Telecommunications documentation)

Chapter 2 Progressive Convergence of Telecommunications and Broadcasting

1. The Convergence of Telecommunications and Broadcasting

Currently the Internet is spreading, high-speed access and access methods are being developed, personal computers are becoming faster, and broadcasting is going digital. Amidst these activities the melding of telecommunications and broadcast businesses has converged as a clear trend marked by new hybrid services that combine telecommunications and broadcasting, combined telecommunications and broadcasting network use, and dual market businesses and business tie-ups.

As larger volumes of digital information are relayed to businesses and homes and accessibility becomes more common, this phenomenon of converged telecommunications and broadcasting will most likely become more pronounced.

(1) Converged Services

Usage of combined services (services called "openness of telecommunications" and "restriction of broadcasts"), which have characteristics of both telecommunications and broadcasting, is increasing. Here are a few examples.

- a. BBS (bulletin board systems)⁹
- b. Dissemination of information through websites
- c. Internet broadcasts¹⁰
- d. Data broadcasts

(2) Converged Networks

The Broadcast Law was revised in 1989 to establish a single system (program/facility-supplying broadcast system) for CS broadcasting, which was separated into a broadcast licensing system and program production licensing system. Digital broadcasting began in August, 1996, and as of October, 2000, there were 117 program-supplying broadcasters.

Cable television that uses FTTH (fiber to the home) began to appear in July, 1997.

This type of broadcasting that uses CS and cable television via FTTH make use of the same routes to provide telecommunications and broadcast services.

Internet access services that use excess cable network capacity¹¹, cable television telephony¹², and home security services¹³ are some examples of telecommunications services that use broadcast channels.

(3) Converged Terminals

Home appliance makers have begun to offer PCs that can display and record television signals and set-top devices that enable Internet access via the television, making it possible to use both telecommunications and broadcast services from one terminal.

Efforts to develop and spread new terminals that accommodate the digital broadcast era are gaining momentum, and private enterprises are engaged in discussions to create uniform standards.

(4) Converged Enterprises (Document 3)

Excluding NTT East and West and NHK, which are special corporations whose operations are regulated, interaction between telecommunications and broadcast companies are open and unregulated.

In fact, there are many instances of telecommunications and broadcast companies operating in both areas, with 183 cable companies providing type-1 carrier services as of December 1, 2000.

9. This is one feature of PC telecommunications services, the Internet, groupware, and Internet services, where the computer is used as a message exchange system. The users post messages to a bulletin board service via the network, and other users can see them and download them from the network.

10. This service is used to distribute content over the Internet using streaming technology, which replays in real time the sounds and images received. Internet broadcasts, which made their debut in the 90s, have dramatically increased with the increase of Internet users and dedicated connection services. Content sent to computers with the proper software installed (RealPlayer, Windows MediaPlayer, Quicktime, all distributed for free) do not store the data received on the hard disk, but play it back as fast as it is received, doing much to alleviate the problem of unauthorized copies. There are scheduled live broadcasts as well as on-demand broadcasts that respond to user requests. (document 2)

11. This service makes use of unused channels and the interactivity of cable.

12. Telephone service is provided with control signals and voice signals carried over unused television channels.

13. This service connects fire, gas, and security sensors in each home with the security company. Using this same principle, this system is also used to monitor water pipes and headwater volume.

2. Special Characteristics of Today's Convergences

(Documents 4, 5, and 6)

The convergence of telecommunications and broadcasting are beginning to bring not only increased volume, but also important qualitative changes to today's industry and people's lives.

(1) The expansion and diversification of converged telecommunications and broadcasting services

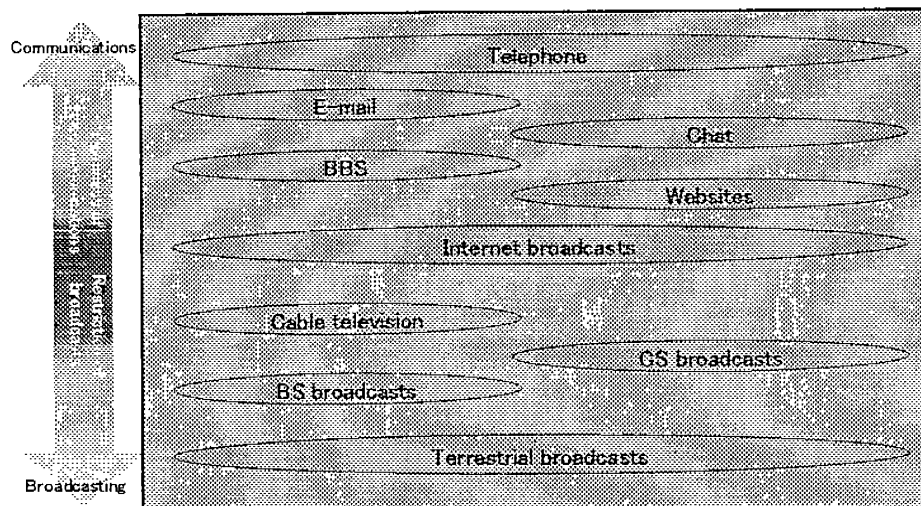
As the users of BBS, websites, and other hybrid services increase, new services have begun to appear on the market with a corresponding increase in the variety of services. Services that provide interactivity through the combination of telecommunications and broadcasting are being developed and offered.

A. Hybrid Services

Dissemination of information through BBS, Internet broadcasts, and similar means combine the characteristics of the telephone, the most typical example of telecommunications services, and terrestrial broadcasting, the most typical example of broadcast services.

While these hybrid services are spreading as an effective means of disseminating information for individuals, they also provide a simple way of passing on information from anonymous sources to a number of unspecified recipients, and the unrestricted distribution of illegal or harmful information is becoming a clear problem.

Figure 2-1: Hybrid Services Expansion



B. Interactive services combining telecommunications and broadcasting

Interactivity is becoming a reality through the combined use of data broadcasting over BS and CS digital broadcast systems and telecommunications systems such as the Internet.

Efforts to develop new businesses using the ubiquitous TV set, the so called T-business sector, are heating up. Joint development of terminals with onboard HDDs is progressing, and we will mostly likely see new applications where broadcast content is processed on the user's terminal to provide product information and receive orders. We anticipate the creation of a system in which broadcast information is tailored to user's needs, orders are taken in real time through telecommunications systems, and content is delivered to the user over the most optimum route whether that be telecommunications or broadcasting.

The success or failure of these services depends on the level of customer satisfaction inherent in the content or applications provided, making the real issue the creation of content and unique applications. Another emerging issue is the formation of business models and the development of systems that combine the advantages of both telecommunications networks and broadcast networks to deliver the above mentioned contents, whether this is done through digital broadcasts or broadband networks.

(2) Changes in the Content Distribution System

In the past television content was delivered primarily through terrestrial broadcasts. But with the development of a variety of distribution routes, the content distribution market has become more diverse and more complex.

What this means is that a variety of distribution routes have been applied to that business model, and the content producers now have a variety of choices for distributing their content to the end user. For example, it may soon be possible to distribute movies over networks, and in fact, pay-per-view movies have already been aired over the Internet on a test basis using streaming technology.

And we are seeing more telecommunications carriers that provide network services venture into the content creation field and form partnerships with companies in other fields.

Figure 2-2: The Original Content Distribution Network

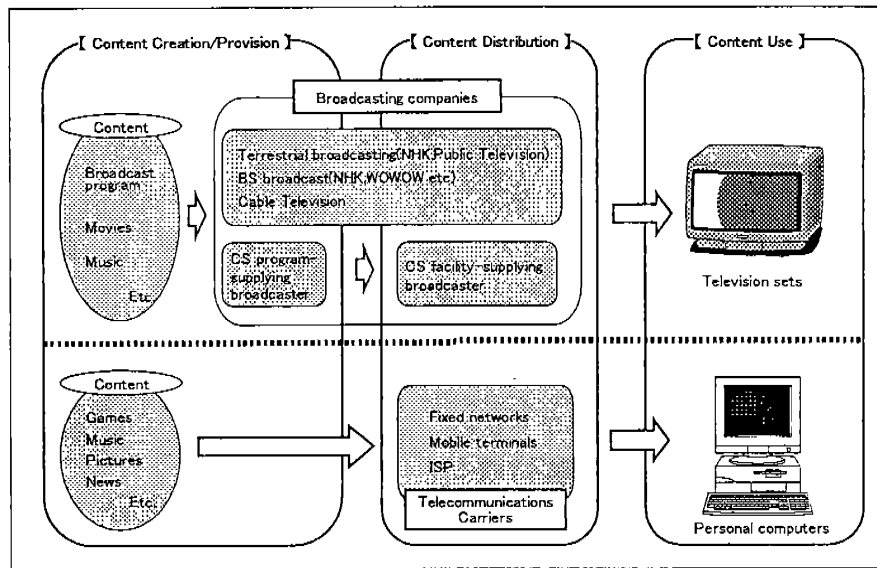
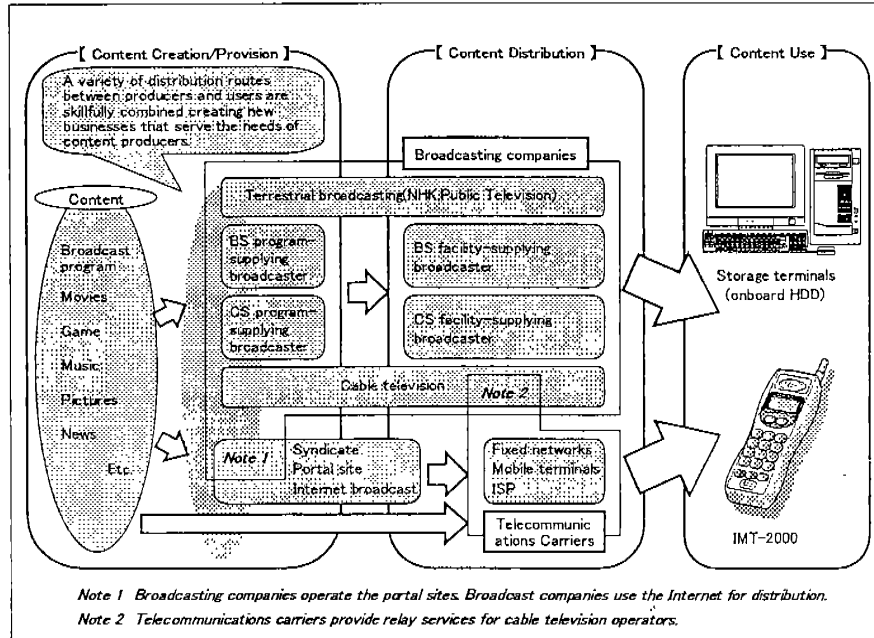


Figure 2-3: The Content Distribution Network of the Future



(3) The evolution of multi-use content

Digital content is easy to reuse because it can be copied without degradation and new productions can be made from multiple sources. Content produced for multi-use has finally begun to take hold. As the industry converts to digital media, it is expected that contracts that address reuse rights of all types will become common.

Today, motion pictures are designed for multi-use in movie theaters, in-flight movies, packages, pay-per-view broadcasts, terrestrial broadcasts, and reruns, and in television broadcasting they have begun to edit programs separately for broadcast over the Internet. Since the reuse of portions of programs is expected to increase in the future, content created with multi-use in mind will undoubtedly increase as well.

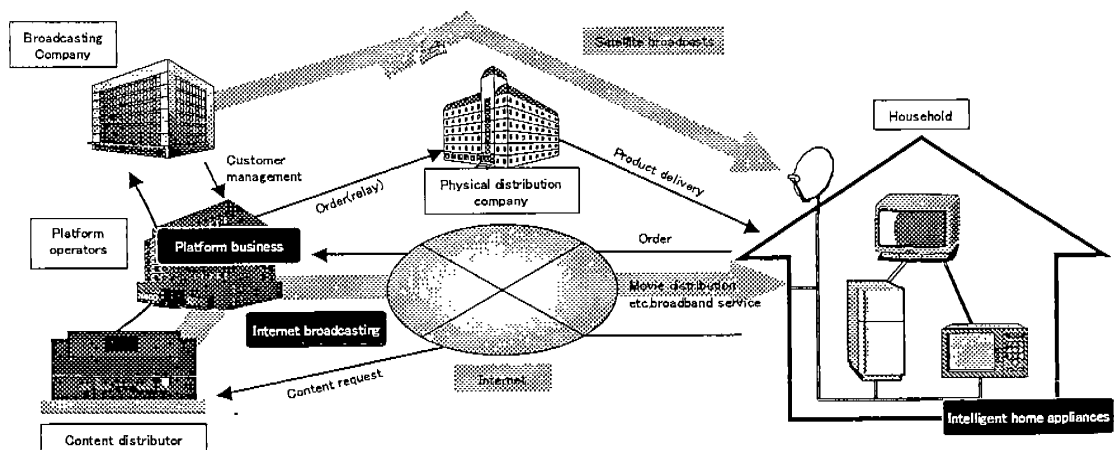
The biggest issue is whether or not a system can be created that appropriately balances the protection and management of copyrights (copyright, neighboring rights, right of portrait) with user convenience. To expand the content distribution market and assist in the conversion to multi-use content, technical and systematic issues must be resolved and a system constructed that firmly protects copyrights and is quick and easy to use.

3. The Future of Converged Telecommunications and Broadcasting Services

As telecommunications and broadcasting services continue to converge, it is predicted that Internet broadcasts will be on the rise, platform businesses¹⁴ will prosper, and there will be remarkable diffusion of intelligent home appliances. For example, the following business models will appear.

- T-businesses that use the special characteristics of high-volume data broadcast systems, record content to an HDD, and allow audiences to search that content, check on products they are interested in, and use the Internet to place orders.
- The separation of traditional broadcasting for large audiences and Internet broadcasting for small audiences.
- Use of IMT-2000 to promote a certain portion of new music and newly released films. Orders can be made from the receiving terminal, and the product distributed over the data broadcasts.

Figure 2-4: Converged Telecommunications and Broadcast Services of the Future



14 "Platform" is often used in the broadcasting industry to mean "in satellite broadcasting, a company who manages advertising, customer bases, and collects fees for program-supplying broadcaster" (Satellite Magazine Monthly Editorial Office, ed., *Cable Television and Satellite Dictionary*, Satellite Magazine Publishing, 2000). With the evolution of the network to broadband, the content distribution market will change and expand, and their role in managing advertising, subscribers, and the collection of fees will expand, thus this report uses "platform" in a broader sense that encompasses all these functions not limited solely to digital satellite broadcasting. See next page for more details.

(1) Internet Broadcasting

Internet broadcasting came on the scene in the 1990s and quickly expanded with an increasing number of users and the spread of dedicated connection services. Content also grew and diversified and is continuing to do so.

With the spread of Internet broadcasts, the issue has been how to increase access speeds and reduce the load on the backbone network and servers when accessing large volumes of data simultaneously, which is gradually being resolved through broadband services to the home—cable television, DSL, and optical fiber services—the use of IP multi-cast technology (document 7), and increased speeds on the Internet (for example, the beginning of IPv6¹⁵ trials), and we are moving towards the completion of an environment in which the average household can view high-quality content via the Internet (document 8).

(2) Platform Business

Platform businesses play a large role in the present day CS digital broadcasting business model by working with program/facility-supplying broadcasters, managing customers, fees, and assisting in creating management strategies. It appears that BS digital broadcasting, which went into service in December, and the future CS digital broadcasts will employ a similar structure to that currently used in CS broadcasts. It also appears that cable operators, who manage their own customers and fees individually, will work through an industry group with platform businesses in the management of CAS¹⁶.

And in the Internet as well, housing¹⁷, hosting¹⁸, data centers¹⁹, ASP²⁰, authentication, and fee collection businesses have become vital elements in the creation of a business model.

The full digitization of broadcasts and spread of broadband networks to households are expected to expand the absolute volume of content demanded by users as well as increase the market size of platform businesses and their copyright protection and management, fee collection, and other services.

¹⁵ Internet Protocol version 6. Compared to the current IPv4, there are many more addresses possible. the Quality of Service control function and multi-cast function are supported as standard features, and it easily supports broadband services such as Internet broadcasts. In December of 1998, a proposal of IPv6 (RFC 2460) was drafted, and efforts to standardize peripheral protocols, such as route control, are currently

underway. Multicasts are being implemented in Japan by companies such as IJJ, which built a network that supports multi-cast technology and which are currently distributing content to some users on its network.

16. Conditional Access System.

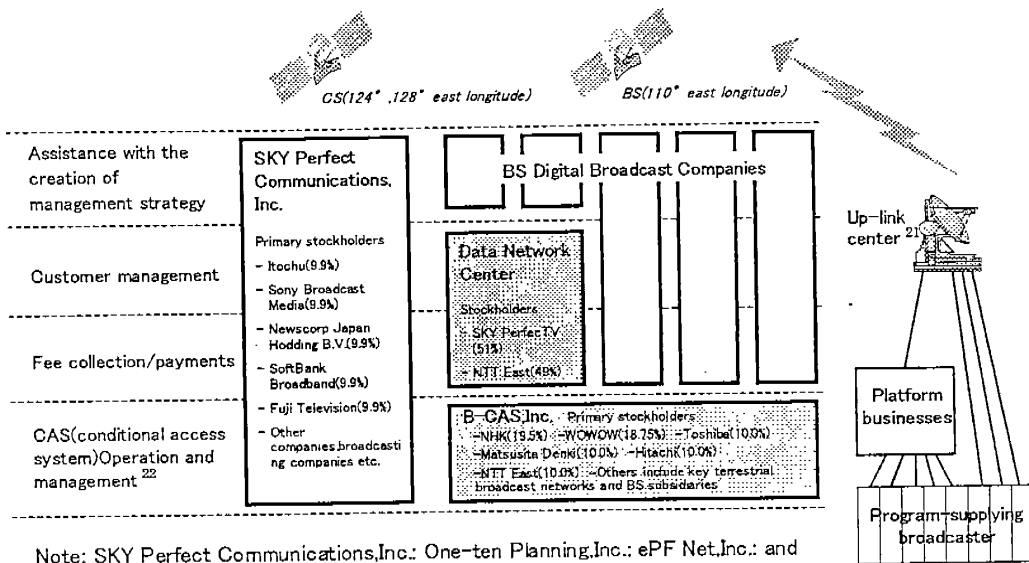
17. Maintenance of customer owned servers, also called co-location services.

18. Purchase, installation, and operation of servers that are then leased to customers.

19. Provision of a location to install hardware, such as company web servers, that provides high-speed Internet backbone connections, management, and operation.

20. Application Service Provider. These companies maintain and operate all types of software applications at a data center accessible via the Internet, and these services are provided to customers (businesses) over the Internet.

Figure 2-5: Platform Business Trends in Digital Satellite Broadcasting (document 9)



Note: SKY Perfect Communications, Inc.: One-ten Planning, Inc.: ePF Net, Inc.: and others, are looking into the possibility of creating a platform business for program-supplying broadcaster to carry 110° east longitude CS digital broadcasts. This type of business is expected to receive approval in December.

SOURCE: created by Ministry of Posts and Telecommunications with reports from all major newspapers

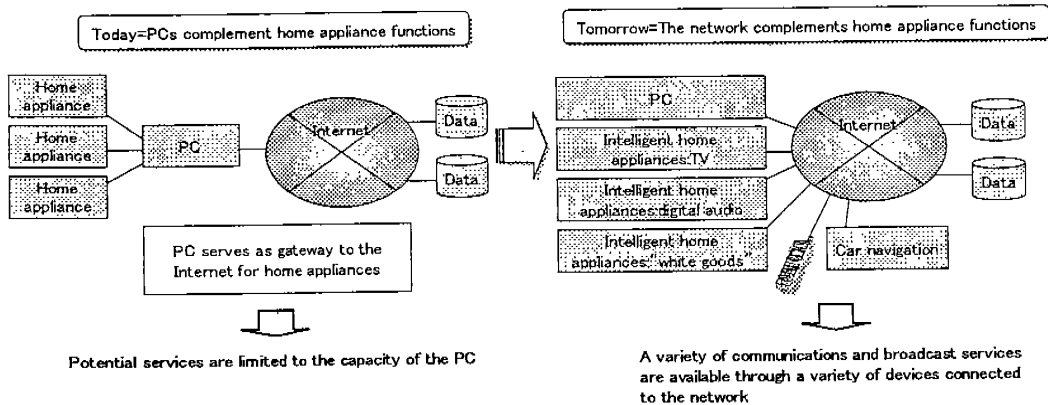
21. BS digital broadcasts are done via the up-link center owned by NHK, and B-SAT Inc.

22. Plans exist to create businesses that provide security services that use personal identifications that are difficult to forge, IC cards, and finger prints.

(3) Intelligent Home Appliances

Swept up in the wave of digitalization, the home appliance industry is working hard to connect up refrigerators, microwave ovens, and a variety of other "white goods" to create a home appliance network. In January of 2000, appliance makers and telecommunications companies established the Association for the Advancement of Intelligent Home Appliances Internet to develop advanced home appliances that can connect up to each other over a network, exchange information within the home, and even retrieve information over the Internet (these products are called intelligent home appliances or digital appliances). The association is continuing to pursue development of a universal system for intelligent home appliances and international standards for content and display tools.

Figure 2-6: The Intelligent Home Appliance Network



23 Research subjects for the Association for the Advancement of Intelligent Home Appliances Internet

1. Advanced network technology: technologies that facilitate network support of all types of home appliances, necessary for implementing services that use intelligent home appliances.
2. Home network server technology: telecommunications protocol conversion technology, all types of network data exchange technology
3. IC card, mobile compatibility technology: standard interface specifications for contact-less IC cards and mobile phones (mobile terminals).
4. Content description and browser search technology: MPEG-7 streaming browsers ideal for information appliances (pushing MPEG as the international standard, a description specification for effective retrieval of video and audio multi-media content) and MPEG-7 description methods.

Chapter 3 Current Trends in Converged Telecommunications and Broadcasting in Foreign Countries

In chapters 1 and 2 we looked at the future based on the current status of telecommunications and broadcasting in Japan. The IT Strategy Council²⁴ has as its basic strategy the practical application of IT for all citizens and provision of quick, innovative, and practical assistance that does not restrict current systems, customs, or interests. They are also striving to propose and deploy policies for telecommunications and broadcast convergences in this same spirit. In this era of combined telecommunications and broadcasting we must place importance on harmonizing with the policies of other governments as they relate to converged telecommunications and broadcasting, particularly in light of the global nature of technologies like the Internet. In this chapter, we attempt to contrast and compare the Japanese telecommunications and broadcasting systems with those in USA, UK, France, and Germany and how they arrange, maintain, and administer their standards for separating telecommunications and broadcasting, particularly as regards Internet broadcasting regulations and those governing facilities and programs of broadcasting.

24 IT Strategy Council

- July 2000. Council established under the jurisdiction of the IT Strategy Headquarters (see footnote 43 on page 40) and composed of specialists from the private sector to strategically and emphatically study advances in IT technology. It is chaired by Idei Nobuyuki, president of Sony Corporation.
- November 2000. Basic IT Strategy proposed, which included a "five year plan to become the worlds leading IT country" among other things.

1. Outline of the Structure of Telecommunications and Broadcasting

(Documents 10 and 11)

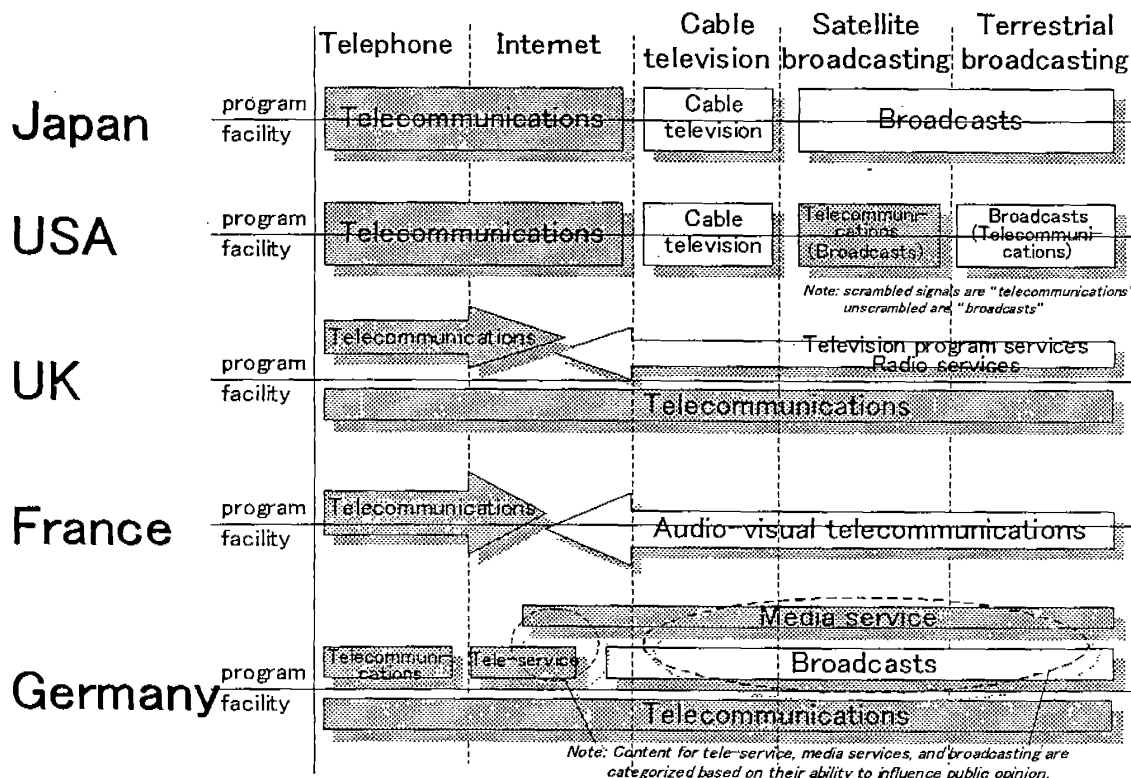
In Japan, the Telecommunications Business Law, Cable Television Broadcast Law, and Broadcast Law contain an outline of "telecommunications" (Telecommunications Business Law, Article 2, Item 1), "cable television broadcasting" (Cable Television Broadcast Law, Article 2, Section 1), and "broadcasting" (Broadcast Law, Article 2, Item 1).

The concepts of "broadcasting" and "telecommunications" are also established as separate concepts in USA, UK, France, and Germany. All countries distinguish between broadcasting and telecommunications in their regulations.

However, there are various methods of handling "hybrid" telecommunications and

broadcast services. Regulations for the programming and network aspects of broadcasting are different for each country, and each EU member nation is tending towards the separate regulation of these areas.

Figure 3-1: Telecommunications and Broadcasting Concepts in Other Countries



(1) USA

Telecommunications Act²⁵ regulates Telecommunications (Article 3, (43)), Cable Service (Article 602, (6)), and Broadcasting (Article 3, (6)). To more specifically regulate each sector, there is Volume 2 Telecommunications Carriers, Volume 3 Provisions Relating to Radio, and Volume 6 Cable Telecommunications.

Telephone and the Internet are "telecommunications," cable television is "cable telecommunications," and terrestrial broadcast and satellite broadcasts are "broadcasting," except for programming distributed to select customers using encrypting technology. Except for the point discerning telecommunications and broadcasting based on whether or not the signal is scrambled, this system is similar to the framework used in Japan.

²⁵ Indicates the Telecommunications Act of 1934, as amended by the 1996 Telecommunications Law. This is referred to as the Telecommunications Act in this document.

(2) UK

Telecommunications is defined in the Telecommunications Act (Article 4, (1)). The Broadcasting Act²⁶ does not define broadcasting per se, but it does outline the broadcasting services provided by public broadcasting companies under Television Programme Service (Article 2, (4)) and Radio Service (Article 84, (1)).

Telephony is categorized as telecommunications, while cable television, satellite broadcasting, and terrestrial broadcasts are categorized as Television Programme Service or Radio Service. Distributing content over the Internet is categorized as telecommunications, but Internet broadcasts are included as Television Programme Service or Radio Service.

Regulations relating to the operation of telecommunications facility, broadcast facility, and other types of facilities, are covered under the Telecommunications Act, whether for telecommunications or broadcasting.

²⁶ Broadcast Law regulates private broadcasts. The Royal Charter and The Agreement regulates the BBC.

(3) France

The *Loi relative a la liberte de communication* ("Audio-visual Telecommunications Law") defines Telecommunications and Audio-visual Telecommunications (Article 2).

Telephony is covered by "Telecommunications"²⁷, while cable, satellite and terrestrial telecommunications are covered by the Audio-visual Telecommunications Law. Internet broadcasts are included in "Audio-visual Telecommunications," while this information transmitted via BBS and websites is not specifically regulated.

²⁷ Specific regulations covering telecommunications are found in the *Code des postes et telecommunications*.

(4) Germany

In Germany, telecommunications is regulated by federal authorities, while broadcasting is regulated by local state authorities. The federal law, *Telekommunikationsgesetz*, defines "Telecommunications" (*Telekommunikations*) (Article 3 Section 16), and each state has a law that defines Broadcasting (*Rundfunk*).

For "hybrid" telecommunications and broadcast services, the categories of *Teledienste* (Tele-service) and *Mediendienste* (Media-service) have been established. Tele-service is defined by Article 2, Item 1, of the Federal Tele-service Law, the law that determines the fundamental conditions of information and telecommunications services: *Gesetz zur Regelung der Rahmenbedingungen für Informations und Kommunikationsdienste* ("German Multi-media Law"). Media-service is defined by Article 2 of the interstate agreement on media-services: *Länder-Staatsvertrag über mediendienste (Mediendienste-Staatsvertrag)*.

Under this arrangement, telephony is categorized as "Telecommunications," while the distribution of content over the Internet is separated into "tele-service," "media-service," and "broadcasting," depending on the ability to influence public opinion. This system is used for cable television, satellite, and terrestrial broadcasts, which are categorized as media-services or broadcasting depending on their ability to influence public opinion.

"Broadcasting facilities, including cable television, broadcast satellites, and telecommunications satellites, are built and operated by Deutsche Telekom."²⁸

28 From the "Data Book, World Broadcasting 2000" compiled by NHK Broadcast Culture Laboratories, Japan Broadcasting and Publishing Association, 2000, 143 pages.

2. Standards for Separating Telecommunications and Broadcasting and Specifications for Internet Broadcasting

Japan has for some time had "hybrid" telecommunications and broadcast services, such as those that use CS to provide information to members only.

CS broadcasting began in 1992, and multi-channel digital broadcasts as well as a variety of telecommunications services that use the CS system began in 1996.

The Ministry of Posts and Telecommunications categorizes services that use the CS system, either as telecommunications or broadcasting, based on the February 1989 interim report put out by the Telecommunications and Broadcasting "Hybrid" Services Study Group and based on criteria that show whether or not the sender's intention is to have the general public directly receive the transmission. This is looked at not only objectively but subjectively as well, using the following five elements.

- (1) The strength of the relationship between the sender and the receiver, and the degree of unique attributes of the receiver
- (2) Transmitted data (is the transmitted data based on a bond between the sender and receiver, and the unique attributes of the receiver?)
- (3) The concealment of the data transmission method
- (4) Management of the receiving device
- (5) The existence or absence of advertising

Also, in December 1997, the ministry created the Guideline for Categorizing New "Hybrid" Telecommunications and Broadcast Services that Use the Telecommunicationsatellite System, which is founded on the above concepts and clearly illustrates the following genres as telecommunications.

- (1) Distribution of management information to the homes of sales people
- (2) Distribution of group information to group members, such as doctors and lawyers associations
- (3) Distribution of classroom images to prep-school students

The increasingly powerful Internet broadcast and other means of distributing content over the Internet with the improved capacity of CPUs and Internet access has been categorized as telecommunications in Japan. The appearance and expansion of "hybrid" telecommunications and broadcast services is a phenomenon common to all countries and a problem that all countries are struggling with, and the method of handling Internet broadcasts and distribution of content over the Internet is not the same for all countries.

(1) USA

Broadcasting is defined by the Telecommunications Act as "the dissemination of radio communications intended to be received by the public, directly or by the intermediary of relay stations," and this line of demarcation for telecommunications and broadcasting is similar to Japan's. However, services that distribute programming to select customers using encryption technology ("Subscription Service")²⁹ are not categorized as broadcasting because signal scrambling exists, as opposed to Japan.

Regulation of Internet broadcasts. While distribution of content over the Internet is considered telecommunications, as it is in Japan, they also have the Telecommunications Decency Act of 1996³⁰ that regulates obscene and harassing telecommunications. And through the Child Online Protection Act, commercial pornographic sites must verify the age of the person accessing the site to prevent minors from doing so (the ruling that this was unconstitutional was upheld by the Third Circuit Court of Appeals and is in the process of being repealed³¹).

29 A decision by the DC Court of Appeals issued on 17 June 1988 upheld an FCC order that said STV (Subscription TeleVision) and DBS (Direct Broadcast Satellite) subscription services were point to multi-point services and not broadcasting since non-subscribers could not receive the signal.

30 The concreteness of the terms "indecent" and "patently offensive" as used in the Telecommunications Act Article 223 Section (a), Item (1) (B) and Section (d) were challenged, and in June 1997 the Federal Supreme Court handed down a decision that these provisions were in violation of the first amendment of the Constitution, which protects the freedom of speech. However, only those regulations of the 1996 Telecommunications Quality Law relating to the transmission of indecent and patently offensive material were deemed unconstitutional, while regulations on the transmission of obscene and lewd material continued to be in effect.

31 The constitutionality of the Child Online Protection Act was also challenged by citizen groups and other groups, and the Philadelphia Federal Court which heard this case repealed this law. On 22 June 2000 the Third Circuit Court of Appeals also supported the federal court's decision, and this law is in the process of being repealed.

(2) UK

The Department of Trade and Industry and the Department for Culture, Media, and Sport examined the financial regulations and content regulations of "hybrid" services and released a white paper in December of 2000 entitled "A New Future for

Telecommunications." This white paper proposed basic regulations for all telecommunications and broadcast media, including the Internet, that "maintain freedom of expression" and "protect children," and they proposed a future study for specific regulations.

Internet broadcasting regulations. The distribution of content over the Internet is treated as "telecommunications" and the Telecommunications Law regulates the transmission of obscene material (Article 43). However, Internet broadcasts are located under "Television Program Services," and in the light of the development of the Internet, the field is left to self-regulation and the content regulations applied to other television program services are not applied here.

(3) France

Article 2 of the Audiovisual Telecommunications Law states that "audiovisual telecommunications" are "symbols, signals, text, images, or sounds and messages of all types that do not have the characteristics of a personal communication, provided for use by the general public or a select category of the public by means of telecommunications," thus "telecommunications" and "audiovisual telecommunications" are distinguished by the characteristic of "personal communication." It follows that scrambled digital satellite broadcasts, for example, are "audiovisual telecommunications," just as they are in Japan.

Regulation of Internet broadcasts. While Internet broadcasts are "audiovisual telecommunications," they are not covered by specific laws as audiovisual telecommunications. It is undetermined whether or not BBS and websites are "telecommunications" or "audiovisual telecommunications." The treatment of content distribution over the Internet may be resolved when the "IT Society Law" is created next spring.

(4) Germany⁸²

Information services are categorized as "tele-service," "media service," and "broadcasting" depending on the degree of influence the distributed content has on individuals or the public at large.

E-mail, weather, traffic, and environmental information services are for personal use, and since their affect on general public opinion is small, they are considered "tele-service." Newspaper company websites, electronic newspapers, text broadcasts,

tele-shopping and other specialty channels and on-demand services are intended for the general public, and since they have a large influence on general public opinion, they are considered "media services."

Regulations on resolving those cases where it is unclear whether or not the content of some carrier falls into the "media service" category or "broadcast" category are contained in the Interstate Broadcast Agreement (*Rundfunkstaatsvertrag*) (Article 20 Section 2). Specifically:

A. If the carrier believes its service is a media service and has applied for a broadcast license to the State Media Committee, the State Media Committee conducts an inspection, and if the service in question is judged a non-broadcast service, they must issue a notice to this effect to the carrier.

B. If the carrier believes its service is a media service and has not applied for a license and the State Media Committee has determined, with the agreement of other State Media Committees, that the service in question falls into the category of "broadcasting," the carrier must, of its own accord and within 6 months of receiving the notification from the State Media Committee, either apply for a broadcasting license or modify the service in question so that it does not fall into the broadcasting category.

Regulation of Internet broadcasts. Of all the content distributed over the Internet, media services have a large impact on public opinion and are most similar to broadcasting. The state agreement on media services establishes regulations requiring that the name and address of the producer be displayed (Article 6) and that inappropriate material not be distributed to minors (Article 8).

In July 1997 the German Multi-media Law partially revised federal penal code and the law relating to the distribution of harmful documents to minors (*Gesetz über die Verbreitung jugendgefährdender*), and by appending data storage devices (*Datenspeicher*) to the definition of "document", a clear legal basis for the prohibition of distributing pornographic material to minors over a network was established.

32 References used for this part were from Suzuki Hidemi's (assistant professor at Hiroshima University, Faculty of Law) article "Freedom of Expression on the Internet: Status of and Issues in Germany's Multimedia Legislation" (Jurist No.1153, 1 April 2000), "The Responsibility of Providers Under Germany's Multimedia Legislation: Legislative and Autonomous Regulation." (Hiroshima Law School, Volume 23, Number 2, 1999), and documents included in Mr. Suzuki's presentation to the 5th Broadcast Policy Research Group Convention.

3. Program and Facility Regulations

Regulations relating to telecommunications are mainly concerned with facilities.

Those relating to broadcasting, however, are quite different. For example, in Japan, except for CS and BS digital broadcasts which use the program/facility-supplying system, those responsible for the creation of programming and station operators or cable operators are considered essentially the same, and both the providers of programming and broadcast facility operators are regulated under the same broadcast laws.

USA also regulates both of these entities under the same law. French regulation of facility operators is effected with the Audiovisual Telecommunications Law, even when there are substantive differences between the program providers and facility operators. In contrast, both UK and Germany regulate program providers and facility operators separately, both countries choosing to regulate the network providers under laws governing telecommunications.

The following table shows these relationships.

Table 3-1: Regulation of Programming and Network Operation

		Program Providers	Network Operators
Japan	Terrestrial BS Analog Broadcasts	Broadcasters (broadcast station license holders) <Broadcast Law> <Radio Law>	
	Cable Television	Cable Television Broadcast Companies (Cable Network Operators) <Cable Television Broadcast Law>	
	CS BS digital broadcasts	Program-Supplying Broadcaster <Broadcast Law>	Facility-Supplying Broadcaster (broadcast station license holders) <Broadcast Law, Radio Law>
USA	Terrestrial broadcasts	Broadcast Station License Holders <Federal Telecommunications Act Volume 3>	
	Cable television	Cable Operators <Federal Telecommunications Act Volume 6, State Laws>	
France		audiovisual telecommunications/services license holders <Audiovisual Telecommunications Law>	
UK		Television broadcast service license holders <Broadcast Law>	Telecommunications carriers <Telecommunications Law, Radio Telecommunications Law>
Germany		Program providers <State Broadcast Laws>	Telecommunications Carriers (Deutsch Telecom)

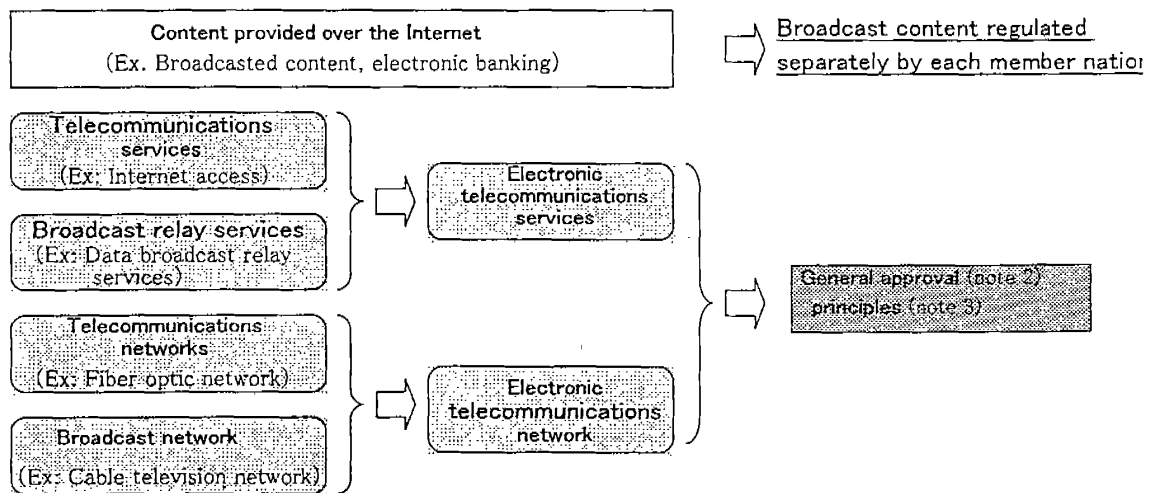
NOTE:

1. Television broadcasts by public networks.

2. The name of the law containing the regulations governing this activity is shown in angle brackets (< >).

The regulations governing these fields are different in each country, and EU member nations are tending towards the separate regulation of programming and network operation as evidenced by the "Legislative Proposals for a New Regulatory Framework for Electronic Telecommunications and Associated Services" (July 2000), which proposes directives that separate programming from network operation and establishes a uniform regulatory system for network operation between member nations. This proposal is currently being submitted to the Minister's Conference and the European Parliament, and if they approve it after working out any changes, a decision would be handed down by early 2001 with the member nation governments possibly making it into law by the end of 2001.

Figure 3-2: Proposed Regulatory Framework for Electronic Telecommunications(note 1)



NOTES:

1. This proposal is a package of directives. The definition of "electronic telecommunications" and general approval principles as well as connectivity issues and protection of personal information are established by these directives. A "directive" is a law that is legally binding on the people of each nation after being ratified by the governments of member nations.
2. Equivalent to "register" or "notify" in a Japanese business law context.
3. Before granting broadcast licenses that assign frequencies, telecommunications numbers, and public utility rights, a regulatory agency of the member nation must first perform an inspection.

Chapter 4 Government Policies for the Stable Expansion of Converged Telecommunications and Broadcast Services

1. Basic Concepts

As outlined in Chapter 2, the phenomenon of converged telecommunications and broadcasting has continued to grow and diversify in recent years. And while up till now a distinction has been made between telecommunications and broadcasting, and program producers and network operators have been fundamentally united within the framework of the broadcast system, actions have been taken at each stage their advancement. An example of this is the measure that allows shared use of transmission lines and facilitates merging in this area.

Figure 4-1: Existing Convergence Measures

Converged Services	Converged Transmission Lines	Converged Terminals	Converged Operations
<ul style="list-style-type: none"> -- Relaxing the regulation of content depending on the characteristics of the media - Applications of harmonization of program is limited to television broadcasts(land NHK radio)only.(1988) - Obligation to create standards of broadcast programs and consultative organization on broadcast programs is abolished for certain special and temporary broadcasts expanded.(1988) - Further reduction of obligations to create program standards and program deliberation committees for certain special and temporary broadcasts expanded.(1988) - ISPs and industry groups establish rules to resolve the problem of illegal or harmful information over the Internet 	<ul style="list-style-type: none"> -- Implementation of a system that allows shared use of transmission lines - Establishment of the program/facility-supplying broadcast system.(1989) - Cable television services are provided over fiber optic networks on a subscriber basis made possible through the two licenses for facility establishment which applies to telecommunications carriers under the Telecommunications Law and to cable carriers under the Cable Television Broadcast Law. 	<ul style="list-style-type: none"> -- There are no regulations regarding development and introduction of original innovative terminals <p>(Interactive telecommunications and broadcast terminals are being developed and sold, such as PCs and TVs that can access the Internet and receive television broadcasts and record programs or set-top boxes for accessing the Internet)</p>	<ul style="list-style-type: none"> -- There are no laws that regulate telecommunications carriers entering the broadcast market or broadcasters entering the telecommunications market, except for NTT and NHK, which are regulated as special corporations. <p>(As of 1 December, 2000, there are 183 cable carriers, providing Internet access and telephone services)</p>

As outlined in Chapter 3, the telecommunications and broadcast systems of each country are not the same, but they all consider broadcasting as separate from telecommunications. Each country, in responding to the convergence phenomenon, is trying to make progress by separating program production regulations and network operation regulations and accommodating "hybrid" services. Japan must expedite measures to deal with these changes as well. An increasing number of specialty channels, development of new platform businesses in both telecommunications and

broadcasting, and an increasing influence of Internet broadcasting and other content—these will certainly define the wave of the future. In responding to these changes and advancing the IT revolution in Japan, it is vital that we accelerate the establishment of a super high-speed Internet backbone and digitize broadcasting and not miss the opportunity to implement policies that facilitate the healthy development of converged telecommunications and broadcast services, which lead to new business and a prosperous existence.

For this purpose, it is vital that the following info-telecommunications policies be put in place with speed.

A. Establish a system that further separates program and network regulations in fields where transmission lines are merging.

B. Accelerate the implementation of a super high-speed Internet backbone and digitize broadcasting in order to improve and enrich the info-telecommunications infrastructure.

C. Support business development and easy entrance into the platform business field, which facilitates converged telecommunications and broadcast services.

D. Establish rules regarding the distribution of information in order to resolve the problems presented by the convergence of telecommunications and broadcasts, and thus establish a healthy environment for users.

E. Establish an environment supportive of content producers and providers.

2. Establishing a System to Accommodate the Convergence

(1) Establishing a System for Telecommunications and Broadcasting Convergences

1. Present Day

Since the introduction in 1989 of the program/facility-supplying broadcast system, which could separate program production and network operation in CS broadcasting, satellite telecommunications carriers have been providing network services as facility-supplying broadcasters with their license to operate wireless broadcast stations.

Since July 1997, several cable operators have been using NTT's (now NTT East and West regional companies) test services to provide cable service via FTTH.

2. The Direction of Government Policies

The CS digital broadcast frequencies are assigned by the government in accordance with a broadcast frequency usage plan so as to help achieve the goals of the programs listed in the basic broadcast promotion plan, and satellite operators are not allowed to reallocate those facilities for telecommunications purposes in response to demand. However, with the progress made in CS digital broadcasting and the multiple channels it provides, it is necessary to allow satellite operators to use broadcast facilities to provide telecommunications services when the demand arises.

Currently, telecommunications carriers require approval pursuant to Telecommunications Law and cable operators require approval pursuant to Cable Television Broadcasting Law in order to provide cable service through FTTH. This situation needs to be changed and the facility approval required by the Cable Television Broadcasting Law for the FTTH portion must be removed so that it is easier to deploy businesses that use FTTH.

To accomplish this, a system should be established which further separates the regulation of program production and network operation. Doing so will make network usage more flexible. Simultaneously, efforts to reduce investment costs for program producers and stimulate content production are vital to the increasingly important content production field.

Some of the measures that should be advanced include, allowing satellite operators to provide broadcast or telecommunications facilities based on demand, allowing telecommunications carriers to provide cable television broadcasts via FTTH, treating the provision of network services as a telecommunications business, and creating a system for broadcasts that use the telecommunications carrier services.

(2) Businesses that Distribute Content Over the Internet

1. Present Day

The content distributed over the Internet comes in a variety of text and graphics, sound and video, with an ever widening array of description methodologies, and its use is continuing to spread, from office to home and as an everyday appliance to our children. Under these circumstances, social concern and apprehension is growing about crime, obscenity, slander, defamation, invasion of privacy, and other illegal/harmful information³⁴ perpetrated via the Internet.

Currently, Japanese ordinances regarding telecommunications and broadcasting set no specific regulation regarding Internet content, and regulation based on other ordinances is entrusted to the content distributors themselves.

2. The Direction of Government Policies

The expressive power of Internet content has increased with the evolution of the broadband network, and the merging of terminals allows access from the living room. The Internet is being used by children on a daily basis. This type of influence in the society is expected to grow into the future. In contrast to the self-regulating broadcast companies under the Broadcast Law, how to deal with content distribution over the unstructured Internet has become an issue for the society.

When one considers the Internet today—the social influence and expressive power of its content, the potentialities of its innovative technologies, and the international harmonization of its global aspect—one can see there is a need to introduce regulations in the same vein as those presently govern broadcasting.

³⁴ Examples of illegal/harmful information

- pornographic images published on websites, accessible by many people indiscriminately
- Slanderous or defamatory material posted on a bulletin board
- Personal information published on a website or sold without permission
- Poisons or drugs (such as potassium cyanide) sold on a website
- Using, copying, or altering copyrighted material

³⁵ The Law Regarding the Regulation and Proper Management of "Fuzoku" Business was amended in 1999. This amendment introduced a registration system for businesses that distribute sexual content over the Internet and restricted transmission to people under 18 years of age.

Thus, at the very least government measures like those given below, which form the basis of self-regulation, should be quickly deployed for user protection, and regulations like those currently governing broadcasting should not be implemented.

A. Expedite creation of voluntary rules by content providers

Since the measures taken by providers against those that distribute illegal/harmful information over the Internet are expected to grow in importance, the government should support activities that lead to the implementation of a voluntary and fair system. For example, content distributed over mobile networks is the core of the so called M-commerce, the business model pioneered by Japan, and due to its explosive growth, illegal/harmful information abuses have also begun to emerge. Many mobile Internet users are young people, and considering the potential power brought about by future high-speed access, effective measures must be quickly examined.

B. Construction of an efficient filtering system

With the self-regulation of the content providers and the content filtering methods available to the user, a multiplier effect is expected.

Internationally, the ICRA³⁸ (Internet Content Rating Association), established around USA's RSAC³⁶ (Recreational Software Advisory Council) and UK's IWF³⁷ (Internet Watch Foundation), is advancing the concept of a standardized rating system.

36 RSAC: An NPO in the U.S. that provides open, objective content query system for use the by public, parents in particular, when making important decisions regarding electronic media. The RSACi (Internet rating standards from RSAC) is based on the results of research on the affects of media on children, conducted over 20 years by Professor Donald F. Roberts at Stanford University. There are categories for violence, nudity, sex, and language, and Internet content can be rated in each category on a scale from 0 to 4. This is the default standard for independent rating in USA.

37 IWF: A British NGO established in 1997 and funded by British ISPs, they operate a hotline for reporting illegal content as well as promote filtering and rate legitimate content.

38 ICRA: Established with the primary goal of creating a de facto standard of content rating centered around the RSCA and IWF models. In may of 1995, they became a non-profit corporation in the U.K. and absorbed the RSAC. They operate based on financial support from the EU and private businesses in the info-telecommunications and IT fields.

Since the concept of "harmful" varies depending on the cultural background of the society, we must examine the filtering systems used in Japan and this international activity from the viewpoint of Japanese culture.

From a technological aspect, progress is being made in research and development to combine rating technology with ratings information, for example the filtering technology used by the TAO (Telecommunications Advancement Organization of Japan). There is room for growth in the field of filtering technology, and we must increase the effectiveness of user protection through support of private research and development in this sector.

(3) Revising the System in Response to Broadcast Diversity

1. Present day

With the 1988 revision of the Broadcast Law, the "Application of Harmonization of Broadcast Programs"³⁹, was no longer applied to short-wave, data, and high-volume broadcasts, nor to medium-wave broadcasts by private broadcasters nor to VHF broadcasts by private or university broadcasters. In addition, broadcasters were no longer required to establish program standards⁴⁰ or program review bodies⁴¹ for specialized broadcasts of financial, meteorological, sports, or other news commentary programming.

And as stated earlier, in order to clearly delineate telecommunications and broadcast services, the "Guideline for Differentiating Telecommunications and Broadcasting as Relates to "hybrid" Services that Use Telecommunications Satellites" was established in 1997 for services that use the CS system.

39 Uniform Programming Principle: "when compiling broadcast programming for domestic television broadcasts, the broadcaster must maintain consistency between broadcast programs within the established categories of culture, education, news, or entertainment, except for those broadcasts with special business plans. (Broadcast Law Article 3 Section 2 Paragraph 2)

40 Program standards: "Broadcasters must set program compilation standards ("Program Standards") based on the program category or subject, and must follow this in compiling programs. (Broadcast Law Article 3 Section 3 Paragraph 1)

41 Establishment of Program Review Body: "In order to maintain program integrity, broadcasters must establish a broadcast program review body ("Review Body"). (Broadcast Law Article 3 Section 4 Paragraph 1)

2. The Direction of Government Policies

A variety of services are expected to emerge as digital broadcasting comes into its own with BS digital broadcasting starting in December of this year, 110 east longitude CS digital broadcasting starting next year, and digital terrestrial broadcasting to begin in 2003.

As part of this process, there will possibly be cases where the application of the broadcast laws will need to be reviewed, and ideally, these cases will be dealt with in an a flexible manner in light of the future convergence of telecommunications and broadcasting.

While examination of the convergence of telecommunications and broadcasting continues, we should examine the need for preparations in the area of application procedures.

3. Establishment of Info-Telecommunications Infrastructure

1. Present day

Though working to improve quality and stability in converged telecommunications and broadcast services, there is a bottleneck in the Internet backbone, which includes the access network and routers. And while an improved info-telecommunications infrastructure means a variety of programming services and advanced broadcasting services, there is a lack of quality digital content.

2. The Direction of Government Policies

As we move into the age of the broadband network, the roll played by a super high-speed Internet network grows, and its early creation can be achieved by facilitating competition in the field as well as research and development. Digital broadcasting is expected to carry much of the load of the info-telecommunications infrastructure, and a smooth transition to the digital age is needed. Since the robustness of multi-use content for the broadband network will influence the competitiveness of Japan's content production industry, we must make strategic support of this industry.

Putting the following policies into play is probably the most important issue at this time.

A. Promote substantive competition in the access network field by expediting the introduction of multiple access channels, such as FTTH, DSL, cable, and FWA, while facilitating channel construction. Also, continue to strengthen connectivity rules and push the establishment of fair competition rules.

B. Advance research and development of high-speed photonic network technology and wide area DSL development.

C. Develop supportive measures for the installation of a subscriber type fiber optic network through telecommunications carriers and cable operators, in addition to promotional measures for DSL, FWA, and other broadband media. (Expand or extend the Telecommunications Infrastructure Improvement Extra Measures Law —due to expire in May of 2001).

D. Advance measures to reassign analog frequencies with the digitization of terrestrial

broadcasts, and move ahead with research and development of broadcast systems and advanced content production that employ digital technology.

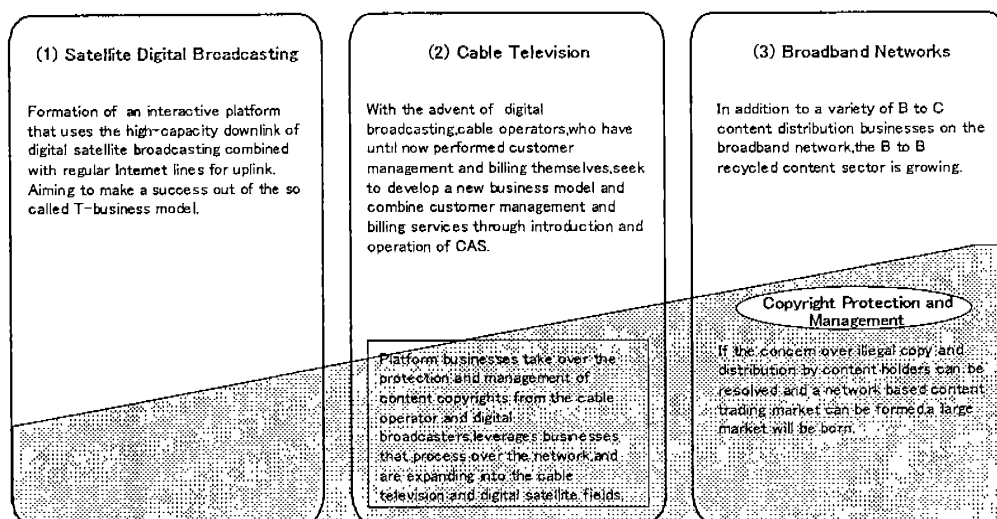
4. Support Development of Platform Businesses

1. Present day

Platform businesses perform some or all of the functions required of content/application providers, such as billing, fee collection, and distribution.

Interest in the platform business has risen on the wave of bigger trends like real digital broadcasting (BS, east longitude 110 CS, and terrestrial digital broadcasts), true high-speed Internet access (cable, DSL, fiber optics, IMT-2000), and the appearance of one-source, multi-use content production. For example, the trends in each area of the broadband network field, as shown in the following diagrams, will most likely become more pronounced. In particular, if we examine the rollout of broadband, we see that smooth development of one-source, multi-use content production and recyclable digital content is needed, and that a copyright protection and management business model that is beneficial for both the user and copyright holder is in demand.

Figure 4-2: Platform Businesses and Copyright Protection/Management



2. The Direction of Government Policies

A. Assisting the Development of Leading-edge Converged Telecommunications and Broadcast Services

Japan is behind in PC based Internet services. However, Japan has maintained a competitive edge in the intelligent home appliance Internet, mobile Internet, and other fields. Policies are called for that contribution to the world while improving Japan's

competitiveness by accelerating converged telecommunications and broadcasting system development as well as cutting-edge convergence service implementation.

Thus, Japan should investigate the establishment of a new system that supports private business model development, which would lend corollary support to the private sector efforts of platform businesses and content providers that develop cutting-edge convergence services. An example of this might be a system that lends general support to telecommunications system development, which forms the foundation of convergence services.

Specific ideas include subsidizing telecom system developers and building a test bed for testing these new systems and opening it to the private sector in order to verify workability as quickly as possible.

B. Establishment of a Business Environment Conducive to e-Business development

In order to smoothly and safely implement e-businesses, electronic signatures and electronic verification are required, and all types of authentication businesses have begun to appear to fill this need. So that users can feel secure by using electronic signatures and authentication services, legal handling of electronic signatures should be clarified, and while steadily pushing ordinances that smoothly implement the Laws Relating to Electronic Signatures and Authentication Services (document 12), which establishes a certification system for authentication services, a system for the accurate verification of the document time stamp should be investigated.

C. Development of Security Technology

In order to increase security when providing or using convergence services, research and development of fundamental network security technology should be advanced. Some of the vital areas are advanced encryption technology, guaranteeing content authenticity, network damage analysis and recovery support, denial of service attack defense, and system/user anti-virus protection.

5. Establishment of Info-Telecommunications Rules

(1) Controlling the distribution of illegal or harmful information

1. Present day

Currently, ISPs (Internet service providers) are creating measures to deal with the transmission of illegal and harmful information over the Internet.⁴² They are doing this through the autonomous regulations of an industry group. While these autonomous regulations have achieved some success, many cases are difficult to adjudicate, and ISPs must bear the full responsibility of removing illegal material with all of the attendant risks.

In cases of slander on BBS, for instance, ISPs have not released the names of the originator because of laws protecting freedom of speech or confidentiality, except in criminal cases where they were required to do so by court order. This anonymity effectively takes away the opportunity for the victim to sue the perpetrator.

2. The Direction of Government Policies

The anonymity of the Internet has been misused for slander, and the targets of this slander have been left with no recourse. Keeping in mind that protecting anonymity may result in defamation and promote invasion of privacy, definite rules for responding to the distribution of illegal or harmful information should be quickly developed.

Specifically, rules that clearly define the role of the ISP in transmitting or deleting illegal material are needed. There is also a need for rules governing the disclosure of the senders information in certain cases and when requested by the victim.

⁴² In February of 1998, the Telecom Services Association, Inc. created the Guideline for Codes of Practice for Internet Service Providers, which details guiding principles for ISPs. In January of this year, a model contract based on this guideline was created and distributed.

(2) Protecting Personal Information

1. Present Day

In August of this year the IT Strategy Headquarters⁴³ created an outline of the fundamental legal structure⁴⁴ that will serve as the core of Japan's personal information protection system, and they have created a bill for submission to the next regular session of the Diet. As a result, work on bills is progressing within the government.

In the converged telecommunications and broadcasting age, work, personal life, and participation in the society via the Internet will expand, and the amount of personal information transmitted over the Internet will be larger than ever. If there are no rules regarding the proper handling of personal information and no mechanism to enforce their application, user confidence in e-businesses and other activities that use the Internet will be shaken, and the once unquestionably beneficial business model may be shunned.

2. The Direction of Government Policies

Use of the intelligent home appliance Internet and the mobile Internet is expected to grow as a result of the proposed Personal Information Protection Law, which will be submitted to the regular session of the Diet in 2001. Since independent action by various private sector services to establish rules of distribution that effectively deal with personal telecommunications is desirable, the government should actively support these types of activities.

43 IT Strategy Headquarters

- Established in the cabinet in July of 2000 to address the global IT revolution, bring the benefits of the IT revolution to every citizen, and generally advance measures aimed at making Japan an internationally competitive IT country. It is composed of all cabinet members with the prime minister as the chairman.

44 Summary of the "Outline of Fundamental Legal Structure for the Protection of Personal Information"

- Purpose

To protect the rights and benefits of individuals while preserving the usefulness of personal information by setting fundamental conditions for the proper handling of personal information.

- Fundamental Principles

Restricted use, proper acquisition, maintaining data integrity, implementing security measures, maintaining transparency.

- Obligations of Businesses that Handle Personal Information (temporary name)

Restriction of third-party use, disclosure to the person, correction when demanded by the person, establishment of penalties for failure to comply with remedial orders of the minister in charge, etc.

6. Creation of a Business Environment that Facilitates Content Provision

(1) Maintaining Impartiality towards Content Providers

1. Present Day

An increased variety of content distribution routes means a larger role for content providers and platform businesses. Platform businesses manage customers, process fee collection, and assist in the creation of strategic plans, and their role in digital satellite broadcasting and cable television is growing.

On the other hand, telecommunications carriers, broadcasters, and platform businesses influence content providers in a variety of ways, and the connection between platform businesses and the carriers and broadcasters will continue to grow.

For example, the sudden spread of the mobile Internet was brought about by telecommunications carriers who provided a platform for the collection of fees, but if a provider of entertainment wished to use this platform, they must be selected by the telecommunications carrier as an officially sanctioned site. And even if selected, the content provider's business model is heavily restricted by the telecommunications carrier, preventing them from freely pricing items, carrying advertisements, and linking to other sites. While these restrictions are effective in removing inferior content, it restricts the ingenuity of the content provider.

2. The Direction of Government Policies

In order to create a situation where the info-telecommunications infrastructure and content create a synergistic effect, we must create a business environment in which the content providers and others can leverage the principles of competition to the fullest extent.

If telecommunications carriers and content providers require an agreement on set standards for applications and content distributed over their own networks or through a platform, then information about these standards must be made public under fair conditions. On the other hand, in order to bring forth a new business model among so many players, there must be competition for a de facto standard. And measures designed to stimulate convergence services should be quickly formed up while balancing the benefits of driving forces, standards, and commonality of features.

The customer information collected during the course of business will become even more valuable as e-business permeates our entire social structure. Thus, while we expect personal information to be held in the strictest confidentiality, some demand a mechanism for disclosing, under certain rules, information that will not compromise the customer's privacy but will hopefully stimulate e-business. For example, we should

further examine the handling of subscriber information, such as mobile Internet terminal ID, access count, and other information used to show subscriber trends. This should be looked into along with the effort to protect personal information, with the goal of creating a mechanism acceptable to users, telecommunications carriers, and content providers.

(2) Expedite the Formation of a Content Distribution Market

1. Present Day

Through the spread of cable, DSL, and fiber optic services, a high-speed access environment, necessary to high-quality content distribution services, is being established. But there is a deep-seated concern with copyright holders about unauthorized copy and volume distribution of material over the Internet. The establishment of a method in which digital content can be used while effectively protecting the copyright holder is the issue that must be quickly resolved to begin the age of converged telecommunications and broadcast services. And to prevent the isolation of the Japanese content distribution market from the international distribution market, resolution of this issue should be worked at earnestly.

The code system required for content copyright protection and management is not standardized; there is no progress being made on a content database; even if there were a database, there is no way to search it; and even if the desired content could be found, it cannot be used since there is no way to know who the copyright owner is; and even if the owner is known, there is no way to pay the fee. This situation needs to be improved.

2. The Direction of Government Policies

A universal content coding system is vital to protect and manage copyrights. This is the most important issue. If a system is built that makes rights consignment and conditions flexible and accelerates processing as well as filling user and copyright holder needs, we can expect smooth progress in processing copyrights and other rights when distributing contents BtoC over the broadband network as well as BtoB, such as between copyright holders and cable/satellite broadcasters. There are already groups in the private sector working on the universal coding issue (document 14). Testing and demonstration of copyright protection and management systems is progressing with the TAO's (Telecommunications Advancement Organization of Japan) consignment research program called "Content Distribution Platform Demonstration and Testing," begun in August of this year, and other projects have begun in the private sector.

While trying to maintain close relations with these projects, we must support early standardization of a universal content coding system, accelerate implementation of a new Japanese copyright protection and management system, and advance research and development in content management technology.

Technological innovation has given us Napster⁴⁶ and Gnutella⁴⁷, which make it easy to exchange content over the network. While putting sufficient effort in protecting copyrights, we must search for ways to make use of new technologies and lead the world in implementing a smooth, safe, content distribution network.

In order to have a variety of content in distribution and a number of choices for users, we need to create a system that is as open as possible and conducive to the development of content production businesses of all types. If the intelligent appliance Internet spreads, it will spread to every corner of daily life, whether one is aware of the Internet as such or not, and a variety of content will be distributed over it.

45 Association for the Advancement of Content Distribution Platform Demonstration and Testing

(1) Purpose

To provide a system that businesses participating in the TAO's "Content Distribution Platform Demonstration and Testing" use to effectively create high-quality content that can be safely and smoothly distributed over the network. In other words, to jointly advance demonstration and testing of content distribution platforms and share test information, exchange views, and disclose research results.

(2) Participating Businesses and Groups

A total of forty content creators, content holders, manufacturers, communication and broadcasting companies.

(3) Headquarters: Association of Media in Digital, Inc. (AMD)

(4) Demonstration and Testing Period: October 2000 to March 2001

Note: The term for consigned companies will be extended to one year for the purpose of generating test results.

46 Napster

Napster, a US company, provides software with which MP3 music files can be exchanged over the Internet. The users access Napster's server and can access music files on other user's hard disk drives.

47 Gnutella

Using the Internet, users can freely exchange music, video, and other files without accessing an intermediate server.

Thus, we must work to bring the safety and confidence of closed systems to open systems with their ease of use and advanced features. We should aim for expansion of the content distribution market by creating a mechanism by which telecommunications carriers, terminal manufacturers, and content providers can shoulder the responsibility, rather than simply shifting it from owners to users.

In addition to the above, we must actively support and promote creators of content with global reach, IT personnel, and use of the Internet in school curriculums and other public uses, as well as the formation of attractive content.

發表日期：2001 年 2 月 2 日〔星期五〕

主題：對於「有關確保網際網路上之情報流通的適當研究會」報告書之意見募集結果

總合通信基盤局

茲公佈自 2000 年 12 月 20 日〔星期三〕至 2001 年 1 月 19 日〔星期五〕實施之募集對於「有關確保網際網路上之情報流通的適當研究會」報告書之意見，如附頁。

聯絡人：總合通信基盤局電器通信事業部
資費 service 課電氣通信利用環境整備室
〔承辦：大村課長輔佐，田中係長〕
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另附
對於「有關確保網際網路上之情報流通的適當研究會」報告書之意見募集結果

1. 實施日期

〔1〕募集期間：2000 年 12 月 20 日〔星期三〕~2001 年 1 月 19 日〔星期五〕

〔2〕實施方法：以登載於總務省之 Homepage 等方法謀求周知，並以電子郵件、傳真、郵寄的方式募集意見。

2. 意見的到達件數

19 件〔內含個人 5 件，法人，關係團體等 14 件〕

3. 意見的概要〔關於寄到的意見之主要內容，請參照附頁。〕

〔1〕關於對在網際網路上流通的違法、有害資訊由 Service provider 等對應

1. 關於全體

關於在網際網路上流通的違法、有害資訊，促進由 Service provider 等採取自主性的對應，有關為提高其實效性有必要整備法律制度方面，大致得到贊成的意見。

2. 關於成為檢討之對象主體

關於為促進由 Service provider 等自主性的對應之檢討的對象主體，要訂定也能對應新出現的服務為對象及不論營利、非營利均為對象，得到贊成的意見。

3. 關於成為檢討之對象的資訊

關於為促進由 Service provider 等自主性的對應之檢討的對象資訊，要訂定民法上違法的資訊為對象及以領域橫斷性的全部違法資訊為對象，得到贊成的意見，而且也有將關於刑法上違法的資訊也應該列入對象的意見。

4.關於有關責任的明確化，整備規則〔rule〕之理想狀態

關於為謀求因為 Service provider 等侵害他人的獲利利益的資訊之對應措施的責任明確化，而整備 rule〔規則〕的必要性方面大致得到贊成的意見。又，對於其規定的方法，關於規定 Service provider 等不要負責任〔可以免責〕情形的所謂「安全避難港〔safe harbor〕規定」大致得到贊成的意見。關於具體性的規定之理想狀態方面，要設定明確化對於 Service provider 等不會發生人為義務的情形等用心的規定，要規定假如 Service provider 等於誠實地判斷後認為適當而對應的情形時不必負責任，關於要明示假如 Service provider 等服從就不會被追究責任之形式性的手續，關於引進 Notice and take down 手續收到多數的意見，既然均大致為贊成的意見，可是關於手續之具體性的原有狀態方面，有相差的意見。

★Notice and take down 手續：Service provider 等，從主張權利利益處到侵害者收到以滿足一定形式性的要件之通知情形時，因為刪除成為問題之違法的情報等而不會被追究責任的手續。

5.關於有關公佈發信者情報的規則整備之理想狀態

關於特定在網際網路上流通之違法的資訊之發信者，為促進解決因為當事人所引起的糾紛，公佈發信者情報而整備規則的必要性方面大致得到贊成的意見。

關於規定要公佈的要件方面，對本報告者舉列的要件【〔I〕權利受侵害的蓋然性很高〔ii〕為了要接受救濟必要所不可缺】，雖然有過於嚴格的意見，可是另一方面也有應該充分檢討是否真的有必要救濟，被害者的意見。關於應判斷公佈是否恰當的主體，由法院判斷，大致得到贊成的意見。又，關於具體性的公佈手續之理想狀態方面，收到應該要採取迅速的手續之意見。

其他，也有應該要由 Service provider 等負起發信者情報的保存、收集之義務的意見。

〔2〕關於對於在網際網路上流通的違法，有害資訊在收信者側的對應

對於資訊收信者成為問題的資訊，為要整備能夠主體性的、主動性的對應之環境，有必要謀求促進 labeling、filtering 的普及方面，沒有特別的意見。

4.今後的方針

在總務省，充分根據所收到的意見，對於流通在網際網路上之違法、有害資訊，促進由 Service provider 等之自主性的對應，為提高其實效性，進行有關 Service provider 等之責任的明確化及有關公佈發信者情報的法令制度之整備具體性的檢討之同時，為要使資訊收信者能夠主體性的、主動性的對應，支援朝向促進普及 labeling, filtering 的努力等，推動為確保網際網路上的資訊流通之恰當的對策。

※參考資料

「有關確保網際網路上之情報流通的適當研究會」報告書

以上

對於「有關確保網際網路上之情報流通的適當研究會」報告書之主要的意見

I.關於對在網際網路上流通的違法，有害資訊由 Service provider 等對應

1.關於全體

- ◆ 從抑制侵害著作權等不正當行為，整備所有的國民均能安心利用網路之觀點，有必要將克服匿名性，追究侵害者的責任及救濟被害者為手段，制定制度予以保障。
- ◆ 當要整備利用環境時，應該促進由 Service provider 等之自主性的對應，採用提高時效性的對策。
- ◆ 基本上應由發信者負擔責任，重要的是要整備以社會上的體制(scheme) 能夠讓發信者負擔責任的結構。

2.關於為促進 Service provider 等自主性的對應，而成為檢討的對象之主體

- ◆ 因為可預料到由於今後的 Network business 之進化，會出現新的 Service，所以主體範圍的規定不要採用列舉性的限制。而以包括性的規定較為妥善。
- ◆ 希望於立法時，慎重地檢討在儘可能的限度內穩進配合利用者之對應的責任範圍及要件。
- ◆ 因為 provider 等所提供之 Service 有各種各樣者，所以將這些予以某一程度的類型化，關於各種情形深入檢討，對於具體性的對策也比較有效。
- ◆ 不要僅以電信業者為對象，應以不論營利、非營利而已廣泛的 Service provider 等為對象的新立法來對應。

3.關於為促進由 Service provider 等之自主性的對應，成為檢討之對象的資訊

- ◆ 為了要整備由於促進致力於自主性的利用環境。有必要將應該採取刪除等之措施的對象限定在能夠得到社會上的同意，而且比較概念很明確之違法的資訊，使 Service provider 等能夠具有明確的行動指針。
- ◆ 假如按照各法律制度要採取不同的對應，則因為 Service provider 等之實務上的負擔過大，所以其制度希望能採取領域橫斷性的對應。
- ◆ 因為由於對實務上的問題，權利設定其差異並不恰當，所以有必要採取權利橫斷性的制度設計。
- ◆ 假如依照各種權利採取不同的 Service provider 等可以免責的手續，則會增加 Service provider 等的負擔，而且可能會成為採取迅速地對應之障礙，所以應採用水平的，領域橫斷性的方法(approach)。
- ◆ 假如按照智慧財產權，隱私權(privacy)侵害等個別之法律制度做不同的應對。因為 Service provider 等之實務上的負擔很大，預料於發生複合性的紛爭(trouble) 會混亂，所以應採用領域橫斷性的對應。
- ◆ 因為 Service provider 等在刑事上應負擔到何種程度的作為義務不明確，所以應設定對法律的責任全般能通用的規定。有必要列入限制過度追究刑事責任的內容等一定的措施。
- ◆ 在網際網路上的差別煽動，從高級資訊化社會之爆炸性的發展及其影響力，被害者的救濟之觀點，應理解為暴力、犯罪。

4.關於為謀求因為 Service provider 等侵害他人的權利利益的資訊之對應措施的責任之明確化，而整備規則之理想狀態

(1)關於全體

- ◆ 對於創設明確化不要負責任之情形的規定，有關誠實對應的免則規定，有關 Notice and take down 手續的規定，因為可成為由 Service provider 等對應的指針(不是使其發生作為義務者)，所以贊成。
 - ◆ 最少 provider 具有監視不正當行為，努力對於違法、有害資訊的提供行為予以自主性的停止之義務，所以應創設為履行其義務自主的停止時，除非認為有重大的過失，否則應予以負責的制度。
 - ◆ 假如考慮，在網際網路上的資訊發信之匿名性，被害之擴大的實際狀態，則因為 provider 絕對不是在中立的立場，莫如說是在加害者的立場，所以不能免除損害賠償的責任，假如由被害者(加害者)提出告訴的情形時，應向加害者(被害者)求償就可以，因此不可以將此置換為免責的問題。
 - ◆ 營運網際網路的 provider，具有要抑制因為所營運的網際網路而發生的被害到最小限度之社會責任，又，要培育高品質的 provider 管理者，也是在此責任中有所必要。
 - ◆ 讓媒介資訊之流通的 Service provider 等負起責任的方法最為妥當。
 - ◆ 對於要判斷特定之資訊是否違法極為困難。
(關於要規定 Service provider 等的義務之方法)
 - ◆ 現在要課予監視義務或包括刪除的作為義務，可以說極為困難，所以在這樣的狀況之下，要對 Service provider 等課予某些作為義務並不恰當。
 - ◆ 關於資訊的擱置不顧之作為義務，對於過失的要求之注意義務，在現階段要將其全部明確化有困難，所以應該避免採取對 provider 等附加義務的方法。
 - ◆ 因為充分認為會成為能夠容易發現侵害著作權的內容(contents)，所以期待今後更要進行檢討作為義務的必要性。
【規定 Service provider 等不要負責任的情形之方法〔安全避難港:Safe harbor〕的有關意見】
 - ◆ 因為制定 safe harbor 規定，成為能夠謀求迅速防止受害，所以贊成制定規定。
 - ◆ Service provider 本來就有義務積極地調查，確認有沒有在自己的 Server 內進行侵害著作權，為了要明確化其責任，原來應該規定某一些作為義務，可是因為事實上不可能，所以為了要能迅速的刪除違法的內容之次善的對策，採用 safe harbor 的方法也是以當前的措施而言具有意義，但是當要適用其規定，應該要制定嚴格的必要條件。
- (2) 關於為明確化對 Service provider 等不產生作為義務的情形等之規定
- ◆ 因為要判斷資訊的違法性有困難，所以除了一眼就能明白看出該資訊違法性的情形外，於收到由利害關係人依照嚴格規定必要條件之通知，假如是普通人限於從該通知內容可以明白判斷該資訊的違法性的情形時，始符合所謂「知道會成為問題的資訊之流通」的必要條件。
- (3)關於有關 Service provider 等經誠實的判斷後，採取判斷為恰當的對應之情形時的免則規定
- ◆ 關於「已經盡善責」(Good Samaritan) 條款，應該從促進仲介者的自助努力之立場進行檢討。

- ◆ 有關誠實地對應的免責規定，應為 Service provider 等的抱怨處理之效率化及實現對於認為違法的資訊之彈性的處理。
 - ◆ 基本上的利用環境之整備方面，依靠促進由 Service provider 等之自主性的努力較為適合，所以有必要制定經由 Service provider 等誠實地判斷後，辦理認為恰當之自主性的努力之情形時的免責規定。可是將「經過誠實的判斷後辦理認為恰當的對應之情形時」當做免責的必要條件，則尚不明確。
 - ◆ 對於 Service provider 等強制過大的負擔之制度應予以避免，並應明確化以具體的採取那一樣手段之情形時，符合「經過誠實的判斷後辦理措施的情形」之標準。
 - ◆ 從促進 Service provider 之自主性的對應之觀點來說，關於為阻止違法資訊的流通之自主性的對應之判斷有錯誤時，有必要兼顧到於善意、無重大過失的情形時不課予責任。
 - ◆ 關於 Service provider 等之判斷在結果上成為錯誤時的責任之有無，不是依據民法第 709 條之標準，而應予以立法化根據，由是否有善意、無重大過失而決定。
 - ◆ 從恰當的權利應受到保護的觀點，關於 Service provider 等為採取對應所做的判斷或其結果，應依據「是否有過失或如何情形」來判斷有無責任。
- (4)關於要明示假如 Service provider 等遵守就不會被追求責任那樣之形式性的手續。
- ◆ 有必要辦理有關資訊的刪除。擱置之明確的 rule 整備，而且值得檢討 notice and take down 。
 - ◆ 受到侵害等之不正當行為的被害者於發現違法、有害資訊的提供行為之情形時，在目前還是採取 notice and take down 手續應付處理的方式比較有效。
 - ◆ 為要打破實際上受害者連對方是誰都不知道而忍氣吞聲的現狀，希望早期引進 notice and take down 。
 - ◆ 為要受害者之迅速地暫時救濟及明確化 Service provider 等如何做才不會被追究責任，當作補充裁判手續而引進 notice and take down 手續相當有效。
 - ◆ notice and take down 在沒有宣誓供述等之制度的我國高度被濫用的危險性，在目前問題很大，所以對於民法的特別例子之免責方面，應限定在有關誠實地對應之免責範圍採用，而關於侵害權利必較明確的著作權法領域等，要另行檢討將 notice and take down 套上去實施較為適當。
 - ◆ 以現狀而言，假如連絡發信者即大部分已經自主性的刪除，所以 Service provider 收到違法資訊的通知之情形時，不是立即予以刪除，而是向發信者通知收到通知的意思，假如無異議的情形時，立即可以刪除該資訊的制度是合理的。
 - ◆ 因為以現狀而言，假如對發現者連絡有收到訴苦的情形時，大半會親自予以刪除，所以當要具體的創設 notice and take down 的意旨，假如對此沒有陳述異議的情形時，由 Service provider 等予以刪除。

- ◆ 關於 Digital Contents 方面，因為恐怕被害會迅速擴大，所以 provider 受到由被害者的通知，如能合理的判斷為侵害權利等情形時，應迅速採取禁止 access 措施，關於其措施，除非有重大過失，否則對發信者不負起責任為要。如由發信者有反對通知的情形時亦相同。
 - ◆ 如 Service provider 等受領通知的情形時，對發信者連絡有收到通知的意思，如在合理的期間內沒有由發信者申訴異議或由發信者刪除的情形時，則應由 Service provider 等予以刪除。
 - ◆ notice and take down 手續，應將其定為預備性的救濟措施，以簡易的手續予以執行，對於此手續如由具備形式性的要件之權利者有了通知，對於此通知如沒有具備形式性的要件之發信者的異議之情形時，Service provider 等應該立即將違法的資訊予以刪除較為妥當。
 - ◆ 鑑於本手續的引進的目的，Service provider 等應使其僅判斷通知的形式適合性，而不應該要其判斷資訊之違法性。
 - ◆ 當要策劃制定 notice and take down 手續時，為防止被害者及發信者雙方濫用權利，應設定明定損害賠償責任等某些措施。
 - ◆ 也可以考慮到發信者變更，廢止連絡處所等，所以服務提供者等只要向已理解的聯絡處所連絡即可，如明白連絡不到的情形時，就要顧慮到予以刪除等也可以免責由發信者之損害賠償請求等事宜。
 - ◆ 因為以形式性的要件就可以單方性的限制發信者的權利，所以 notice and take down 手續應該不是義務的性質而應將其成為任意的事情，又，也有必要訂有對濫用制度的防止對策。
 - ◆ 違法性的判斷有困難，並可推測雖然制定嚴格的通知之要件，也不會充分等實際事務的對應有困難。假如要引進的情形時也要嚴格規定通知的要件，而且，對於通知人要使其負擔一定的法律責任。
 - ◆ 由發信者的反對，最少對於有關著作權侵害行為應以具名的方式辦理。
 - ◆ 由發信者有反對論的情形時，因為 contents 不會被刪除，所以有權者僅能訴訟，因此反對的通知應賦予具名的義務。
 - ◆ notice and take down 的手續被法定的情形時，對於不按照手續的 provider 等在訴訟上能夠做那一種請求及臨時的判決，在今後之討論時應將其放在念頭。
- (5)其他
- ◆ 關連到侵害著作權的情形時，雖然不符合直接侵害，可是應該將與侵害行為有密切不可分之情報提供行為等，也有必要當作其對象包括在內。
 - ◆ 身為仲介者的 provider 等因為也能夠採取刪除以外的對策，所以不單是給 provider 等刪除的權限，也應該給予暫時性的保留權利。
 - ◆ 要將著作物登載於網際網路上的情形時，要將發信者、資料製作者課予要附加防止複製裝置或權利管理情報的同時，對 service provider 也請迅速檢討對應課予一定的義務。
 - ◆ 為了能夠實現由被害者對違法、有害情報之提供行為者法律上的措施等根本的解決方法，provider 等對於刪除等手續的對象情報，要能夠維護。保存一定期間，配合必要情形能夠向被害者提示。

- ◆ 有關 service provider 刪除違法的情報之制度，應列入由受害者對應發信者公開情報及由受害者對應訴訟等在保護受害者之權利利益上有必要的 data，應予以另行保存的規定。
 - ◆ 在網路上要特定受害者有困難，所以有必要制定為使所謂受害者是誰能夠明確化的定義。
- 5.關於特定在網際網路上流通之違法情報的發信者，有關由當事人為促進解決糾紛公開發信者情報的規則之整備的理想狀態。
- (1)關於全體方面
- ◆ 以能夠迅速地處理當事人當間之紛爭為基本，關於公開發信者情報方面，期待制度整備之檢討有所進展。
 - ◆ 對於為對真的賠償責任者追求責任，是重要的規則，所以贊成創設發信者情報公開規則。
 - ◆ 在網際網路上的情報流通之問題，多數係起因於匿名性，又，因為情報的傳達立即會普及到廣大的範圍在短時間內會過擴大受害，所以不論以哪方面為判斷主體，都期望成為能夠迅速得到公開的制度。
 - ◆ 重要的是整備成為能夠特定發信者，可以追求民事的責任，那樣的發信者情報之公開手續。
 - ◆ 為克服匿名性，謀求受害者之救濟及抑制不正當的行為，雖然創設在一定的情形時公開發信者的情報之制度，以「通信的秘密」及「以匿名表現的自由」之最小限度的限制而言有其合理性。
 - ◆ 假如連對於惡性的企業等具有勇氣的發言也無條件的公開發信者側之情報，可能會發展成為由企業等之報復等預料不到之新的社會問題，又也有可能發信者不等於本人的情形，所以原則上反對公開情報發信者。
 - ◆ 通信之秘密及表現的自由應保護的主體為 communication 的當事人，所以關於 provider 等之對於通信之秘密的抗辯，應顧慮到不要始終於通信的秘密之抽象性的議論。
 - ◆ 在網際網路的世界，與現實社會有所不同，所以不必要特別強調『以匿名』表現的自由。
 - ◆ 在網際網路上公開辦理差別煽動之發言者；從完成發信者之自己責任的觀點及確立受害者之人數（受害者的救濟）之觀點而言，有必要積極性的公開，不應該將煽動差別的發言者，以「通信之秘密」予以保護。
 - ◆ 有關發信者情報的公開之規則整備的應有狀態，應該要擔保不會妨礙為保護國民之生命、身體而緊急必要的情形之發信者情報的公開。
 - ◆ 是否要公開發信者情報的認定，無論由第三者機關判斷或由法院判斷，均應以在短期間內能得到結論的制度。
- (2)關於認定應公開的要件
- ◆ 於發信者情報的公開手續上，假如設定比提起本訴更嚴格的要件，即會失去手續的實效性，所以應顧慮到公開的要件不要比現行法之保全手續以上嚴格。

- ◆ 因為(i)權利利益受侵害的確實性高，(ii)為接受救濟必要不可缺的要件過於嚴格，所以應該採用類似一般的保全處分之手續。具體而言
 - ①對法院要依據相當的事實陳述明白主張保有著作權或受到侵害的情形；
 - ②法院的審理僅需要對權利者側之一方審查；③對於要求公開者要法制化規定有繳納保證金之義務。
- ◆ 在公開的要件有列舉要沒有其他的代替手段（補充性、不可缺性）似乎過於嚴格。因為在接受裁判的權利之行使方面，沒有這樣的要件之必要，所以有失均衡。
- ◆ 關於公開的要件不應該附加受侵害的權利利益為重大者，也不應該由於成為問題的權利利益之性質而其公開的要件有所不同。
- ◆ 如要斟酌為實質性的要保護接受裁判之權利，在要件上應明白記載「為要提起本訴」較為理想。
- ◆ 當要判斷是否應公開時，應充分檢討，調查是否真的有必要救濟之受害者。
- ◆ 受害者應該對情報公開機構表示以何種立場受到侵害。又，有必要慎重地確認被害者之本人性。
- (3) 關於應判斷可否公開的主體
 - ◆ 當要判斷可否公開時有必要與通信的秘密，個人情報的處理，表現之自由做比較衡量，所以要使法院的判斷介入比較理想。
 - ◆ 以救濟受害者之觀點成為被要求其迅速性，又有必要由因為不能提起訴訟之不利與通信之秘密等受到限制之不利的比較衡量來判斷，所以以迅速的手續由法院來判斷比較恰當。又，有必要訂定為保障發信者之權利的手續及為防止濫用制度的對策。
 - ◆ 以受害者之利益與表現之自由等的憲法上之權利的調整者而言，還是由具有判斷憲法之最終權限，且站在最公正的立場之法院最為理想，而從會被強烈要求是否濫用請求公開之判斷而言，其判斷者仍以熟習法律判斷的法官最為理想。
 - ◆ 為實現所謂解決當事人間糾紛之本來應有的姿態，也有必要公開發信者的情報。因為有通信的秘密之關係等，由法院辦理公開情報的判斷比較理想。
 - ◆ 對企業等突然間公開發信者情報太危險，所以贊成在法院要判斷是否公開情報的手續方面，創設能代替發信者申訴利害關係的機構，從 service provider 等取得發信者的情報。
 - ◆ 因為要等到設立需要相當時間，而其實效性不一定會獲得國民的信賴，所以對由第三者機關來判斷的架構表示反對。
 - ◆ 不是具有技術性的知識之機構無法關係到公開發信者情報的案件，可是法院以外的機構，假如能夠獨自追蹤發信者情報也是有問題，所以應該規定為具有專門性的機構按照法院的許可，能夠辦理必要最小限度的追蹤調查。
- (4) 關於具體性的公開手續應有的狀態
 - ◆ 對於侵害著作權方面，假如要由法院來判斷的情形時，由法院先核對 (check) 受害者的主張是否大致有合理性，如認為有大致的合理性，則應該命令公開發信者情報。

- ◆ 對於公開的必要性，不可缺少一定的法律行之判斷，所以希望依照非訴訟事件由法院參與的手續比較理想。
- ◆ 事實上要選定代替發信者之利益辦理申訴之第三者，期待他機能性的活動極為困難，所以對擺定其地位為代替發信者之利害申訴的機構，請求公開發信者情報的案不能贊成。
- ◆ 假如設置「專門性的」辦理主張妨礙公開發信者情報的機構，因為有極大的可能性會妨礙迅速地公開，所以反對設置代替發信者之利害申訴的機構。
- ◆ 雖然有提出在法院能得到公開之是非的判斷之手續，但是鑑於受到侵害權利之被害者側的方便性，制度之實效性等各點，有必要訂定為儘可能簡便而且迅速的手續。

(5) 其他

- ◆ 對於沒有保存發信者情報而辦理的 service，假如對沒有保存無正當的理由之情形時，應承認對該 service provider 等追求責任。
- ◆ provider 等有必要具有對契約者等取得足夠能特定其個人之真正的情報資料之義務，所以應該訂定為不履行此義務者，應視為共同發信者可追求其刑事責任，非法行為責任的制度。
- ◆ 在網際網路上雖然有必要保持以匿名表現自由，可是另一方面資訊發信者當然要對自己所發出的情報要負起責任，所以有必要關於 service provider 等事前收集發信者情報予以新的法制化。
- ◆ 從防止惡用匿名性之非法行為及犯罪，整備無論是誰均能安心利用網際網路的環境之觀點而言，應趕快檢討對例如為保存發信者情報而辦理的 service 時要負起理解契約者情報的義務。
- ◆ 要求 service provider 等負起收集發信者情報一事，從表現的自由，隱私權 (privacy) 的觀點，所謂 service provider 等的負擔之觀點而言並不恰當。
- ◆ 根據使用 file 交換 soft 的侵害行為者於侵害行為時所使用的 IP address 可以特定，所以應整備關於該接續者的個人情報，能夠範圍暫由負責該接續的接續 provider 來公開的手續。
- ◆ 為了網際網路要成為真實社會的基盤，對於網路的可靠性非常重要，輸入資訊的情形時如能公佈使其本人明確化，則應能使發信者認識其責任。
- ◆ 從向人權救濟機構委託解決糾紛的觀點而言，對於 provider 等也應該以法律上擔保其公開情報。

6. 其他

- ◆ 能夠採取具有實效性的違法對策僅有 Service provider 等，所以有必要規定對於 Service provider 等也能夠請求採取禁止措施。
- ◆ 假如 provider 不採取禁止 access 措施的情形時，應該承認受害者對 provider 之請求採取禁止權。
- ◆ 對於惡性的 provider 等應修訂法律可以包含取消許可或認可。
- ◆ 關於以資訊的發信者身分應注意事項有必要以訓辭性的方式宣誓。

II 關於對於在網際網路上流通之違法，有害資訊在收信者側的對應

1. 對於資訊發信者成為問題的資訊，為要整備能夠主體性的、主動性的對應之環境，有必要謀求促進 labeling、filtering 的普及方面，沒有收到特別的意見。

2.其他

- ◆ 很難考慮到對於junk mail（垃圾郵件）的情形時，發信者會附加labeling送信。
- ◆ 假如能夠設置收集從一般的利用者來的junk mail通知，向各業者分送報告之角色的公家機關就很好。
- ◆ 也可考慮到在各Service提供者那裡設置對應junk mail之諮詢的窗口之方法。
- ◆ 明確化處理junk mail的rule，消除provider等對應junk mail對單的溫度差（熟忱度）。
- ◆ 最重要的還要廣泛地向一般人提醒注意junk mail（垃圾郵件）送信行為是妨害行為。

以 上

JIS

Requirements for Compliance Program on Personal Information Protection

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Requirements for Compliance Program on Personal Information Protection

0. Preface

The speed with which computers can process vast amounts of information has led in recent years to dramatic developments in personal data processing technology. These developments have made it relatively easy to offer efficient services in response to increasingly diverse and idiosyncratic needs related to individual credit loans and other consumer trust transactions, direct marketing, and the like. However, this rapid computerization means that a wide variety of private businesses are now using information systems to handle personal data, increasing the likelihood of personal data being collected, used and disclosed, and increasing the danger of illegitimate use or falsification of such information. As a result, the appropriate use and protection of personal data has become a vital issue, and many efforts are underway internationally to reinforce protections for personal data.

Ultimately, the protection of this data requires the independent and voluntary involvement of all business entities, and effective engagement in such efforts requires that a compliance program, a systematic management system encompassing all business activities, be created, implemented, maintained, and continuously improved.

The standards below describe the minimum requirements of such a compliance program. Business entities may, within the scope of the purpose of appropriately protecting personal data, apply special rules established according to the characteristics of personal data and the existing conditions of their activities.

Companies can demonstrate their conformity with these standards to interested parties via their own evaluation, evaluation by customers, or evaluation by a third party, thus obtaining acceptance from those interested parties.

These standards are not intended to hinder fair and free competition, nor to increase or alter the legal obligations of any business entity.

The basic model of a compliance program is illustrated in Figure 1. The success of these compliance programs depends on the involvement of people at all levels and in all departments, especially those with highest authority.

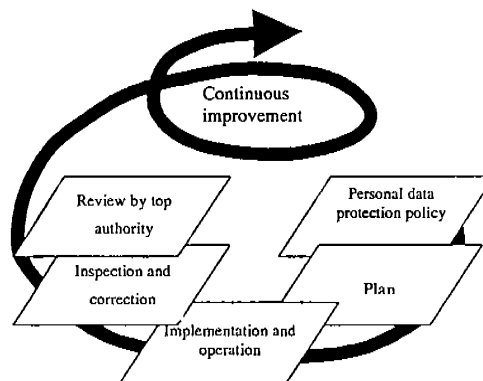


Figure 1 The Personal Data Management System Model
Described by the Present Standards

These standards apply the management system principles found in the JIS Z 9900 series for quality standards and the JIS Q 14001 standards for environmental management systems.

The essence of these management principles is to steadily improve the management capability of the business entity through a continuous spiral of policy creation, planning based on those policies, then a repeated program of implementation, auditing, and review.

Accordingly, these standards are expected to improve the ability of business entities to manage personal data.

Business entities may base their compliance programs on existing management systems that meet JIS Z 9900 or JIS Q 14001 series standards.

The compliance program stipulated by these standards does not require a management system established independent of existing elements. In some cases, the requirements can be satisfied by the application of existing management elements.

1. Applicable Range

These standards may be applied to corporate entities of any size and any type that process personal data, either wholly or in part, using electronic computers or other automatic processing systems, including personal data processed in document form for the purpose of processing by an automatic processing system.

Business entities may apply these standards in the process of performing any of the following:

- a) creating, implementing, maintaining, and improving their own compliance program,
- b) personally confirming that their own compliance program conforms to these standards and personally declaring the conformance, or
- c) requesting external organizations or the subjects of the data to confirm that the compliance program conforms to these standards.

2. Excerpted Standards

At this point, there are no excerpted standards.

3. Definitions

In these standards, the meaning of the terms are as follows

a) Personal data

The term "personal data" means data which relates to an individual, and ones from which the individual can be identified including name, date of birth, other descriptions, number, symbol, other mark, image, or sound assigned to the individual contained in the data (including data that the individual can not be identified only from the data, but be identified by being easily collated with other data).

b) The data subject

The term "the data subject" means an individual identified by means of personal data.

c) Business entity

The term "business entity" means any corporation, other group, or individual engaged in any form of business.

d) Manager

The term "manager" means a person designated by the representative of a business entity who has authority to determine the purpose, method, etc. of collection, use and disclosure of personal data.

e) Recipient

The term “recipient” means a corporation, other group, or individual that receives disclosed personal data.

f) **Auditor**

The term “auditor” means a person assigned by the top authority of a business entity and given the authority to conduct and report audits from a fair and disinterested point of view.

g) **The data subject's consent**

The term “the data subject's consent” means the intention manifested by the data subject, after being given information on the collection, use, and disclosure of his or her personal information, to consent to such collection, use, and disclosure. When the data subject is a minor, his/her parent's consent is needed.

h) **Compliance program (CP)**

The term “compliance program” means a management system including policies, organizations, plans, implementation, audits, and reviews for the purpose of protecting the personal data in the possession of a given business entity.

i) **Purpose of collection**

The term “purpose of collection” means the extent of use and disclosure of personal data to which the data subject has given consent.

j) **Use**

The term “use” means any processing or handling of personal data within a given business entity.

k) **Disclosure**

The term “disclosure” means the provision of personal data to any person or enterprise external to the business entity.

l) **Entrust**

The term “entrust” means an act of a business entity to place personal data it holds in the care of another person for such purposes as data processing and to retrieve the data after such data processing.

4. Compliance Program Requirements

4.1 General Requirements

Business entities must create, implement, maintain, and improve compliance programs. The requirements of such a program are delineated in full in Section 4.

4.2 Personal Data Protection Policy

The top authority of the business entity shall establish personal data protection policy, giving consideration to the following items, and shall ensure the implementation and maintenance of said policy. In addition, said authority shall ensure that said policy is documented and fully communicated to board members and employees and that measures are provided for public access.

- a) the appropriate collection, use, and disclosure of personal data considering the nature and scale of the business,
- b) means of preventing unauthorized access to, leaking, tampering, destruction, or loss of, and corrections to personal data,
- c) strict abidance by all laws or other restrictions related to personal data, and
- d) the continuous improvement of the internal compliance program.

4.3 Plan

4.3.1 The Specification of Personal Data

The business entity shall establish and maintain procedures for specifying all personal data in its possession. Said business entity shall be fully aware of the risks

(unauthorized access, loss, destruction, tampering, and leaking) involved in possessing personal data.

4.3.2 Laws and Other Restrictions

The business entity shall identify laws and other restrictions regarding personal data and shall establish and maintain procedures for referring to said laws and restrictions.

4.3.3 Internal Regulations

The business entity shall adopt and maintain internal regulations for the purpose of protecting personal data.

Said internal regulations shall include provisions for:

- a) assigning responsibility and authority for ensuring personal data protection at all levels and in all departments,
- b) the collection, control, use, and disclosure of personal data,
- c) the display, correction, and deletion of personal data by the data subject,
- d) training in the protection of personal data,
- e) audits of personal data protection measures, and
- f) punishments for violations of the above mentioned internal regulations.

The business entity shall, appropriate to the nature of its business, revise internal regulations as required to ensure proper and certain implementation of its compliance program.

4.3.4 Planning Document

The business entity shall propose, document, and maintain a plan related to the training and auditing required for achieving compliance with internal regulations.

4.4 Implementation and Operation

4.4.1 System and Responsibilities

The business entity shall determine and document roles, responsibilities, and authority for the purpose of effectively implementing the compliance program and shall fully communicate the same to those board members and employees who are engaged in business related to personal data.

The top authority of the business entity shall ensure availability of the required resources for implementation and management of the compliance program.

The top authority of the business entity shall appoint a manager within the business entity who shall understand and observe the provisions of these standards and shall give the manager the authority and responsibility to implement and operate the compliance program, independent of any other responsibilities.

4.4.2 Measures Concerning the Collection of Personal Data

4.4.2.1 Principles of Data Collection

The collection of personal data shall be subject to a clearly defined purpose, and shall be limited to the information required to achieve said purpose.

4.4.2.2 Limitation on Collection of Personal Data

The collection of personal data shall be conducted by lawful and fair means.

4.4.2.3 Prohibition against the Collection of Specific Personal Data of a Delicate Nature

Personal data which include the following types of data shall not be collected, used or disclosed. This shall not apply, however, only in the case where the data subject has

given explicit consent to the collection, use or disclosure of the data, or where there are special provisions in laws, or where it is necessary for judicial procedures to collect, use or disclose the data.

- a) Beliefs (including religion, ideology, and principles)
- b) Race, ethnic group, lineage, permanent domicile (excluding information on prefecture), physical or mental handicaps, criminal record, or other items that could be factors in social discrimination
- c) Trade union membership, collective bargaining, or other group affiliations or activities
- d) Participation in group actions, the exercise of petition rights, or the exercise of other political rights
- e) Health, medical treatment, or sex life

4.4.2.4 Measures for Collecting Personal Data Directly from the Data subject

When personal data are collected directly from the data subject, the data subject's consent concerning the collection, use and disclosure of the personal data shall be obtained through written notification or by an alternative method providing at least the information given below, or equivalent information.

- a) The name or title and the department, telephone number, address, etc. of the manager of personal data inside the business entity or his or her agent
- b) Purpose of collection and use of personal data
- c) In the case where the personal data will be disclosed, the purpose thereof, the recipient of the data, the type and nature of the recipient's organization and whether or not a contract has been concluded concerning the handling of the personal data.
- d) Whether the entrustment of personal data is expected, and its purpose.
- e) The voluntariness of the provision or non-provision of personal data by the data subject and the consequences of not providing personal data.
- f) The existence of the right to request access to personal data and the right to request correction or deletion thereof if the personal data are found to be erroneous following the access, and the specific method by which the right is to be exercised.

4.4.2.5 Measures for Indirect Collection of Personal Data other than from the data subject

When personal data are collected indirectly from a source other than the data subject, the data subject's consent concerning the collection, use and disclosure of the personal data shall be obtained through written notification or by an alternative method by providing the data subject with at least the information given in 4.4.2.4 a) through d) and f) above. This shall not apply, however, only in the cases a) through b) below.

- a) If personal data are collected from business entities that have obtained the data subject's consent to disclose the personal data in accordance with 4.4.2.4 c) above, when the personal data were collected from the data subject.
- b) If personal data are entrusted to another business entity for such purposes as data processing.
- c) If personal data are collected or processed in such a way that it is not likely to infringe on the interests of the data subject requiring protection.

4.4.3 Measures for the Use and Disclosure of Personal Data

4.4.3.1 Principles of Use and Disclosure

The use and disclosure of personal data shall be limited to the purposes to which the data subject has consented. However, only in the cases shown below the data subject's consent shall not be required.

- a) If said use or disclosure are necessary for compliance with to a provision of law
- b) If said use or disclosure are necessary in order to protect the vital interests of the data subject and/or the general public, such as life, health, or property.

4.4.3.2 Measures for the Use and Disclosure of Personal Data Outside the Scope of Purpose of Collection

When personal data are to be used or disclosed for purposes outside the scope of collection to which the data subject consented, the prior data subject's consent shall be obtained through notification in writing or by an alternative method, providing the said data subject with at least the information shown in 4.4.2.4 a) to d) and f) above.

4.4.4 Obligation to Control Personal Data

4.4.4.1 Ensuring the Accuracy of Personal Data

Personal data shall be kept accurate and up-to-date to the extent necessary for fulfilling the purpose of use.

4.4.4.2 Ensuring Security in the Use of Personal Data

The business entity shall take reasonable security measures against risks to personal data (such as unauthorized access, loss, destruction, alteration, and leakage).

4.4.4.3 Measures Concerning the Entrustment of Personal Data

When the business entity entrusts personal data for purposes such as data processing, the business entity shall establish a standard to select a person who can provide a sufficiently high level of personal data protection. In addition, the business entity shall conclude with the person a contract providing for the matters shown below so that the level of protection shall be guaranteed.

- a) Maintenance of the confidentiality of personal data
- b) Matters concerning the re-entrusting of personal data
- c) Scope of responsibility in case of accident
- d) Return and erasure of personal data at the time of expiration of the contract

Furthermore, the written or magnetically-stored record of the contract, etc., shall be maintained for the period for which the personal data are managed by the outside business entity.

4.4.5 Rights of the Subject of the Data Concerning Information Regarding Self

4.4.5.1 Rights Concerning Own Personal Data

Requests for access to personal data by the data subject shall be accepted within a reasonable period of time. If the personal data are found to be erroneous following the access, requests for correction or deletion of the personal data shall be accepted within a reasonable period of time. When a correction or deletion occurs recipients of the personal data shall be notified to the extent possible.

4.4.5.2 Right to Refuse Use or Disclosure of Own Personal Data

Refusals of the use or the disclosure, by the data subject, of personal data managed by business entity shall be accepted.

4.4.6 Training

The business entity shall conduct appropriate training for its board members and employees.

The business entity shall establish and maintain procedures to communicate the following items to all such personnel at all levels and in all departments:

- a) the importance and merits of complying with the compliance program,
- b) roles and responsibilities related to complying with the compliance program, and
- c) the potential results should the compliance program be violated.

4.4.7 Complaints and Consultation

The business entity shall receive and respond appropriately to all complaints and requests for assistance from data subjects with respect to personal data and the compliance program.

4.4.8 Compliance Program Documentation

The business entity shall describe in writing or an alternative method the basic elements of the compliance program.

4.4.9 Document Control

The business entity shall control all documents required by these standards.

4.5 Audits

The business entity shall audit at regular intervals the conformance of the compliance program to the requirements mentioned herein and the state of operation of the program.

The auditor shall direct the audit and shall prepare an audit report for the top authority of the business entity.

The business entity shall appropriately control and maintain the audit reports.

4.6 Review by the Top Authority of the Business Entity

The top authority of the business entity shall conduct periodic reviews of the compliance program in order to maintain the appropriate protection of personal data in the light of audit reports and other factors in the management environment.

Commentary on Requirements for a Compliance Program on Personal Information Protection

This commentary is intended to explain matters specified in and related to the Standard and does not constitute part of it.

I. Purpose of the Standard

Recent remarkable progress in data processing technology, achieved especially by down-sizing and end-user computing, has allowed even small to medium-sized companies to use information systems to handle personal data, which could previously be dealt with only on large computers in processing large-volume routine transactions. This also has enhanced the possibility of personal data being accumulated and used in a distributed form and has raised the risk of unauthorized use, alteration, or compilation of the data by unauthorized persons. In fact, we have seen several cases of unauthorized disclosure of personal data, and people's worry about whether their personal data are actually protected or not are growing. Even consumers' associations joined in a campaign for greater protection of personal data.

Furthermore, due to the worldwide development of open computer networks as typified by the explosive expansion of the Internet, personal data, once put on a network, can be distributed over a wide area, even across borders, in no time. Therefore, there has arisen a greater risk of larger-scale infringements of rights to personal data and a need for international harmonization in terms of personal data protection.

Foreign advanced countries brought personal data protection legislation into effect many years ago. Following and based on the Board's Recommendation concerning Guidelines on Privacy Protection and International Distribution of Personal Data adopted by the Organization for Economic Cooperation and Development in 1980, they enacted additional laws for the protection of personal data. In response to recent progress in information technology, they also started actions to provide greater protection of personal data.

The Ministry of International Trade and Industry revised the Protection of Personal Data Related to Computer Processing in the Private Sector (Guiding Principles) of 1989 to proclaim a Guidelines for Protection of Personal Data Related to Computer Processing in the Private Sector (Ministry of International Trade and Industry Notification No. 98 on March 4, 1997).

The Standard for the Protection of Personal Information is intended to, based on this ministerial guideline, raise awareness of the issues among the general public as well as relevant business entities so as to socially recognize business entities using this

Standard and achieve sound development of an highly information-oriented society and proper protection of consumers.

II. Outline of the Standard

1. Applicable Range (Article 1)

This Standard does not apply to an individual as far as he/she handles personal data of others for his/her personal purposes, such as the making of an address book. However, it should apply even to an individual if he/she appears to handle personal data of others in his/her capacity as an employee of a certain company. Processing with an automated system generally includes inputting, processing, and outputting.

2. Definitions (Article 3)

2.1 Personal Data [Article 3.a]

"Personal data" does not include data on officers of corporations or other organizations that is contained in data recorded about those corporations or other organizations.

"Data on officers of corporations or other organizations" means public data on them, including their background and stock holdings shown on documents to shareholders and customers such as a business report distributed at a general meeting of stockholders.

2.2 the Data Subject [Article 3.b]

The "the data subject" means the individual whom such personal data concerns.

2.3 Recipient [Article 3.e]

A "recipient" means a person who directly or indirectly receives personal data of others. A term in opposition to is a data provider.

2.4 The data subject's consent [Article 3.g]

Consent must be obtained from the data subject in the form of an express declaration of intention such as the affixation of his/her signature and seal or his/her oral acceptance. However, the data subject may be deemed to have given his/her implicit consent by, for example, failing to express an objection during the process of such act, in such cases where:

- it is apparent that the data subject was already informed of necessary matters;
- for the purpose of executing a contract, a credit institution is referred to for credit inquiry when the data subject gives the number of his/her account with a financial institution;
- data disclosed by the data subject to unspecified persons is gathered; and

necessary matters are notified on posters, leaflets, and other materials for transactions, offers, subscriptions, and other acts that do not involve the delivery of a document for the conclusion of a contract, including utilities supply contracts;

A child whose guardian's consent should be also required is defined as a minor who is not old enough to understand the provisions of Articles 4.4.2.4.a) to f). Generally speaking, children of 12 to 15 years of age come under this definition. Similar consideration should be given to an adult regarded as lacking judgment as to the provisions of Articles 4.4.2.4.a) to f).

2.5 Compliance Program (CP) [Article 3.h]

Where a corporation conducts more than one line of business, if it can clearly specify divisions that handle personal data and if the way personal data are handled perceptibly differs from one line of business to another, then the corporation may develop a CP for only one line of business or for each such division; however, responsibilities must be clearly defined within the corporation and it must be expressly stated that the final executive responsibility for any violation of the CP rests with the top authority of the corporation.

2.6 Use and Disclosure [Articles 3.j) and 3.k)]

The relation between "use" and "disclosure" is shown in Figure 1.

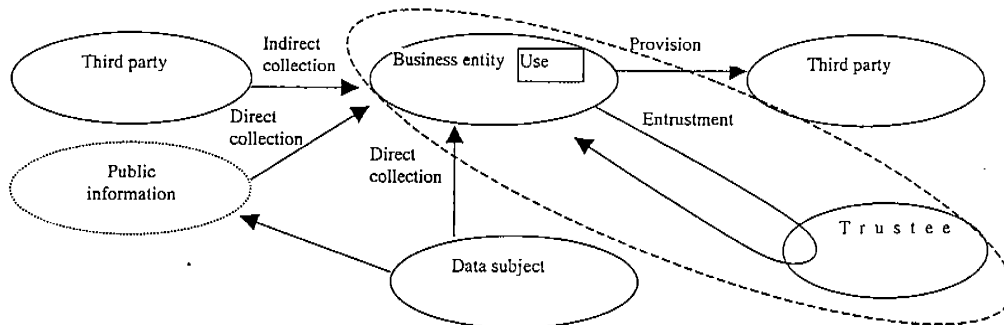


Figure 1 Relation between "Use" and "Disclosure"

Where a person gives personal data in trust, Articles 4.4.4.3 and 4.4.2.5.b) apply to the giving person and the trustee, respectively.

3. Compliance Program Requirements (Article 4)

3.1 Personal Data Protection Policy (Article 4.2)

The specification of a policy in writing includes its reduction to electronic media such as a server. The term "employee" includes a temporary or part-time worker as well as

a regular employee (the "employee" as used in Articles 4.4.1 and 4.4.6 has the same meaning).

3.2 The Specification of Personal Data (Article 4.3.1)

To protect personal data, it is necessary to establish and maintain a procedure for clearly specifying personal data in need of protection and to understand the risk and effect that may be brought about in case of failure to take proper protective measures. The effect must be understood to include a direct effect on the business entity and an indirect effect such as loss of credibility with the people.

3.3 Laws and Other Restrictions (Article 4.3.2)

Among relevant laws and other restrictions are the law concerning the protection of personal data related to processing with electronic computers held by administrative organs, local governments' ordinances for the protection of personal data, administrative organs' guidelines on personal data protection, and self-regulatory industrial guidelines.

3.4 Internal Regulations (Article 4.3.3)

Internal regulations include organizational rules for the protection of personal data. It is important to define authority and responsibility of each division and each level in the corporate hierarchy.

It is not appropriate to adopt basic internal regulations only formally; bylaws, manuals, checklists, etc., indicating what should be done or what should not be done, must also be developed so that the employee can act upon concrete behavioral standards.

Internal regulations may consist of more than one set of rules. It is advisable to apply the penal provisions of work regulations *mutatis mutandis* to violations of internal regulations.

It is also necessary to make internal regulations effective and binding upon the employee through a due procedure such as the submission of them to the board of directors for approval.

3.5 Planning Document (Article 4.3.4)

An education plan should include a yearly curriculum for seminars on personal data protection, a program of individual seminars (the designation, date and time, place, and lecturer of the seminar, eligibility for attendance and the estimated number of attendants, a brief description of the seminar, textbooks to be used, voluntary/compulsory attendance, etc.), and the budget.

An audit plan should be comprised of the subject of audits (concerning personal data) to be performed in the year, what will be audited, the purpose, scope, procedure, and schedule of audits, etc.

3.6 System and Responsibilities (Article 4.4.1)

Because an administrator is responsible for controlling personal data on behalf of the business entity, the number of administrators must not be increased without due reasons; or the line of responsibility may become indistinct. In other words, if one administrator is to be appointed for each division, each administrator's responsibility must be clearly defined.

The administrator should desirably be able to assume responsibility to outside the company (e.g., officers).

3.7 Measures Concerning the Collection of Personal Data (Article 4.4.2)

3.7.1 Principle of Data Collection (Article 4.4.2.1)

Needless to say, the purpose of personal data collection must not offend public order and morals.

In setting a clear purpose of collection, the following must be taken into consideration.

- a) When obtaining personal data directly from the data subject, the purpose should be expressly understood in an agreement with him/her or otherwise, or it should be implicitly understood in a credibility-based relationship with him/her that is similar to a contractual relationship.
- b) When collecting personal data from other persons than the data subject, the collecting person should set a purpose of collection and specify it in a contract with the data subject, etc.
- c) When collecting personal data from public materials, the collecting person should set a purpose of collection.
- d) In setting a purpose of collection, the scope of use and provision of collected data should be made as clear and specific as possible so that the effect of such use and provision upon the data subject may be estimated.

3.7.2 Limitation on Collection of Personal Data (Article 4.4.2.2)

Personal data must not be collected by unfair means such as a falsified presentation of the purpose.

3.8 Measures for Collecting Personal Data Directly from the Data Subject (Article 4.4.2.4)

"In the case where personal data will be disclosed," the data subject is rarely involved personally in the providing process; therefore, it is necessary to specify the purpose of provision and give information on the recipient so that the data subject may not have a worry.

The "type and nature of an organization" means the relationship between an organization (company) receiving personal data and a company providing that information (an affiliate or holding company of the recipient company, etc.).

"Degree to which disclosure of personal data by the data subject is voluntary" means information indicating whether it is obligatory to fill out an application form or it is just optional (the form is a kind of questionnaire), and "the effect on the data subject if such data are not disclosed" means conceivable consequences of his/her failure to make an entry in an application form (for example, if he/she does not indicate his/her annual income in an application for marriage counseling, it will not be considered in selecting persons to introduce to him/her).

If it is difficult to present all of the matters set forth in Article 4.4.2.4 prior to the receipt of a purchase order because of the time of transaction or limited space for advertising, which may be true with mail-order and TV-order selling, then the seller should notify the consumer of the matters set forth in Article 4.4.2.4 for consent, on the next occasion of communication with him/her such as the delivery of a catalogue or the order.

"Alternatives to a written document" include, without limitation, the transmission and receipt of electronic mail.

3.9 Measures for Indirect Collection of Personal Data other than from the Data subject (Article 4.4.2.5)

A person entrusted with data processing in connection with Article 4.4.2.5.b) must be prohibited from using or providing personal data against the purpose of entrustment during the course of the processing of such data and should desirably place such data under proper control in accordance with this Standard.

The expression "personal data are collected or processed in such a way that it is not likely to infringe on the interests of the data subject requiring protection" as used in Article 4.4.2.5.c) includes, without limitation, the collection of personal data by a provider of gas appliance maintenance for the purpose of ensuring the safety of the customer.

Judgment about whether the situation can be described as any of the cases set forth in Article 4.4.2.5.c) should not be arbitrarily made by parties concerned, but the expression needs to be interpreted as narrowly as possible, using objective judgment based on reason and socially accepted ideas.

3.10 Measures for the Use and Disclosure of Personal Data Outside the Scope of Purpose of Collection (Article 4.4.3.2)

When personal data collected by a division of a company with the data subject consent are used by other division, it may be used for the original purpose of collection to which the data subject agreed or may be used for other purposes. In the latter case, further prior consent must be obtained from the data subject.

3.11 Obligation to Control Personal Data (Article 4.4.4)

3.11.1 Ensuring Security in the Use of Personal Data (Article 4.4.4.2)

"Reasonable" means to give consideration to the application of the best of economically practicable techniques.

Technical security measures that are developed using "the Standards for Information System Security Measures" (MITI Notification No. 518 on August 29, 1995) and "the Standards for Measures against Unauthorized Access to Computers" (MITI Notification No. 362 on August 8, 1996) and other standards as a guide must be implemented. As regards organizational security measures, it is necessary to establish internal standards for the protection of personal data and a clear-cut line of responsibility.

Since the leak of personal data can often be traced to scrapped materials containing it, it is necessary to ensure that scrapped data will not be acquired by any third party, for example, by deleting electronic files or destroying documents containing personal data.

3.12 Measures Concerning the Entrustment of Personal Data (Article 4.4.4.3)

The entrusting party must conclude an agreement with the trustee to the extent it has obtained consent of the data subject.

3.13 Rights of the Data Subject Concerning Information Regarding Self (Article 4.4.5)

3.13.1 Rights Concerning Personal Data (Article 4.4.5.1)

It may be judged appropriate in view of socially accepted ideas or established practices to disclose certain evaluations as to an individual and other similar data.

"A reasonable period of time" means a period of time after which a company updates personal data.

3.13.2 Right to Refuse Use or Disclosure of Own Personal Data (Article 4.4.5.2)

In such cases where the data subject refuses provision of his/her personal data to a third party, his/her request must be honored so that he/she will not suffer disbenefit, unless proviso a) or b) of Article 4.4.3.1 applies.

3.14 Complaints and Consultation (Article 4.4.7)

A special organization or a responsible person must be established or appointed for the handling of complaints and consultation. An administrator is not precluded from taking such post concurrently.

The data subject must be informed of how to contact such organization or person.

3.15 Document Control (Article 4.4.9)

Document control means both to retain CP documents and subdocuments and to keep them updated.

3.16 Audits (Article 4.5)

Audits must be conducted to understand how far a compliance program and a compliance system are developed and identify the way the program is implemented. An audit report must specify the findings, points identified as problematic, and any of these points that needs improving.

4. Composition of the Drafting Committee

The following table shows how the drafting committee, formed in 1998, is composed.

ISMS適合性評価制度について

(ISMS:Information Security Management System)

国際的に信頼される情報セキュリティ評価制度の確立

わが国の情報セキュリティレベル全体の向上を図るため、国際的に整合性のとれた情報システムのセキュリティ管理に対する第三者適合性評価制度を確立することを目的とする。

経済産業省の安対制度改革

情報セキュリティ管理に関する国際標準の導入及び情報処理サービス業情報システム安全対策実施事業所認定制度(以下「安対制度」と呼ぶ)の改革について(平成12年7月31日)公表され、安対制度は平成13年3月31日をもって廃止される。これに伴い民間主導によるISMS適合性評価制度(第三者適合性評価制度)を導入する。

国際的な情報セキュリティ管理に関する標準化動向を勘案

ISO/IEC TR13335(GMITS: Guidelines for the Management of IT Security)やISO/IEC17799(Code of practice for information security management)等の国際的な標準を踏まえた人間系の管理技術に重点を置いたわかりやすく実用的なセキュリティポリシー策定の実施ガイドラインを提示する。

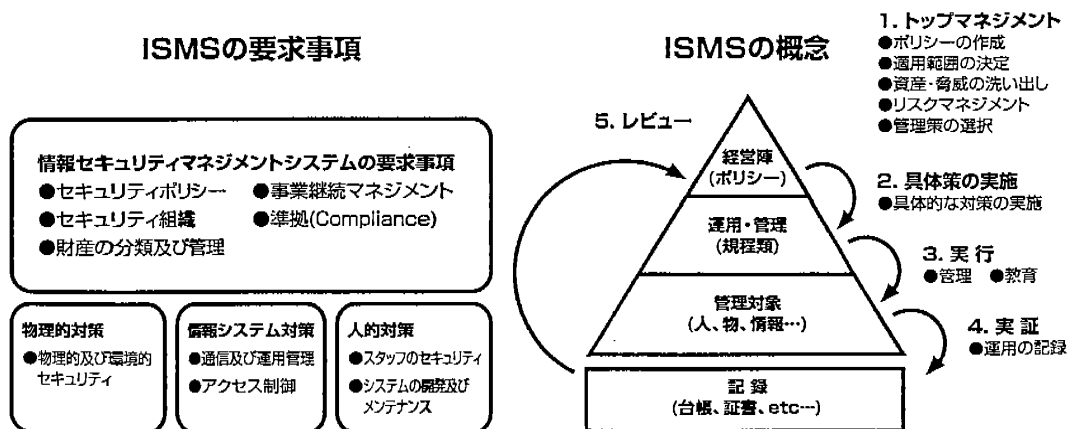
ISMS適合性評価制度の対象範囲

本制度の対象範囲は、情報処理サービス業を営む者を対象とするが、将来的にはニーズに応じて情報処理サービス業以外の分野の事業者にも適用を検討する。

注。「情報処理サービス業」とは、他人の需要に応じて情報処理を行う事業をい(情報処理の促進に関する法律;昭和45.5.22法律90号)、電子計算機を用いて計算を行う事業および検索を行う事業等が該当する。

ISMS適合性評価制度の審査基準

従来の安対制度では、設備等の物理的な対策に比較的重点を置いた審査基準であったが、本制度においては、設備・運用面をバランスよく盛り込むとともに、情報セキュリティマネジメントの観点からの管理策を付加した審査基準となる。審査基準は、JIS化およびその後の周知状況を踏まえて、より時代に適合したものにするために見直し、改訂していくものとする。



■ ISMSフレームワークの確立

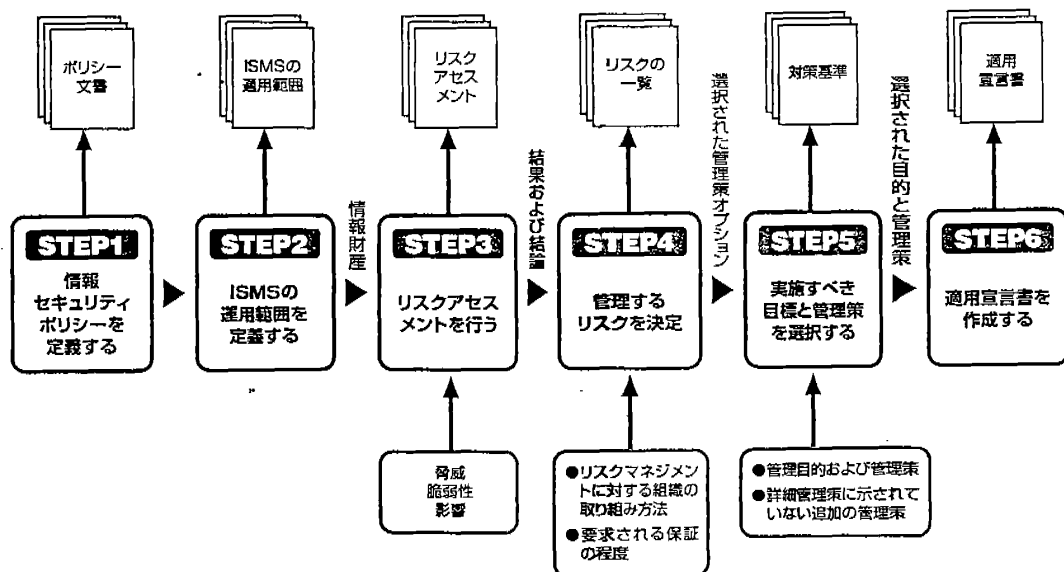
1 ISMSのフレームワークに関する要求事項は、ISMSのマネジメントシステムのセキュリティポリシー、管理目的、管理策、システム運用（実施）、さらには情報セキュリティポリシー文書をはじめとするシステム文書、文書管理及び記録管理に関するものである。

2 このフレームワークの確立にあたりセキュリティポリシーを策定（STEP1）し、その中でISMSの適用範囲（STEP2）を決定する。策定したセキュリティポリシーに基づきリスクアセスメント（STEP3）を実施する。フレームワークのもとで管理するリスクを決定（STEP4）する。最適なリスクアセスメントにもとづき、実施すべき管理策を選択（STEP5）する。管理策は、情報セキュリティ上の管理策についての最適慣行を示している。また、個別具体的な「詳細管理策」は、一般的に有効であると認められた管理策の詳細が示されている。

詳細管理策

- | | |
|--|--|
| <ul style="list-style-type: none"> ●セキュリティポリシー Security Policy ●セキュリティ組織 Security Organisation ●財産の分類及び管理 Assets Classification and control ●スタッフのセキュリティ Personnel security ●物理的及び環境的セキュリティ Physical and environmental security | <ul style="list-style-type: none"> ●通信及び運用管理 Communications and Operations management ●アクセス制御 Access control ●システムの開発及びメンテナンス Systems development and maintenance ●事業継続管理 Business Continuity management ●準拠 Compliance |
|--|--|

3 「詳細管理策」にある全ての管理策が実施されなければならないわけではなく、リスクアセスメントおよび要求されるシステムの保証の程度に基づき管理策を選択して実施できる。特に重要なことは、この選択については適用宣言書で明確に公表（STEP6）することにある。また、上記の管理策だけでなく、組織がリスクアセスメントやリスクマネジメントなどを通じて必要と思われるより良い管理策を追加しなければならない。



(BS7799-2より作成)

■ ISMS適合性評価制度の運用

新たな管理基準の策定

ISMS制度では、ISO/IEC 17799に立脚し、あわせて要求事項(基準)については、英国の情報セキュリティマネジメント基準の要求事項(BS 7799-2)を参照し、JIS制定及びその周知状況を踏まえ改訂していくこととする。



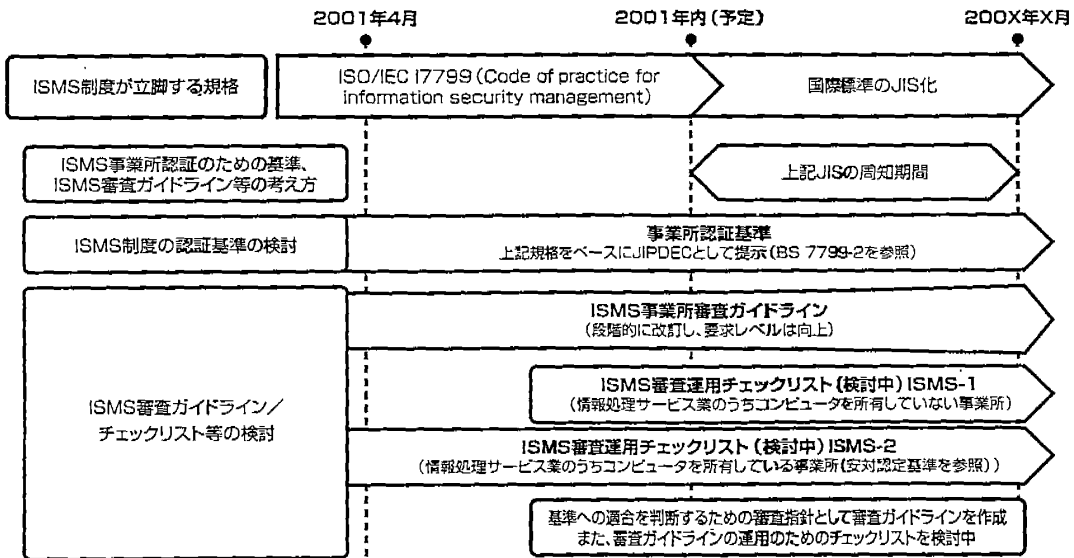
- 規格 ⇒ ISO/IEC 17799:2000
- 要求事項(基準) ⇒ BS 7799-2:1999
- 実施ガイドライン ⇒ ISMS事業所審査ガイドライン、ISMS審査運用チェックリスト(検討中)

継続性の確保

従来の安対制度の審査基準は、設備等の物理的な対策に比較的重点を置いていたが、本制度においては設備・運用面をバランスよく盛り込むとともに情報セキュリティマネジメントの観点を付加した審査基準を策定する。運用当初は、ある程度現行制度の審査基準を引き継ぎ、必要最小限の情報セキュリティマネジメントに関する事項を付加した内容とする。その後は情報セキュリティマネジメントプロセスの証跡性に重点をおいた審査基準について検討する。

制度の対象範囲(段階的な適用)

本制度の対象範囲は、現行の制度に準じて「情報処理サービス業を営む者」とする。情報処理サービス業とは、「他人の需要に応じてする情報処理を行う事業」(「情報処理の促進に関する法律」昭和45年5月22日 法律第90号)で、電子計算機を用いて計算を行う事業および検索を行う事業等が該当する。また、本制度は従来の安対制度の審査基準では認定を取得できなかった新しい形態の情報処理サービス事業者をカバーすることも検討する。将来には、ニーズに応じて法律で定められた情報処理サービス業以外の分野の事業者への適用を検討する。



■ ISMS適合性評価制度のスキーム

(財)日本情報処理開発協会 (JIPDEC)

- 本制度全体を運用するとともに、ISMS制度を維持管理する。
- 本制度の審査機関を指定するとともに、指定審査機関を登録管理する。
- 必要に応じて指定審査機関の審査をオブザーブする。
- 指定審査機関より第三者評価希望事業者の審査結果の報告を受けるとともに、事業者を登録公表する。
- 段階的にISO/IEC Guide61 (JIS Z9361)の要求事項をクリアする。

指定審査機関

- 指定基準 [ISO/IEC Guide62 (JIS Z9362)を準用]に基づき審査機関を整備する。
- 第三者評価希望事業者の申請を受け付けるとともに、審査を実施する。
- 審査結果により第三者評価希望事業者を認証する。
- 審査結果はJIPDECへ届出(審査報告)をする。

第三者評価希望事業者

- 申請対象システムのISMS制度を確立する。
- 本制度の認証を希望する事業者は、指定審査機関に対して申請することができる。
- 本制度の評価基準に基づき審査を受けることができる。
- 審査結果に基づき認証登録を受けることができる。
- 認証を受けた場合には、ISMS制度の規程に従ってマークを付すことができる。

