

PROFILE OF LEVEL 3 COMMUNICATIONS (LEVEL 3)¹

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Introduction

The name Level 3 Communications only stretches back to the beginning of 1998, with the company itself (under the name KDG) effectively beginning in its present form when James Q Crowe left WorldCom to become its President and CEO in mid 1997. The arrival of this new "start-up" within the communications industry was met with an unprecedented level of interest. In reporting its launch, for example, the Wall Street Journal stated that:

"The telecom industry is being shaken to its circuit switches by network upstarts that are building new systems promising far faster transmission and lower operating costs..."²

Much of the credit for this dramatic entrance was down to Crowe who had already impressed the industry (and Wall Street) through his involvement with Metropolitan Fibre Systems Communications (MFS). For many commentators Level 3's planned network meant that Crowe would be the future "Baron of Broadband".³ Given his prominence within the company it was seldom mentioned without an explicit name-check. Forbes, for example, claimed that:

"Jim Crowe's Level 3 Communications has yet to connect a call, but it has the potential to become one of the world's most powerful telcos"⁴

Mark Bruneau of Renaissance Worldwide seemed to agree with these sentiments claiming that:

"It's a dream team with a dream network and a killer business plan. Just as long as they don't screw it up"⁵

Interestingly, Level 3 reproduced these remarks on its web site - with the omission,

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² Wall Street Journal (20/1/98)

³ Barron's (14/6/99)

⁴ Forbes (7/9/98)

⁵ Quoted in USA Today (1/4/98)

that is, of the final sentence.⁶ Perhaps this omission is of some relevance. Looking at this potential for “screwing it up” in more detail, one possible danger stems from the fact that while the company is a new player on the scene, Crowe and Level 3 arrived with an established reputation. Suffice to say that many of the existing operators did not view them favourably. This relationship with the industry has been intensified by Crowe’s involvement with some of the sector’s key companies. He has been on the board of both WorldCom and Qwest Communications and his current relationship with both companies is a matter of some speculation. Picking up on these close links, one influential source has stated that:

"If the companies engaged in building new-wave telephone networks...are still a small family, Level 3's history is pretty damned incestuous" ⁷

If Level 3 does face difficulties in implementing its business plan they may well emerge from within this notional family.

While Level 3 has been heralded as the harbinger of a new technological era in communications, its early years have not seen it totally detached from the technology of the past. Many of its admirers on Wall Street, for example, may be surprised to learn that the bulk of its 1997 and 1998 revenues came from the supply of coal. That the company is aware of this paradox is shown by the heading within the FAQ section of its investment pack, which reads:

“What is the deal with the Level 3 subsidiary, Kiewit Coal Properties (KCP)?”⁸

The “deal” was that this old-world company was left inside Level 3’s corporate structure in order to give it an early revenue flow. In doing so it provided an interesting twist for a company which claims that it is basing its business “...on the economics of the future and not the past”.⁹

Moving on from coal, it has also been widely noted that companies such as Level 3, for all their “new age” pretensions bear a striking resemblance to those outfits active in another of the growth industries of 100 years ago. The New York Times, for example, has stated that the telecommunications industry:

“has come to resemble the railroad and steel industries of a century ago in its ruthless dashes for assets and market share” ¹⁰

Barron's, in describing Level 3’s proposed network, suggested that, "It's a grandiose scheme reminiscent of the 19th century railroad construction boom".¹¹ It went on to point out the many parallels which exist between the terminology used within the two

⁶ Level 3 Web site, Company Info section (10/9/99)

⁷ Redherring.com (3/4/98)

⁸ Level 3 Investment pack (1999, p3)

⁹ Annual Report, 1998, p8

¹⁰ The New York Times (14/6/99)

¹¹ Barron's (14/6/99)

industries, with talk of "traffic" from local "feeders" to "trunk lines", employing "switching" mechanisms. The fact that Level 3 (following Qwest) is using the railroads' rights of way to lay its cable compounds the analogy. The railway connection is strengthened further by one commentator's explanation that while traditional circuit switching is equivalent to a single rail line dedicated to one car, packet switching (as used by Level 3) involves "sending a train of tankers, boxcars and refrigerator cars down the line".¹² Even USA Today seemed to sense the parallels, stating that one of the reasons that Crowe was prepared to let MFS go to WorldCom was that, "He knew the Internet train was coming...".¹³

1/Origins and Development

Level 3 was originally founded in 1985, as part of the newly created Kiewit Diversified Group Inc. (KDG), a wholly owned subsidiary designed to hold the non-construction business assets of Peter Kiewit Sons' Inc (PKS) - a long established private company headquartered in Omaha, with interests in construction, mining, information services and communications.¹⁴ On June 19, 1997, Crowe assumed the positions of President and CEO at KDG.

On January 19, 1998, KDG announced that it would be changing its name to Level 3 Communications Inc., to reflect its increased focus upon telecommunications and information services. The name was taken from the layered set of protocols (with level 3 and the associated routing switches, being the most advanced) which are used within the computer and communications industries to describe networks.¹⁵ This name was much more appropriate for a new generation communications provider and allowed it to be grouped alongside other dynamic sounding outfits such as Qwest and Global Crossing.

On March 31, 1998, Level 3 became an independent corporation following completion of the separation of the company from the remainder of KDG.¹⁶ Remaining within the new Level 3 Group would be PKS Information Services (PKSIS), involved in outsourcing, systems integration and Internet solutions and the coal mining subsidiary, KCP. The previous month it had been announced that the new company would have its headquarters in Denver (already host to Qwest and U.S West). When looking at Level 3's origins two members of the "dream team" referred to in the introduction stand out: namely James Q Crowe and Walter Scott Jnr.

James Q. Crowe

¹² Thestreet.com's (14/9/98)

¹³ USA Today (1/4/98)

¹⁴ Level 3 web site - historic milestones

¹⁵ Level 3: FAQs, p1, Investor Pack, 1999, Business Communications Review (Sept. 1997)

¹⁶ Level 3 web site - historic milestones

By the time Crowe got involved with Level 3 he was already “an established success story” in the communications business, through his association with MFS Communications.¹⁷ This pedigree lay behind the comments by Forbes that in the case of Level 3, “Investors are betting on the jockey as much as the horse”.¹⁸ Similarly, Thestreet.com, writing around the same time, suggested that:

“Despite its lofty ambitions, Level 3 is at such an early stage as to be little more than an investment in Crowe himself”,¹⁹

Crowe started off an engineer. He studied Mechanical Engineering at Rensselaer Polytechnic, New York and later completed an MBA at Pepperdine University in California. He was employed in the construction electric power plants for Morrison Knudsen, when, denied a promotion in 1986, he left to work for Peter Kiewit Sons’.

This company’s Chairman at the time was Walter Scott Jnr and in 1988 the two men, having worked together on the opportunities thrown up by electricity de-regulation, changed direction and started collaborating on a plan to build one of the first independent telecom networks in the U.S.. The result was MFS Communications which, having invested around \$500 million in the network, went public in 1993, with Crowe in charge.²⁰ In 1996 it was acquired by WorldCom in a deal worth \$14.3 billion, with Crowe continuing to work for the new owners (albeit briefly).

Concentrating upon the business sector, and benefiting from the liberalisation of the U.S. telecoms market, MFS was a phenomenal success. Between the time the stock went public in 1993 and the company was sold to WorldCom, its stock price rose by a factor of six.²¹ During a 33 month run of its existence on the stock market MFS increased its market value by more than any other U.S. company.²² After the sale Crowe and Scott together walked off with nearly \$700 million in WorldCom stock and options.²³

An examination of Crowe’s business personality throws up a number of apparent contradictions. He has “an all-business demeanour” and yet dresses casually with the normal CEO outfit of suit and tie seldom seen.²⁴ He is also said to have a wry sense of humour, with his sardonic view of the industry apparent in his comments that:

“Monopolies offend me...They stifle innovation and lead inevitably to waste. Introducing markets to monopolies is a lot of fun”,²⁵

The son of Henry P. Crowe, a much decorated World War II marine, “He has a

¹⁷ Telecom Business (January, 1999)

¹⁸ Forbes (7/9/98)

¹⁹ Thestreet.com (14/9/98)

²⁰ Forbes (7/9/98)

²¹ Barron's (14/6/99)

²² InformationWeek (19/1/98)

²³ Barron's (14/6/99)

²⁴ Forbes (7/9/98)

²⁵ Quoted in Ibid

reserved, almost military bearing”.²⁶ Yet he is said to be "evangelic" when it came to explaining his business objectives.²⁷ He is reported to inspire great loyalty in his fellow executives, with a significant number leaving WorldCom to reunite with him at Level 3 (see below). On the other hand, he has also made a number of key enemies within the communications business (also dealt with below).

Crowe is seen as a corporate risk taker, although the risks are always systematically calculated.²⁸ Unlike some of the other bosses of the new generation of telcos he has a solid grasp of the engineering side of the business. He has been described as a "technology nut" and as someone who has a genuine interest in the innovations taking place within the communications industry.²⁹

Walter Scott Jnr

Scott, like Crowe a trained engineer, had for decades been the Chairman of Peter Kiewit Sons', a "publicity-shy" conglomerate involved mainly in large scale construction projects.³⁰ The company is based in Omaha and its head-quarters share the same office building (known as Kiewit Plaza) as Warren Buffett's company, Berkshire Hathaway. Scott has also been a long serving Director of Buffett's much admired company. As such, Scott knew "the sage of Omaha" (as the press like to call him) extremely well, and in 1995 when Buffett arranged one of his regular gatherings for his inner circle he was one of the participants. The location was Dublin and other guests included Bill Gates and his wife who gave a presentation on the business potential of the Internet. The meeting convinced Scott that his new communication company, MFS, should start to look at integrating the Internet into its plans. As Scott put it, "my gut feeling was, if you weren't part of it, you were going to be left behind".³¹

The result was "Project Silver" (with Crowe in charge), which led the company to conclude that it would have to move fast to buy its way into the Internet. In April 1996, MFS bought UUNet, the dominant ISP in the U.S. for \$2 billion. Interestingly, Microsoft had a large stake (14.7 percent) in the company and did well out of the "stunning" price paid by MFS.³²

According to Forbes' list of the 400 richest people in the U.S. Scott was ranked in 55th place, with a fortune estimated at \$3.8 billion.³³ In addition to his Directorships at Level 3, Peter Kiewit Sons' Inc. and Berkshire Hathaway, Scott was also a Director of the following companies as of year end 1998: Burlington Resources, CalEnergy, Commonwealth Telephone Enterprises, ConAgra, RCN Corp., U.S. Bancorp, and

²⁶ Ibid

²⁷ Barron's (14/6/99)

²⁸ Forbes (7/9/98)

²⁹ USA Today (1/4/98)

³⁰ USA Today (1/4/98)

³¹ Quoted in USA Today (1/4/98)

³² USA Today (1/4/98)

³³ Forbes web site (10/9/99)

Valmont Industries.³⁴ In association with Buffett he also has a 50 percent share of minor league baseball's Omaha Golden Spikes.³⁵

From MFS to Level 3

The strategy which Scott and Crowe were putting into place at MFS required a new vehicle after that company's takeover by WorldCom. That vehicle, like MFS before it, emerged from within the corporate structure of Peter Kiewit Sons'. Hence there was a considerable amount of continuity between the two ventures - a case of "unfinished business".³⁶ USA Today took this view, stating:

"The concept for Level 3 is simple: It's MFS with a fresh start. Same business plan, but this time based on Internet Protocol (IP) technology"³⁷

The shift to IP lay at the heart of the new company. This was picked up on by USA Today which suggested that in studying the potential for the Internet while at MFS, Crowe's epiphany had come when he noticed in an industry newsletter that sending a document by fax from New York to Tokyo using AT&T would have cost \$28.38. The same document sent over the Internet would have cost 9.5 cents.³⁸ He was converted. Commenting upon the Internet, and its inherent price advantage, Crowe stated:

"That's when I realized this was not driven by cool people on the cover of Newsweek...It was driven by economics..."³⁹

In reinventing MFS for a new age Crowe relied heavily upon his former executive colleagues (see below). This gave the new company a strong initial platform: as Morgan Stanley Dean Witter put it:

"In an industry where management and execution are critical, they have a top notch group of people with a proven ability to execute and an ability to learn from their mistakes"⁴⁰

Similar sentiments were forthcoming from Salomon Smith Barney which argued that:

"Level 3's premier management team is tested, proven, and probably the company's most valuable asset"⁴¹

Soon after the formation of the new company it was announced that it would have its

³⁴ Level 3 Web site, Officers' Profiles (30/12/98)

³⁵ Forbes web site (10/9/99)

³⁶ Telephony (26/1/98)

³⁷ USA Today (1/4/98)

³⁸ Ibid

³⁹ Quoted in Ibid

⁴⁰ Quoted in Global Telecoms Business (April 1999)

⁴¹ Quoted in Level 3 Annual Report, 1999, p7

headquarters in Denver at a new \$70 million complex.⁴²

Enemies Along the Way

Crowe's rise to prominence within the communications industry has not been to everyone's liking. As Redherring.com delicately put it:

“Like any brash entrepreneur, Mr Crowe began peeing in a bunch of different ponds, upsetting many of telecom's luminaries”.⁴³

With the incredible success of MFS, Crowe, not surprisingly, ruffled a few of feathers within the rigid and slow moving telecoms industry. Speaking of MFS' strategy of focusing upon direct links to business customers, for example, Barron's maintained that:

"The Bells, of course, loathed Crowe and his renegade unit, MFS Communications, for skimming off the cream of their customer base"⁴⁴

Prior to announcing the launch of Level 3 Crowe was also briefly on the board of Qwest - having been noticed and recruited by Philip Anschutz, the principal shareholder in the company. Since leaving the company his relationship with its "fiery" CEO, Joe Nacchio, is said to be "chilly", not least after Level 3 moved into Qwest's Denver neighbourhood.⁴⁵ Nacchio's irritation with Crowe was reported to have been heightened when Level 3 quickly announced that it was emulating Qwest by laying its cable along part of the Union Pacific Railroad.⁴⁶

The Wall Street Journal, on the other hand, quoted Mr Nacchio's comments that Crowe was a "good friend", indicating that talk of a rift was sensationalist.⁴⁷ Ultimately, implied the Journal, it was all about business, referring to Nacchio's additional observation that, "We're a couple of years ahead of him in terms of building our network. I hope we can sell him some wholesale distance capacity."⁴⁸ Crowe also seems quite business-like in his attitude to Qwest, stating in one press interview that, "I view Qwest as a well managed organization and I have great respect for them".⁴⁹

While the existence of personalised conflict between Level 3 and Qwest seems to have been slightly exaggerated, however, there seems to be more of a case for arguing that Level 3's relationship with MCI WorldCom is indeed somewhat strained. Three weeks after the MFS merger with WorldCom was complete Crowe quit his new post with the company and moved back home.⁵⁰ Bernie Ebbers, CEO of WorldCom was

⁴² Barron's (14/6/99)

⁴³ Redherring.com (3/4/98)

⁴⁴ Barron's (14/6/99)

⁴⁵ USA Today (1/4/98)

⁴⁶ Redherring.com, (3/4/98)

⁴⁷ Wall Street Journal (20/1/98)

⁴⁸ Quoted in Ibid

⁴⁹ Global Telecoms Business (April 1999)

⁵⁰ USA Today (1/4/98)

naturally taken aback. But worse was to come. In launching Level 3 Crowe relied on many of the same executives he had worked with at MFS. Indeed 20 out of 21 of Level 3's top positions went to former MFS executives, many lured out of retirement by tempting stock option deals.⁵¹ A significant proportion, however, were lured away from their new employer, WorldCom.

The resulting exodus did nothing to improve Crowe's relationship with his recent employer. As one publication saw it:

"Crowe's departure from WorldCom irritated Ebbers. But the mass exodus made him boil"⁵²

A similar account was told by Redherring.com which referred to Bernie Ebbers' "chagrin" when many of the former MFS executives were lured away.⁵³ The episode was also picked up on by USA Today which claimed that, "The rancour runs deep throughout WorldCom". It went on to suggest that in Bernie Ebbers, Level 3 had made itself a "dangerous enemy".⁵⁴

⁵¹ Forbes (7/9/98)

⁵² USA Today (1/4/98)

⁵³ Redherring.com (3/4/98)

⁵⁴ USA Today (1/4/98)

2/Investors

Crowe's original investment in Level 3 has been estimated at between \$55 - \$60 million.⁵⁵ This initial stake had a market value of around \$850 million by mid-1999.⁵⁶ Explaining his large investment, Crowe stated that:

"I'm a big believer that if you're going to run something you ought to own a piece of it"⁵⁷

Scott's initial investment was around three times that of Crowe's and was valued at \$2.7 billion by mid-1999.⁵⁸

Another significant investor in Level 3 was Donald Sturn who originally worked as a tax counsel for Peter Kiewit Sons' and then moved into finance and deal-making. As of late-1998 he was reported to be Level 3's second largest shareholder with a stake of \$600 million (plus another \$700 in old MFS shares).⁵⁹

As of 1999 approximately 18 percent of Level 3 stock was in the hands of institutions (numbering 242 in total).⁶⁰ Table 1 shows that just under 20 percent of the company is in the hands of its management, with Scott the dominant stockholder.

TABLE – 1 MAIN STOCKHOLDERS IN LEVEL 3	
As of February 2000 (percent)	
Walter Scott Jnr	9.2
William Grewcock	3.2
James Crowe	3.0
All Directors	19.4*
Donald Sturn	5.1
* includes the holdings of Scott, Grewcock and Crowe	
Source: SEC Form 14A, 17/4/2000	

Peter Kiewit Sons' initially invested between \$2.5 billion and \$3 billion in Level 3.⁶¹ Part of this was raised through the sale of CalEnergy for \$1.2 billion soon after Crowe took control.⁶² The company also raised funds through the sale its interest in a private

⁵⁵ Forbes (7/9/98), Barron's (14/6/99)

⁵⁶ Barron's (14/6/99)

⁵⁷ Quoted in Forbes (7/9/98)

⁵⁸ Barron's (14/6/99)

⁵⁹ Telephony (12/10/98)

⁶⁰ Thestreet.com web site (9/10/99)

⁶¹ InformationWeek (19/1/98)

⁶² Wall Street Journal (20/1/98)

toll road in California.⁶³ In addition it left some cash generating businesses such as the coal mines and computer services within the Level 3 spin-off company to tide it over during its early years.

The starting capital for the company was, suggested Crowe, greater than that available at the time for all new ventures in Silicon Valley.⁶⁴ This well-financed start was recognised by Global Telecoms Business which stated that it "...is clearly one of the best capitalized start-up businesses".⁶⁵ A similar view was taken by Vantage Point Venture Partners who argued that, "From a financial fire-power analysis, Crowe's got what it takes".⁶⁶

3/Mergers, Acquisitions and Joint Ventures

Mergers

On August 18, 1998 Level 3 signed a definitive merger agreement with GeoNet Communications Inc, a regional ISP based in Redwood City, California. The deal was valued at approximately \$21 million.⁶⁷

Acquisitions

On April 6, 1998, Level 3 signed a definitive agreement to acquire XCOM Technologies, a Competitive Local Exchange Carrier (CLEC) and communications software developer.⁶⁸

Forbes suggested that with this \$165 million purchase, "A key chunk of Crowe's strategy fell into place...".⁶⁹ In explanation, it stated that packet switching, when applied to telephony, had been the "Achilles' heel" of level 3 due to its poor quality and cumbersome dialling procedures. But with XCOM, Level 3 got access to soft switch technology which allowed conventional dial access to IP calls. This rationale for the acquisition was made explicit by Crowe who stated that, "XCOM Technologies was acquired to get the initial framework for our soft switch technology."⁷⁰ Telephony felt the purchase would give Level 3 a "jump-start" to its business strategy.⁷¹

⁶³ Internet Week (20/4/98)

⁶⁴ Wall Street Journal (20/1/98)

⁶⁵ Global Telecoms Business (April 1999)

⁶⁶ Quoted in Information Week (19/1/98)

⁶⁷ Level 3 web site - historic milestones

⁶⁸ Ibid

⁶⁹ Forbes (7/9/98)

⁷⁰ Global Telecoms Business (April 1999)

⁷¹ Telephony (13/4/98)

On July 13, 1998 Level 3 bought UlytraLine (Bermuda) Ltd, a telecommunications start-up company offering high-speed transatlantic service to business customers.⁷²

On September 15, 1998 Level 3 announced the acquisition of Miknet, a German ISP, which gave the company an initial presence in the European market.⁷³

On January 5, 1999, Level 3 bought BusinessNet Limited, a London based ISP in a deal valued at \$18 million.⁷⁴

Joint Ventures

In December 1997 Level 3 announced a 48 percent stake in RCN Corp, which was involved in building cable and fibre lines to residential customers in the North East of the U.S..⁷⁵

In March 1998 Level 3 agreed to lease approximately 8,300 miles of network capacity on the network being built by Frontier Communications International. The five year deal involved an aggregate payment of around \$165 million.⁷⁶

In April 1998 Level 3 signed a fibre optic agreement with Union Pacific Railroad granting it the use of around 7,800 miles of rights of way along the company's rail routes, primarily west of the Mississippi.⁷⁷

In June 1998 the company announced that it had selected Peter Kiewit Sons' Inc (its original parent company) to construct a 15,000 mile national communications network which would serve as the intercity or long distance portion of the Level 3 national network.⁷⁸

Also in June 1998 Level 3 announced the formation of a new technical advisory council (TAC) to develop a set of technical standards to bring together existing circuit-based public switched telephone networks (PSTN) with the emerging Internet Protocol (IP) based networks.⁷⁹ Other participants included 3Com, Ascend, Alcatel, Cisco, Ericsson, Lucent and Nortel.⁸⁰ Level 3's goal, as part of this TAC, was to push for equal access to the public network which would allow customers to easily select and use IP network operators.⁸¹ Level 3 was also later a founding member of the

⁷² Level 3 web site - historic milestones

⁷³ Ibid

⁷⁴ Annual Report, 1998, p80

⁷⁵ Forbes (7/9/98)

⁷⁶ Annual Report, 1998, p78

⁷⁷ Level 3 web site - historic milestones

⁷⁸ Ibid

⁷⁹ Ibid

⁸⁰ Computer Technology Review (July 1998)

⁸¹ Telephony (13/7/98)

International Softswitch Consortium, in early 1999, which furthered the cause of inter-connectivity between traditional and IP networks.⁸²

Again in June 1998 Level 3 reached an agreement with Burlington Northern and Santa Fe Railway Company (BNSF) which gave it right of way access to BNSF's rail routes. In conjunction to Level 3's prior agreement with Union Pacific, it would be able to construct more than 9,000 miles of cable, connecting as many as 26 major U.S. cities.⁸³

In July 1998 Level 3 announced an agreement with INTERNEXT, LLC, a subsidiary of NEXTLINK, allowing it the right to use 24 fibres and certain associated facilities along the entire route of the Level 3 intercity fibre optic network in the U.S..⁸⁴

Commenting upon the deal which involved the well known founder of INTERNEXT, Craig McCaw, Forbes indicated that the price agreed was \$700 million - or a full one-third of the construction cost of the Level 3 network.⁸⁵ The deal would allow McCaw's companies, including wireless operator Nextel Communications, Nextlink and the holding company Eagle River to use the Level 3 network for their interconnection needs.⁸⁶ Speaking on the deal, McCaw was complimentary of his partner-company stating that, "Level 3 epitomizes the perfect partner for us. They are smart, honest and know what it takes to build networks".⁸⁷

In August 1998 Level 3 entered into an agreement with a number of other global communications companies to construct an undersea cable between Japan and the U.S.. The project, due for completion around mid-year 2000, would involve approximately \$130 million of expenditure for the company.⁸⁸

In October 1998 Level 3 reached an agreement with Global Crossing for transatlantic capacity on its AC-1 system. The agreement over 25 years was valued at \$108 million and gave Level 3 the option of utilising other parts of the Global Crossing network.⁸⁹

In December 1998 Level 3 reached an agreement with IXC Communications Inc to lease capacity on its network. The deal involved an initial payment of \$40 million.⁹⁰

In early 1999 Level 3 entered into an agreement to lease capacity on its network to RCN (one of its equity investments). The two companies also reached joint construction agreements in several of RCN's markets through which the two companies would share the cost of constructing their respective networks.⁹¹

⁸² Dowjones.com (23/6/99)

⁸³ Level 3 web site - historic milestones

⁸⁴ Ibid

⁸⁵ Forbes, (7/9/98)

⁸⁶ Telephony (27/7/98)

⁸⁷ Quoted in Annual Report, 1998, p29

⁸⁸ Annual Report, 1998, p79

⁸⁹ Ibid

⁹⁰ Ibid

⁹¹ Ibid

In May 1999 Level 3 said it would make Broadcast.com its exclusive provider of Internet broadcasting, and provide the broadcaster with a “fat pipe” to deliver its content at high speed. The companies also indicated that they were working jointly on future product offerings.⁹²

Also in May 1999 Level 3 raised a few eye-brows by announcing its collaboration with Colt Telecom to complete their European networks.⁹³ Each partner would be given the right to lay cable and electronics in the other company’s conduits. Colin Williams, Executive President of Level 3 International denied that through such cost sharing the two companies were demonstrating a certain complacency, stating that, “We will still fight it out toe-to-toe as competitors.”⁹⁴

In June 1999 Level 3 reached a marketing agreement with North Point Communications a CLEC to co-market digital subscriber line (DSL) services in six U.S. markets.⁹⁵

In September 1999 Level 3 said that it had reached a non-exclusive agreement with Zell’s Equity Office Property whereby its communication services would be offered to the tenants within that company’s 285 buildings (with a daily throughput of 320,000 people).⁹⁶

On February 17, 2000, Level 3 announced a co-build agreement whereby Global Crossing would participate in the construction of and obtain a 50 percent ownership interest in the previously announced Level 3 transatlantic fibre optic cable. Under the co-build agreement, Level 3 and Global Crossing would each separately own and operate two of the four fibre pairs on Level 3’s transatlantic cable. Level 3 also announced that it would acquire additional capacity on Global Crossing’s transatlantic cable Atlantic Crossing 1.⁹⁷

On April 12, 2000, Level 3 signed an agreement with Viatel whereby Viatel agreed to purchase an ownership interest, valued at over \$150 million, in one fibre pair on Level 3’s transatlantic cable. As a result of this agreement, both companies would own and operate one fibre pair on the transatlantic cable (with the other two fibres being controlled by Global Crossing).⁹⁸

Equity Investments

According to its 1998 Annual Report Level 3 had holdings in three companies (previously all part of C-TEC): RCN, Commonwealth Telephone and Cable

⁹² Dowjones.com (27/5/99)

⁹³ FT (5/5/99)

⁹⁴ Quoted in Ibid

⁹⁵ Dowjones.com (16/6/99)

⁹⁶ Bloomberg.com (8/9/99)

⁹⁷ SEC 10Q Document, 2/11/2000

⁹⁸ Ibid

Michigan. On November 6, 1998, Cable Michigan announced that it had been purchased by Avalon Cable for \$40.50 a share in cash. This transaction raised approximately \$135 million for Level 3.⁹⁹

Its remaining stake in RCN and Commonwealth Telephone stood at 41.6 percent and 48.4 percent respectively, as of April 1999.¹⁰⁰ The company indicated that it had no plans to sell these holdings. The value of these investments as of year end 1999 was put at \$818 million.¹⁰¹ In the second quarter of 1999 Level 3 reported that due to the issuance of further stock by RCN, its stake had fallen to 35 percent. At the same time Level 3 recognised a pre-tax gain of \$111 million from its ongoing investment in RCN.¹⁰²

Recent Suppliers

In June 1999 Level 3 agreed to purchase IP7 Secure Gateways from Tekelec to be used for signalling in its international IP network.¹⁰³

Also In June 1999 Level 3 announced that it was buying packet switches and other telecom equipment from Lucent Technologies Inc. in a four-year deal valued at \$250 million (which could increase to \$1 billion over a longer period).¹⁰⁴ An important part of this deal involved Lucent's new Softswitch which Level 3 intended to use as part of its IP telephony service.¹⁰⁵

In July 1999 the company awarded a contract to Andrew Corporation to supply and install equipment shelters at 96 sites along its network in the U.S. and Canada.¹⁰⁶

Also in July 1999 Level 3 announced that it had reached an agreement with the Canadian company, Nortel Networks Corp., to provide it with fibre optic equipment. The value of the contract was not disclosed.¹⁰⁷

Recent Customers

In late 1998 NetZero Inc, a new start-up company began offering free Net Access, accumulating 700,000 customers within 6 months. It chose to outsource its network to Level 3 (and AGIS and GTE), thereby saving it a significant amount on infrastructure costs.¹⁰⁸

⁹⁹ Level 3: FAQ's, p5, Investor Pack, 1999

¹⁰⁰ Ibid

¹⁰¹ Annual Report, 1998, p49

¹⁰² Press Release (22/7/99)

¹⁰³ Dowjones.com (7/6/99)

¹⁰⁴ Level 3 Press Release, Dowjones.com (23/6/99)

¹⁰⁵ Network World (28/6/99)

¹⁰⁶ Dowjones.com (22/7/99)

¹⁰⁷ Dowjones.com (28/7/99)

¹⁰⁸ Business Week (26/4/99)

In June 1999 Net2000 Communications a “super-regional telecommunications provider” announced an agreement with Level 3 for co-location and backbone facilities.¹⁰⁹ In the same month another agreement was reached with IPVoice.com whereby Level 3 would provide co-location facilities for the firm’s TrueConnect Gateways.¹¹⁰ Also that month Scoot.com PLC said it had selected Level 3 as the hosting facility for its UK, Dutch and Belgian web sites.¹¹¹

In August 1999 ebaseOne, a company involved in the Application Service Provider (ASP) market chose Level 3 for its co-location and network services.¹¹²

In September 2000 it was announced that Level 3 would be providing “dark fibre” to France Telecom which was constructing its own US network linking 28 cities in the US and Canada.¹¹³

4/Network

At the heart of Level 3 is its network, or more accurately its planned network. More than any of the new generation telcos Level 3 has been defined by its network facility, based as it is purely upon IP. The revolution in technology and thinking which this involves has been frequently commented upon by Crowe. The gist of his approach was shown through his comments that:

"Unlike the existing networks - which are voice networks that have been tweaked to accommodate data - we are building a data network, which can handle voice"¹¹⁴

It is this total focus upon the transportation of data using IP which has made Level 3 stand out from its peers. As The New York Times pointed out, while competitors such as Qwest have relied upon traditional as well as IP-based technologies, “Level 3 is trying a pure Internet approach”.¹¹⁵ This image of the technological “purist” has been facilitated by the fact that Level 3 has been able to plan and design its network from scratch with no legacy equipment to write off. As Crowe put it "It's a wonderful thing to have a blank piece of paper".¹¹⁶

In making the network a reality the company has frequently denied criticisms that they will be contributing to a future glut of bandwidth. Rather, Level 3 maintain that the economics of the industry are undergoing a fundamental change and that through competitive pricing it will be able to attract an unprecedented volume of traffic (see Strategy section). This has led some commentators to describe the network as a

¹⁰⁹ Dowjones.com (23/6/99)

¹¹⁰ Dowjones.com (15/6/99)

¹¹¹ Dowjones.com (1/6/99)

¹¹² Dowjones.com (12/8/99)

¹¹³ FT (27/9/2000)

¹¹⁴ Level 3 FAQ, Investment Pack, 1999

¹¹⁵ The New York Times (24/6/99)

¹¹⁶ Quoted in InformationWeek (19/1/98)

"build it and they will come" project.¹¹⁷

The network itself will be the world's first global end-to-end IP network, entirely composed of self-healing SONET rings and utilising dense wave division multiplexing (DWDM). The multi-conduit specification of the network will make it continuously upgradable with only one out of the six to eight pairs of fibre conduit originally laid actually containing fibre. The empty conduits are there as ready channels for additional future capacity. As Forbes put it, "The expansion capacity is awesome." It went on to point out that the fibre in just one pair of conduits would be able to transmit 60 trillion bits of information per second - the equivalent of 750 million phone calls.¹¹⁸

Initially, Level 3 utilised high-speed Internet switches made by Cisco Systems Inc. for the core of its network. Subsequently, it also turned to Lucent, the former equipment arm of AT&T, to help replicate the quality and reliability of the conventional phone network, but using Internet technology. This, it hopes to achieve through the use of Lucent's "softswitch" - software designed to enhance the quality and reliability of IP telephony. Speaking of this technology, James Crowe commented that:

"The Lucent softswitch, together with Level 3's I.P. network, will bring customers the best of both the traditional telephone network and the Internet - ubiquity and reliability combined with rapid cost reductions and innovative new services"¹¹⁹

Level 3's planned International IP network consists of:

- Local networks in 50 U.S. cities
- A 16,000 mile long distance (inter-city) network across the U.S.
- Local networks in 21 cities in Europe and the Pacific Rim
- A 3,500 mile Pan-European network¹²⁰

The business plan underlying the construction of the network has been divided into five phases. Each phase has been designed to be fully operable on its own. It is also anticipated that different phases will be constructed simultaneously (i.e. the network is non-sequential). The phases are defined as follows:

- 1/ Local network in 20 U.S. cities and 9,000 inter-city miles.
- 2/ Local network expanded to 25 cities and inter-city route to 16,000 miles. European network to consist of 6 European cities and 2,000 Pan-European network miles.
- 3/ 8 more cities to be added in Europe and Asia, with an additional 500 Pan-European network miles.
- 4/ Another 5 cities to be added in the U.S. with the international inter-city network being increased to 3,500 miles.
- 5/ Another 20 U.S. cities to be added (making a total of 50) together with 7 more

¹¹⁷ Quoted in Bloomberg.com (7/9/99)

¹¹⁸ Forbes (7/9/98)

¹¹⁹ Quoted in The New York Times (24/6/99)

¹²⁰ Investor Fact Sheet, 1999

international cities (making a total of 21).¹²¹

The company also anticipated a Point of Presence (POP) in a further 150 U.S. cities upon the completion of its network, through which it would be able to offer long-distance services.¹²²

The 16,000 mile U.S. inter-city network is planned for completion in quarter one, 2001, together with 25 of the 50 local networks. Ring one of the European network should be ready for service in September, 2000. The entire network is expected to be completed within 4-6 years.¹²³

Level 3 is also involved in a number of under-sea cable construction projects, namely:

- a 1.28 terabit transatlantic cable system from Long Island, NY to North Cornwall in the UK due for completion in September, 2000. The project is being designed and developed by Tyco Submarine Systems Ltd.¹²⁴
- an interest in a joint-venture to construct a Japan - U.S Network, due for opening in mid 2000.¹²⁵
- a submarine crossing between the UK and Belgium using Alcatel submarine networks division and a multiple cross-Channel cable agreement with Eurotunnel, the first of which was due for completion in the first quarter of 2000.¹²⁶

The services supported by Level 3's network as of mid-1999 were as follows:

- Private Lines - providing a dedicated connection from one company to another
- Colocation - offering network and support services for "mission critical" equipment
- Internet Access - providing high capacity connections for ISPs and corporate users
- IP CrossRoads - allowing content providers and access providers to reduce their network costs
- Dark Fibre - allowing customers the spare capacity to upgrade their path within the network
- Managed Modem - enabling corporate customers and ISPs to access a fully managed POP service¹²⁷

In January 2000 the company announced a plan to construct a high speed, undersea

¹²¹ Ibid

¹²² Dowjones.com (26/7/99)

¹²³ Level 3 FAQ, 1999

¹²⁴ The New York Times (24/4/99)

¹²⁵ Level 3 FAQ, 1999

¹²⁶ Dowjones.com (26/7/99)

¹²⁷ Ibid

cable between Hong Kong and Japan, representing the first part of Level 3's Asian network.¹²⁸

5/Company Information

Financial Data

Table 2 shows the increase in Level 3's revenues from 1994-1999. The picture is blurred somewhat by the contributions of the coal operations. These are stripped out in Table 3 which shows the steady increase in revenues from the communication side of the business. In Table 4 it can be seen that the company made a loss for the first time in 1999 as the cost of its network construction outweighed the revenue contributions from its various activities. For the 1999 financial year the bulk of its communication revenues came from the US, with Europe accounting for only \$14 million (up from \$1 million the previous year).¹²⁹

1994	537
1995	580
1996	652
1997	332
1998	392
1999	515
Source: Annual Reports 1998-1999	

	1999	1998	1997
(\$ million)			
Communications and Information Services	289	144	95
Coal Mining	207	228	222
Other	19	20	15
TOTAL	515	392	332
Source: Annual Reports 1998-1999			

¹²⁸ 1999 Annual Report

¹²⁹ 1999 Annual Report

Table 4 - Net Earnings (\$millions)	
(figures in brackets represent a loss)	
1994	110
1995	244
1996	221
1997	248
1998	804
1999	(487)
Source: Annual Reports 1998-1999	

Employees

Level 3's 1998 Annual Report recorded 2,100 employees at year end compared with 1,000 at the beginning of the year.¹³⁰ Reporting its results for the second quarter of 1999 the company indicated that it had 3,200 employees by July 1999.¹³¹

As of December 31, 1999, Level 3 had 3,175 employees in the communications portion of its business and PKSIS had approximately 681 employees, for a total of 3,856 employees.¹³²

6/Addressable Market

Market Size

Breaking up the telecoms market into component parts can be awkward, a fact shown by the different accounts of market size which are apparent in the literature. This inconsistency becomes particularly apparent when projections are made for the size of individual market segments into the future. A more rough and ready approach was adopted by the FT which calculated that the global market for all telecom activities was worth a figure getting on for \$1,000 billion.¹³³ A figure of this magnitude adds credence to the view expressed by the Business Communications Review which suggested that, "Next-Generation Telcos are pursuing a potentially huge market".¹³⁴

¹³⁰ 1998 Annual Report, p2

¹³¹ Level 3 news release (22/7/99)

¹³² SEC Form 10k, 1999

¹³³ FT (9/10/98)

¹³⁴ Business Communications Review (April, 1999)

The U.S Market: Voice

One market size which seems to be widely agreed upon is that for the local services market in the U.S.. Communications of the ACM valued this market at \$100 billion.¹³⁵ The FT also uses this figure.¹³⁶

The long distance voice market in the U.S. is estimated by The FT at \$80 billion.¹³⁷ According to America's Network the figure is around \$87 billion, although it argued that the new generation of companies were aiming to turn it into one of \$40 billion by slashing prices.¹³⁸ The FT concurred with these sentiments, stating that "lean companies...promise to push prices ever lower".¹³⁹

The FT calculated that around 90 percent of revenues came from voice traffic, even though it accounted for only 50 percent of traffic volume. It went on to state that it was this over-priced voice segment which was the "plum" that Level 3 has set its sights on.¹⁴⁰

The U.S Market: Data

Once we turn to the markets for data the rapidity of change within the sector makes for some divergent figures. Research from Forrester puts the global value of Internet-related services as a whole at \$327 billion by 2002. The Yankee Group suggests that in the US customers will spend \$56 billion on Internet access over the next five years.¹⁴¹

The bandwidth market in the US has been estimated at \$50 billion by 2001.¹⁴² The data communications component of the US telecommunications industry has been put at around \$25 billion annually.¹⁴³ The market for IP telephony was put at \$30 million in 1998. By 2004 it is expected to increase to \$2 billion.¹⁴⁴ Estimates from Clarent Corporation indicate that IP telephony will account for 44 percent of all calls globally by 2005. Estimates from Forrester Research indicate that the Web-based applications outsourcing market in the US could be worth \$21 billion by 2001.¹⁴⁵

¹³⁵ Communications of the ACM (July 1999)

¹³⁶ FT (6/2/99)

¹³⁷ Ibid

¹³⁸ America's Network (1/6/98)

¹³⁹ FT (6/2/99)

¹⁴⁰ FT (30/9/98)

¹⁴¹ FT (10/6/98)

¹⁴² Forbes (9/2/98)

¹⁴³ The McKinsey Quarterly (Spring, 1999)

¹⁴⁴ FT (6/5/98)

¹⁴⁵ Information Week (21/12/98)

Outside the U.S.

Credit Suisse First Boston suggested that the European telecoms market was growing at around 11 percent a year (comprising of volume growth of 17 to 18 percent and price deflation of 6 to 7 percent). It calculated that the market would grow from \$194 billion in 1999 to \$413 billion by 2005.¹⁴⁶ Virtually all of this growth was projected to come from data and mobile traffic with voice traffic growing just enough to offset predicted price declines. The carrier segment of the European market is put at around \$30 billion.¹⁴⁷

According to Bear, Stearns and Co, the European market for voice, data and Internet services is worth more than \$175 billion a year.¹⁴⁸ As the number of European connecting to the Internet increases this figure will grow substantially. Dataquest estimate that the number of European PCs going on line will rise from 13 million at the start of 1997 to 69 million by the end of 2002.¹⁴⁹

Commerzbank has estimated that the telecoms sector in Europe is growing at eight percent a year. It predicts that the value of the top 6 territories: the UK, Germany, France, Italy, Spain and the Netherlands will grow from \$129 billion in 1997 to \$246 billion in 2005. Much of this growth will come from mobile services (from 19 percent in 1997 to 34 percent in 2005) and from the Internet.¹⁵⁰

The European data market was expected to be worth \$55 billion by the year 2000.¹⁵¹ The international telecoms market for multi-national companies looking for “one-stop-shopping” facilities is estimated at \$40 billion with the potential to grow by a factor of five over the next decade.¹⁵² Level 3 put the value of the market for corporate private-line services at \$23 billion in 1998 and \$42 billion by 2001.¹⁵³ The global market for Web-hosting has been estimated at up to \$20 billion by 2003.¹⁵⁴

Target Market

In a press interview Crowe commented on the overall communications market, stating that;

“It is a huge market: our goal...is not to get 2-4 percent of the traditional vertically integrated telephony market, but rather a very large percentage of a narrower set of services”¹⁵⁵

¹⁴⁶ Credit Suisse First Boston, Viatel Research Note (21/9/99)

¹⁴⁷ GTS Annual Report, 1998

¹⁴⁸ dowjones.com (13/5/99)

¹⁴⁹ Ibid

¹⁵⁰ FT (18/3/99)

¹⁵¹ FT (27/3/98)

¹⁵² The Economist (1/8/98), FT (28/7/98)

¹⁵³ Annual Report 1998, p14

¹⁵⁴ FT (17/3/2000)

¹⁵⁵ Global Telecoms Business (April 1999)

In the company's corporate literature it makes clear that the "set of services" it has in mind are those relating to the business market. This was commented upon by Forbes which stated that, "For now at least, Level 3 is interested only in business customers voracious for data".¹⁵⁶

Returning to the company's own comments, it has stated plainly that, "Level 3's targeted customer base is the business sector".¹⁵⁷ As part of the same information sheet the company goes on to describe how its sales force is focused upon two distinct customer groups within this sector:

1/ large and medium business which require capacity levels of T1 (1.54 Mega bits per second) or higher. In the U.S. context this translates approximately to Fortune 1000 companies. This market is served by its "field" sales group.

2/ the re-seller market, including ISPs and other telecom companies who purchase Level 3's capacity on a wholesale basis. The company's "industry" sales group is responsible for this market component.

Until now Level 3 has shown no desire to follow companies such as Qwest and Global Crossing in remodelling itself as a total telecom service provider. Nor has it attempted to purchase a local operator with a large customer-base as an "anchor tenant" for its network (see Strategy section for Crowe's views on such a policy).

Level 3's stake in RCN Corp, which is building local connections to residential customers, does, however, show that it has some ambitions in this market. With the current regulatory framework, though, the company faces severe restrictions to the services it can offer (the Baby Bells continue to have an effective local monopoly). As such, Crowe is unlikely to stake too much of his company's immediate future on wresting customers away from the Baby Bells. This point was made by Forbes which in explaining that he could not afford to wait around for a slacker regulatory environment, concluded that, "He's in a hurry and can't sit around waiting for regulators to force open the consumer market".¹⁵⁸

7/Stock-Market

Fund Raising

Under its current business plan, Level 3 has estimated that it will require \$8 - \$10 billion to construct its international network to the point where it will begin to generate free cash flow.¹⁵⁹ With sums such as this involved, Barron's described Level

¹⁵⁶ Forbes (7/9/98)

¹⁵⁷ Level 3: FAQ's, p4, Investor Pack, 1999

¹⁵⁸ Forbes (7/9/98)

¹⁵⁹ Annual Report (1998) p8

3 as "...something of a financial high-wire act".¹⁶⁰ So far, however, it has kept it balance.

In explaining its funding philosophy, Level 3 has stated that it plans "...to use equity for the "up-front" capital expenditure and debt for "success-based" capital expenditures.¹⁶¹ In explaining these terms, it defines "up-front" expenditure as spending upon those parts of the network which need to be in place prior to opening it commercially (e.g. conduit, fibre, business support systems etc.). Such pre-emptive spending is inherently risky and lends itself to equity financing. "Success-based" expenditure, on the other hand, are those network components which can be added subsequent to customer acquisition (e.g. electronics, modems etc.). This type of expenditure is accompanied by revenue; as such it involves less risk and is more appropriate for debt financing.

In June 1998 Level 3 attempted to raise \$1.5 billion in junk bonds on Wall Street. The market was so enthusiastic that the company managed to raise \$2 billion.¹⁶²

Level 3 issued a further 25 million shares in early 1999 which were to be used to finance phase three of the network taking it into Europe and Asia. This \$1.35 billion secondary offering was the biggest ever follow-on issue for a NASDAQ traded company.¹⁶³

In its 1998 Annual Report it indicated that \$6 billion had been raised and that it was prefunded for three of the five stages of its network construction programme.¹⁶⁴ Commenting upon the company's bond issue and equity offering Barron's described them as "wildly successful".¹⁶⁵

In September 1999 Level 3 announced it was raising another \$2.1 billion through a \$1.38 billion loan and the issue of \$750 million in convertible subordinated notes.¹⁶⁶

In early 2000 Level 3 announced a series of securities offerings valued at a total of \$1.9 billion. It also announced its intention of issuing a further 15 million shares of common stock.¹⁶⁷ As of the end of September 2000 the company had long term debts totalling \$7.14 billion.¹⁶⁸

Share Performance

On April 1st 1998 Level 3's stock started trading on NASDAQ following the

¹⁶⁰ Barron's (14/6/99)

¹⁶¹ Level 3: FAQ's, p5, Investor Pack, 1999

¹⁶² Forbes (7/9/98)

¹⁶³ Investment Dealers' Digest (8/3/99)

¹⁶⁴ 1998 Annual Report, p8

¹⁶⁵ Barron's (14/6/99)

¹⁶⁶ Bloomberg (7/9/99)

¹⁶⁷ 1999 Annual Report

¹⁶⁸ SEC 10Q Document, 2/11/2000

completion of the separation of the company from Peter Kiewit Sons'. Prior to that it had traded as a class D stock (under the symbol KIWT) on the OTC bulletin board. Prior to Level 3's NASDAQ listing shares in the company were hard to come by. Peter Kiewit Sons' stock is privately held by employees only. Kiewit Diversified was also held mainly by employees (past and present) although shares could be sold publicly.¹⁶⁹ On July 20, 1998, Level 3 announced a one for one stock split. The company became a component of the Nasdaq - 100 index on August 27, 1998.¹⁷⁰

After its separation from Peter Kiewit Sons Level 3's share price was fairly subdued throughout the remainder of 1998, trading mainly in the \$30 - \$40 price range (split adjusted).¹⁷¹ At the beginning of 1999, however, it "caught fire", helped by Wall Street's big technology rebound and the growing enthusiasm for the company's Internet-based business plan.¹⁷²

It reached a high of around \$90 in April/May 1999 but suffered in the weeks following an announcement by Crowe that he was selling part of his stake (see below). Having fallen to around \$50 in August the price recovered and stood at around \$80 by the end of 1999.¹⁷³ At the beginning of 2000 the stock shot up to around \$125. Thereafter, however, it fell back significantly as the whole sector fell out of favour with investors. By November 2000 it stood at just over \$40, given the company a market capitalisation of approximately \$14.6 billion.¹⁷⁴ Despite the recent falls the Level 3 share price has still appreciated by almost 290 percent over the last three years.¹⁷⁵

In attempting to explain the strong stock market performance of telecom companies such as Level 3 in the first half of 1999 the FT offered the following comments:

“The stock market has already decided that these newcomers - along with the fast-growing wireless industry - will win a big slice of the communications pie, according them valuations more familiar in the realms of the technology industry than the utility-style telecommunications world”¹⁷⁶

Towards the end of 1999 Multex.com reported that the consensus broker estimate for the company was a “Buy/Hold”.¹⁷⁷ Within its peer group of 8 other “mid-sized regional telecom providers”, however, Level 3 was bottom equal in terms of the strength of broker recommendations. This indicated that for many analysts Level 3's inherent stock value was already reflected in its price.

The shares faced a particular challenge in May 1999 when Crowe indicated that he

¹⁶⁹ USA Today (1/4/98)

¹⁷⁰ Level 3 web site - historic milestones

¹⁷¹ Bloomberg.com (6/11/2000)

¹⁷² Barron's (14/6/99)

¹⁷³ Bloomberg.com (6/11/2000)

¹⁷⁴ Ibid

¹⁷⁵ Ibid

¹⁷⁶ FT (26/4/99)

¹⁷⁷ Multex.com (7/9/99)

was about to off-load part of his stake. In his “Letter to stockholders” he wrote that, “I suppose it is unusual for a CEO to disclose in advance that he intends to sell stock of the company which employs him”.¹⁷⁸ The FT reported Crowe’s letter as an “unusual move” and reported that the amount involved was \$80 million (or around 1 million shares) of his \$900 million stake. Crowe was quoted by the FT as saying that, “I think I owe it to my family to take this step”. The FT’s response was to suggest that, “Perhaps other shareholders should also think of their families and scale back their Level Three holdings accordingly”.¹⁷⁹

The evidence from the aftermath of Crowe’s announcement would indicate that perhaps a number of shareholder followed the FT’s advice. In the first 18 trading days after his letter the stock dropped by 17.6 percent (with Nasdaq as a whole down by only 3.6 percent for the period). Fortune asked the question: “Did a ‘Crowe Effect’ Bring Down Level 3?”¹⁸⁰

Upon selling his shares Crowe stressed the sale was not related to “negative circumstances”.¹⁸¹ As just shown, however, this did not stop the news having negative consequences. Defending his actions Crowe claimed that the sale was in no way inspired by a lack of faith in the company, rather it was an attempt, having just turned 50, “to make sure I had my financial affairs in order”.¹⁸² Prior to this episode, suggested Fortune, “...it seemed that Crowe could do no wrong in investor’s eyes. The sliding stock price could shake their faith.”¹⁸³

The sliding share price is also likely to have caused serious concern throughout the company. Most of the former MFS executives who Crowe recruited for Level 3 are on modest salaries, bolstered by substantial stock options (the financial independence of most of the individuals involved made such a package feasible). The exercise price of these quarterly rewards is indexed to the S&P 500 which the company must out-perform for the options to be activated. This system, suggested Barron's, "may be the most share-holder friendly in corporate America."¹⁸⁴

This aspect of the company was noted by Fortune which, in an article entitled “Raising the Bar”, drew attention to the attempts by CEOs such as Crowe to make stock option plans more demanding.¹⁸⁵ The philosophy also filters down into the company’s rank and file who have had their earnings linked to the stock price. As Level 3’s Annual Report put it, “We are building a new kind of company, one in which every employee is an owner.”¹⁸⁶

An indication of how the company’s Out perform Stock Option programme (OSO)

¹⁷⁸ Dowjones.com (17/5/99)

¹⁷⁹ FT (31/5/99)

¹⁸⁰ Fortune (5/7/99)

¹⁸¹ Dowjones.com (17/5/99)

¹⁸² Quoted in Fortune (5/7/99)

¹⁸³ Fortune (5/7/99)

¹⁸⁴ Barron's (14/6/99)

¹⁸⁵ Fortune (8/6/98)

¹⁸⁶ Annual Report (1998), p5

was working was given with the results for the second quarter of 1999. Here the company made allowance for \$29 million for stock based compensation during the quarter - indicating that the share price outperformed the Standard and Poor 500 Index. Commenting upon the scheme, Level 3 stated that:

“This program directly aligns management’s and stockholders’ interests by basing stock option value on the company’s ability to outperform the market in general”.¹⁸⁷

With the company’s stock price currently only a fraction of its recent highs, however, there are likely to be some employees who are beginning to question the benefits of this particular remuneration policy.

8/Strategy

A New Economic Model

Distinguishing Level 3 from many of its new generation counterparts is the fact that it arrived on the scene with a definite strategy already formulated. What is more, it has stuck to it. This strategy, in turn, has been underpinned by a belief that a new economic model is emerging within the telecommunications industry. This new economic dimension has been recognised by the FT which claimed that:

”...a new technological era is arriving with great speed, with potentially far-reaching effects for the economics of the industry.”¹⁸⁸

It later seemed to acknowledge the place of Level 3 at the heart of this development, suggesting that, “Level 3 may be the first of the new operators fully to leverage the economics of the new telecoms”.¹⁸⁹ That this is exactly what Level 3 had in mind was revealed by Crowe’s comments that:

"We think that technological change is in the process of blowing the industry apart and that we can be the dominant, low-cost player in the business of transporting data"¹⁹⁰

As Crowe’s and the FT’s comments would imply it is technological change which has caused the shift in the basic economics of the industry. An indication of the change in question was given in the title of the article “Why Circuit Switching is doomed” published by the Business Communications Review in September 1997 (just as Level 3 was coming into existence). In this article it was stated that:

“The question of how and when the Internet will take over the telephone network is an issue open to debate, but no one can deny that packet switching

¹⁸⁷ News Release (22/7/99)

¹⁸⁸ FT (30/9/98)

¹⁸⁹ FT (18/3/99)

¹⁹⁰ Quoted in Barron's (14/6/99)

has a much steeper performance/cost curve than circuit switching. This steep rate of improvement is significant in terms of 'bits per dollar', and it guarantees the triumph of packet switching"

The message here was that packet switching was cheap and was going to get cheaper - something which Crowe had already figured out for himself. It is this issue of price which lies at the heart of Level 3's strategy. As the company itself put it:

"Level 3's entire business plan is built around the premise that as the unit cost, the cost to move a bit a mile a second, continues to decline, the demand for bandwidth will continue to rise at an equal or greater pace" ¹⁹¹

Implicit in this approach is the assumption that demand within the industry is elastic. J.P. Morgan Securities seemed to accept this premise, arguing that:

"Level 3's state-of-the-art network will be enabling technology that will help unleash incredible demand growth and devour any excess capacity"¹⁹²

To support the claim that a new economic model is emerging, reference has frequently been made to "Moore's Law" (the observation made by Intel's former Chairman, Gordon Moore, that semiconductor performance roughly doubled every 18 months). Applied to telecoms this has been interpreted as meaning that prices can be expected to drop by half at least as frequently, leading to an exponential growth in performance efficiency and ultimately in demand. As Crowe has explained:

"It's a fundamental change, like Moore's Law and what happened when the computer industry shifted from the mainframe to the personal computer as chips got more powerful and the cost of computing declined" ¹⁹³

Put simply, "Crowe is betting on Moore's Law...".¹⁹⁴ In justifying this bet Crowe has often talked of "silicon economics" - the key component of which being the belief that communications usage is highly elastic. For each 1 percent decrease in price, it is claimed, demand goes up by 2.5 percent to 3 percent. By harnessing emerging technology in the future, Crowe has claimed that Level 3 will be able to drop their prices by 50 percent or so a year.¹⁹⁵ This emphasis upon price was at the forefront of the company's first attempts to win customers, with Crowe predicting that he could undercut AT&T and local phone companies by 15 to 20 percent in delivering local and long distance service to office buildings.¹⁹⁶ In another interview Crowe has also posited that "cross elasticity" is at work, explaining that:

"Bandwidth is what economists would call cross elastic with all kinds of things, meaning that as the price drops relative to other services, a demand to

¹⁹¹ Level 3: FAQ's, p1, Investor Pack, 1999

¹⁹² Quoted in Barron's (14/6/99)

¹⁹³ Quoted in Wall Street Journal (20/1/98)

¹⁹⁴ Forbes (7/9/98)

¹⁹⁵ Barron's (14/6/99)

¹⁹⁶ Forbes (7/9/98)

move other modes of information over the communications network is created”¹⁹⁷

To summarise: so long as Level 3 can keep cutting its costs then it is in a position to reap the rewards offered by this price elasticity inherent in “silicon economics”. This explains the comments of Level 3’s COO and vice-president, Kevin O’Hara who stated that:

“Our goal is to cannibalize ourselves on a fairly regular basis so we can drive prices down year after year, not incrementally, 5 or 10 percent, but on virtuous cycles where you can push cost down 30 percent or better”¹⁹⁸

For Level 3 the answer is in the price. In the words of Crowe:

“I think I can drop prices faster than anyone else can keep up with and have margins that are sustainable...If you get a six-or nine-month technical advantage over your competition, you can have a long, long, long life”¹⁹⁹

Level 3’s primary concern with price is reflected in its desire to keep down overheads. Crowe has indicated that Level 3 does not intend to employ an army of salesmen. Rather it will distribute its message mainly through third parties, just as the new arrivals took on IBM in the early 1980’s. It will leave it to others (such as the 6,200 ISPs already in existence) to create the new applications and to enter into relationships with the final customer, but will back them up with its superior bandwidth. As Crowe has put it, “We intend to leverage the power of the web, which is clearly a disrupting force in marketing and sales”.²⁰⁰

Crowe has also indicated that Level 3 would keep down costs by out-sourcing any non-core activity, the most costly being sales and marketing. Quoting Crowe again, “So we are dis-intermediating, component by component, market by market and piece by piece the old distribution channel”.²⁰¹

The most common rebuke of Level 3’s strategy is that they are doomed to lower margins as an increasing glut of capacity results in cut-throat competition for existing and new business. The response of Level 3 to such criticisms of its core philosophy usually involve a reiteration of the new economic model just outlined. As Crowe has put it:

"Did Intel glut the microprocessor market by coming out with generation after generation of more powerful and cheaper microprocessors? Of course not. Demand just took off and sucked up the supply. Moore's Law has come to communications”²⁰²

¹⁹⁷ Quoted in Telecom Business, (January 1999)

¹⁹⁸ Quoted in Ibid

¹⁹⁹ Quoted in The New York Times (11/7/99)

²⁰⁰ Quoted in Global Telecoms Business (April 1999)

²⁰¹ Quoted in Ibid

²⁰² quoted in Barron's (14/6/99)

From this perspective price reductions act to stimulate demand all the more. With each drop in price, Crowe has argued, new applications (such as video on demand) become affordable for the first time.²⁰³ This notion that you can never have “too much capacity” has been given credence by observations such as that from Data Communications that, “Online commerce and global connectivity have made bandwidth today’s hottest - and scarcest - commodity”.²⁰⁴

When his critics start questioning the profit potential that exists with bandwidth at rock-bottom prices, Crowe responds with reference to what he calls the Wrong Unit Syndrome (or WUS). This involves looking at usage by the hour (or day) rather than by the minute - with the rate per new unit looking much more attractive when it comes to margins.²⁰⁵

Many commentators, though, remain unconvinced and believe that Crowe is making a big mistake in staking his company’s future purely to the provision of ever cheaper bandwidth. John W. Sidgmore Vice Chairman of MCI Worldcom (who has worked alongside Crowe) argued that:

“The fact of the matter is that if you just stand back and think about it, Jim is not going to invent any new technology. It’s coming from Lucent or Cisco. And do you think they’re going to give anyone an exclusive? If you wanted to give someone an exclusive, it would be the company that could buy the most product: it would be MCI Worldcom or AT&T”²⁰⁶

The crux of the matter, then, for Level 3 is firstly whether demand behaves as they are predicting. Its strategy hinges upon the basic question posed by the FT which asked:

“Is the US about to experience a glut of capacity on long-distance networks that will send prices plummeting? Or will demand for telecoms services grow exponentially with the availability of new capacity over the next three years...?”²⁰⁷

Secondly, while Level 3 would not deny that prices will plummet, they still have to ensure that they stay ahead of the pack and maintain their own price advantage. In a market which will be entirely commoditised they will have few alternative means of attracting custom.

Network

On January 19, 1998 Level 3 announced plans to build and operate a national IP network offering a wide range of communication services aimed primarily at

²⁰³ Forbes (7/9/98)

²⁰⁴ Data Communications (July 1998)

²⁰⁵ Telecom Business (January, 1999)

²⁰⁶ Quoted in The New York Times (11/7/99)

²⁰⁷ FT (30/6/99)

businesses. This would be the first full local and long distance network based solely on IP technology.²⁰⁸

The company could not, however, afford to concentrate solely upon network construction and while it is involved in its building-phase Level 3 has chosen to lease capacity from other providers. In March 1998 it announced that it had reached an agreement with Frontier Corporation to lease capacity on that company's 8,300 mile network which was still under construction. This gave Level 3 a national leased network over which it could deploy IP technology and connect 15 key cities in the U.S.. This has enabled it to begin building its customer base and to provide services to business customers in several cities from the third quarter of 1998.²⁰⁹ This move allowed Level 3 to start marketing its services straight away, and mitigated the danger that customers would stick with their existing suppliers as these companies began to upgrade their own networks.²¹⁰

IP Telephony

Among the various products which Level 3 intends offering over its network, the most central to its overall strategy is IP telephony. As its Annual Report pointed out, voice calls account for around 90 percent of total revenue in the telecom industry even though they account for only 50 percent of traffic.²¹¹ This discrepancy is attributable to the fact that a voice "bit" of information is approximately 15 times more expensive to transport than a data bit. It is this "revenue gap", as Level 3 has called it, which the company hopes to address through its IP telephony service. As packet switching continues to improve its performance at a far faster rate than circuit switching, this gap will naturally become even more pronounced. The potential for undercutting traditional voice calls based upon circuit switching is, then, clearly immense. This was recognised by Telephony which has argued that that, "The potential profits from IP are too compelling to ignore".²¹²

While IP telephony has been introduced by a number of the new generation telcos, most notably, Qwest, this class of product has frequently been criticised as inferior in its present state. For this reason Level 3 showed itself cautious when committing itself to a full roll-out of its IP telephony offering. After successful tests and demonstrations in the first quarter of 1999, however, the company seemed to be poised for action. Referring to its research and development programme in the 1998 Annual Report, it stated that:

"We are pleased to say there is no longer any question about whether this service works. There is no longer any question about whether it can be implemented"²¹³

²⁰⁸ Level 3 web site - historic milestones

²⁰⁹ Ibid

²¹⁰ Forbes (7/9/98)

²¹¹ Annual Report (1998, p9)

²¹² Telephony (17/8/98)

²¹³ 1998 Annual Report (p9)

The company's "tip-toeing" advance towards IP telephony had led some commentators to become a touch impatient with the company, while others questioned whether the technology was really established enough to under-pin a new era in voice communications (both these issues are dealt with in the "Additional Threats" section).

The IP voice service, under the name (3) Voice, was commercially launched in December 1999. Aware of the technical difficulties associated with the technique Level 3 has stated that, "The Company believes that (3)Voice long distance service is offered at a quality level equal to that of the PSTN".²¹⁴ Key to the implementation of its voice product has been its softswitch technology, both that developed in-house and that provided by Lucent Technology. This has alleviated the need for "double dialling" (involving up to 36 digits) and has facilitated the seamless integration between its IP-based system and the traditional telephone network.

The Computer Connection

Much of Level 3's strategy is founded upon the increasing convergence of computer and telecom technologies. In particular the emergence of the PC as the basic hardware unit has changed the landscape. This idea is inherent in the Business Communications Review's contention that packet switching would be the dominant technology in the future, stating:

"In the long run, if the world keeps buying complex computer end stations, and if they are used for voice traffic, then the circuit-switched world, as we know it today, is doomed. The PC will swallow the telephone, and descendants of today's routers will rule the networks"²¹⁵

The wider implications of the change from circuit switching to packet switching are hinted at by Barron's.²¹⁶ It pointed out that the former was slow (both in terms of delivery speed and technical development), centralised and highly regulated. The latter is "the polar opposite" i.e. fast, decentralised (with individual PC's doing much of the work) and controlled by the market rather than regulators. Hence a new economic model has been created - with Level 3 arguing that it will take a new type of company to fully exploit it.

Naturally, in describing the new economic realities the most apt comparison is with the computer industry, with Level 3 often implying that it is the bandwidth equivalent of Microsoft or Intel. When explaining the capacity of Level 3's backbone to support independent "add-on" applications, for example, the company's Kevin O'Hara compared this with the world of computing with PCs using a common operating system. His notion is that Level 3's architecture provides a new network (i.e. the operating system) upon which other applications can be built. As O'Hara explained it:

²¹⁴ SEC 10k, 1999

²¹⁵ Business Communications Review's (Sept. 1997)

²¹⁶ Barron's (14/6/99)

“Creating a network that allows entrepreneurs to easily enter with their services and applications, without requiring them to spend \$10 million for a circuit switch or a whole set of facilities, is a tremendous opportunity”²¹⁷

Acquisitions

Compared with the other new entrants in the communications industry Level 3 has proved fairly non-acquisitive. This has been seen as consistent with the company’s “pure” bandwidth strategy. In particular the company has avoided following Qwest and Global Crossing up the “value chain” by turning itself into a provider of advanced retail services to consumers. Commenting upon this policy Crowe has commented that:

“History tells us that when you get bigger and bigger and more and more vertically integrated, you break businesses apart. That’s like starting a computer company in 1980 and saying the model is I.B.M.”²¹⁸

In explaining his attitude to acquisitions Crowe has indicated that he follows the model used by Cisco, whereby the company avoids purchasing market share through third party acquisitions. In a fast moving industry, he claims, the integration costs are too high. Rather, Level 3’s strategy has been to look at smaller outfits whose purchase would satisfy targeted technology requirements. In the future, suggests Crowe, “I expect that we will continue to pursue that small targeted approach”.²¹⁹

9/Competitors

Multex.com²²⁰ categorises Level 3 within the “mid-sized regional telecommuhications providers” peer group. Also in this group are the following companies:

Cardio Thoracic Systems Inc.
Commonwealth Telephone Enterprises
e.spire Communications Inc.
GST Communications Inc.
Intermedia Communications Inc.
ITC Deltacom Inc.
Powertel Inc.
Western Wireless Corp.

Such “peer group” comparisons, however, frequently omit conspicuous competitors and so it is on this occasion. In the case of Level 3 an interesting starting point in the search for competition is to start with those companies which Crowe is said to have antagonised (see Origins and Development, above). Qwest, for example, is a clear competitor, not least in the vanguard technology of IP telephony.

²¹⁷ Quoted in Telecom Business (January, 1999)

²¹⁸ Quoted in The New York Times (11/7/99)

²¹⁹ Quoted in Global Telecoms Business (April 1999)

²²⁰ Multex.com (4/9/99)

An editorial in Network World, however, advocated caution here, stating that while Level 3 was often associated in the public's mind with Qwest, the two companies were in fact quite different. While Qwest resembled a "regular telephone company" offering IP and switch-based services, Level 3 had more of a "purist strategy" focused entirely on IP.²²¹ Having taken that on board, though, there is no doubt that there is a great enough overlap between the operations of the two companies for a state of competition to exist. At a wider level the two outfits also compete for the claim to leadership of the progressive part of the industry. This dimension has been hinted at by The New York Times which, following the skirmish between Qwest and Global Crossing for control of Frontier and U.S. West, suggested that Crowe was now: "...perhaps the most prominent executive still carrying the flag for the pure bandwidth strategy...". For him, it suggested, such merger strategies were "...tantamount to heresy."²²²

Another company within the "offended competitor" category is clearly MCI WorldCom. Until the exodus of former MFS executives led by Crowe, this company had been seen as one of the most aggressive and predatory in the industry. By snubbing one of the biggest kids on the block, Level 3 has perhaps ensured itself of some rough treatment at a later date. Commenting upon the subject USA Today stated that, "WorldCom would like nothing better than to bury Level 3 in the market place".²²³

The two companies have already come into conflict over the question of peering arrangements for Internet links - with MCI and WorldCom refusing to accept that Level 3 had met their specified standards. In response, Level 3 has been reported as regarding this as tantamount to monopolistic behaviour - not least since the two companies control the bulk of U.S. Internet traffic.²²⁴ Crowe has, however, poured cold water on the idea that some sort of vendetta lies behind the peering difficulties, stating that:

"I think the issues of peering are business issues, rather than personal issues. I think that as soon as WorldCom think it is a good business idea to peer, they will do that in an instant"²²⁵

In assessing Level 3's competitors in the U.S., mention should also be made of those companies which are in the process of constructing extensive networks across the country. Apart from Qwest this also gives us outfits such as IXC Communications, Broadwing and Williams - all of which are due to complete their networks well ahead of Level 3.²²⁶

In early 2000 a new network competitor emerged in the US in the form of America's Fiber Network (AFN). The new company represented an alliance between three of the

²²¹ Network World (12/7/99)

²²² The New York Times (11/7/99)

²²³ USA Today (1/4/98)

²²⁴ Telephony: abstract (25/5/98)

²²⁵ Quoted in Global Telecoms Business (April 1999)

²²⁶ Wall Street Journal (20/1/98)

US's biggest power companies who intended to combine their networks to offer broadband services to small and medium sized town and cities, many of which have been by-passed by the existing networks. By pooling their existing networks the power companies claimed that they would start with a 7,000 mile network within the US.²²⁷

In September 2000 it was announced that Level 3 would be providing "dark fibre" to France Telecom which was constructing its own US network linking 28 cities in the US and Canada.²²⁸ This was one example of Level 3 cooperating with an expanding operator which could conceivably develop into a direct competitor.

As Level 3 increases its operations in Europe it is also bound to face competition from those companies currently laying cable across the continent: namely GTS, KPNQwest, BT/AT&T, Cable and Wireless, Global Crossing, Global One, MCI WorldCom, Teleglobe and Viatel.²²⁹

More specifically Level 3's strategy of concentrating on key metropolitan networks, places it alongside operators such as Colt. In July 1999 Level 3 announced the completion of its metropolitan network in London (including the financial district) - striking at the heart of Colt's territory. In the FT, Lex pointed out, upon Colt's announcement that it was raising a further (and unexpected) £500 million in early 1999, that the activities of Level 3 et al "...makes life a little more tense for Colt."²³⁰ Commenting upon Level 3's strategy, City analysts have claimed that, "Level 3 should prove a formidable competitor for Colt".²³¹

Another source of competition lies in technically superior companies following in Level 3's footsteps. As Thestreet.com pointed out:

"Technology, which has been changing as fast as signals go down a fiber-optic cable, could shift against Level 3's strategy"²³²

Global Telecoms Business has also warned that:

"Level 3 is also likely to face competition from new entrants leveraging new technological advances. It is perfectly feasible that a Level 3, mark 2 or a 'Level 4', as Crowe calls it, may emerge and seek to usurp Level 3 Communication's position"²³³

When questioned about next level operators Crowe admitted:

"That is our biggest single worry. We don't want you to do an interview with

²²⁷ FT (21/3/2000)

²²⁸ FT (27/9/2000)

²²⁹ FT (30/8/99)

²³⁰ FT (26/2/99)

²³¹ Quoted in FT (18/3/99)

²³² Thestreet.com (14/9/98)

²³³ Global Telecoms Business (April 1999)

a Level 4 in another year or two and have them explain why they have a better network than us”²³⁴

Another source of competition comes from satellite with Teledesic and Motorola's Celestri potentially creating high-bandwidth IP networks using satellites by around 2003.²³⁵

10/Additional Threats

Competitors' Reactions

One of the greatest threats faced by Level 3 is that the incumbent operators whose business it hopes to eat into will do something about it. Forbes acknowledged the reality of this response, arguing that, “Of course AT&T, MCI, WorldCom, the regional Bells and others are not asleep at their switches”.²³⁶

On the one hand, the incumbent's response could be to take Level 3 out of the game by purchasing it. In other words, if Crowe's outfit cannot be beaten it might just be bought. There is no doubt that expectations along these lines are keeping the company's share price fairly buoyant at a time when the sector as a whole has fallen out of favour with investors.

On the other hand, if one of the big companies has the courage to “start again”, scrapping the bulk of their legacy technology, then they could carry much of their customer base with them to newly improved networks. This possibility was recognised by Thestreet.com which argued that:

“Deep-pocketed competitors could enter the market to challenge the company with their own IP networks before Level 3's is up and running”²³⁷

Whether the shareholders of these established companies, accustomed as they are to regular dividends, would tolerate such a capital depleting move is another question.

In any case Level 3 is not intent on a “win or bust” strategy. Here, Forbes repeats Walter Scott's favourite maxim: “Protect the downside, and the upside will take care of itself”.²³⁸ In other words, if Level 3 cannot attract customers away from the incumbents then it will be left with an advanced, but empty network. But that in itself would be a hugely valuable asset to one of the older incumbents faced with the prospect of constructing their own. Recognising that this scenario could form part of the company's destiny, Crowe has stated that, “At worst, we'll become part of someone else's strategy”.²³⁹

²³⁴ Quoted in Global Telecoms Business (April 1999)

²³⁵ USA Today (1/4/98)

²³⁶ Forbes (7/9/98)

²³⁷ Thestreet.com (14/9/98)

²³⁸ Forbes (7/9/98)

²³⁹ quoted in Ibid

Hence Level 3 is assured of a tempting consolation prize even if it fails to reach its ultimate goal of drawing traffic off the existing networks. Forbes itself, put the threats facing the company into perspective, arguing during a discussion of the future shape of the telecommunications industry that, “One way or another, Level 3 is almost guaranteed a nice chunk of that future.”²⁴⁰

One Dimensional Strategy

Commenting upon Level 3’s “purist strategy”, Network World stated that this meant that it had little to offer to compete with the likes of AT&T, MCI WorldCom and Sprint when it came to offering companies unified contracts for all their voice and data services. While Level 3 could respond that it would offer voice as an integral part of its IP package, the publication seemed sceptical, arguing that, “Level 3’s ongoing drumbeat about an imminent, supercheap IP voice service is getting tiresome.”²⁴¹ This takes us on to some of the problems Level 3 has faced in providing such as service.

Technological Problems

As the “purist” company at the vanguard of an IP-based network Level 3 has had no choice but to meet any technical problems head-on (while less “pure” outfits such as Qwest can make do with existing legacy solutions). This constraint has been particularly relevant in the field of IP telephony - an area which has been beset by problems relating to quality and reliability. Stephanie Comfort of Morgan Stanley Dean Witter has expressed concern about such matters, stating that, “The way I describe it is are they on the leading edge or the bleeding edge?”²⁴² A similar picture was drawn by Analysys which claimed that, “Some corporations will be cautious about using bleeding-edge technology. Reliability is important”.²⁴³

At the beginning of 1998 Crowe countered the questions relating to reliability, claiming that “I.P is ready for prime time” (although he admitted that for voice there were still issues to be resolved).²⁴⁴ About 18 months later, however, Barron's was still suggesting that, "These days, sending voice messages over the Internet is a not-yet-ready-for-prime-time service that appeals mainly to geeks".²⁴⁵ In the interim period Paul Gudonis, President of GTE Internetworking, claimed that IP voice was the preserve of “a lot of marketing hype and science projects”.²⁴⁶ Interestingly, this was similar in tone to the comments made by Communications Review back in September 1997 which talked of the “...marketing hype surrounding the emerging Layer 3 or routing switches...”(all the more interesting since it was from such technology that

²⁴⁰ Ibid

²⁴¹ Network World (12/7/99)

²⁴² Quoted in Global Telecoms Business (April 1999)

²⁴³ Quoted in FT (9/6/99)

²⁴⁴ Quoted in The New York Times (21/1/98)

²⁴⁵ Barron's (14/6/99)

²⁴⁶ Quoted in FT (30/9/98)

Level 3 took its name).

Summing up Level 3's experience with its cutting edge technology, it is perhaps a case of the conventional wisdom of "first to market" advantage going slightly astray. As Level 3 races to perfect its IP telephony there is no doubt that the lessons it learns will also be keenly studied by those operators currently waiting in the wings.

Over capacity

As with the other providers of fibre optic networks in the U.S and internationally, Level 3 is vulnerable to any development of over-capacity. Already the influence of the new arrivals has been to slash the cost of national calls within the U.S, with international charges following suit. As early as 1997 the Economist, in a discussion of Qwest, noted that, "Such companies will turn long-distance traffic into a commodity."²⁴⁷ McKinsey made a similar analysis, pointing to increasing commoditisation of the long haul "backbone" routes, with a spot market in this commodity already developing. With such future developments, it suggested, "Digital communications will probably sell on the cheap".²⁴⁸ If too many companies are trading in this same commodity there are bound to be casualties.

Expanding upon the capacity issue, Mark Bruneau, President of the Consultants, Renaissance Worldwide, has suggested that by 2001 the capacity on US telephone networks will be 400 times what it was in 1998. This, he suggests, will lead to a "bandwidth glut", an experience which will also afflict Europe around 2004.²⁴⁹ This potential has also been recognised by Forbes which talks of the present "fiber-building frenzy" and maintains that "if and when a glut arrives, the new comers might slash prices to frightfully low levels."²⁵⁰ With the proliferation of new entrants laying their own network the prospect of over supply has become a reality. This was recognised by the FT which stated that:

"if the growth in data fails to match the growth in capacity, further consolidation will leave a few large groups fighting over distinctly thin pickings"²⁵¹

In early 1999 one of Level 3's main European rivals, GTS, pointed out that it had sunk enough fibre cabling across Europe to carry 20 times the total current traffic across the continent. The FT picked up on the inherent danger within this emphasis upon capacity, pointing out that GTS was only one of a dozen operations constructing state of the art pan-European networks. The consultancy, Analysys, put the number of telecom firms across Europe which intend to create their own facilities at around 140.²⁵² Such a proliferation, suggested the FT, "will see the death or withdrawal of

²⁴⁷ The Economist (13/9/97)

²⁴⁸ The McKinsey Quarterly (Spring, 1999)

²⁴⁹ FT (30/6/99)

²⁵⁰ Forbes (19/4/99)

²⁵¹ FT (9/12/98)

²⁵² FT (17/3/98)

some of the weaker operators, particularly among the later entrants".²⁵³ In September 2000 this prediction proved correct with UK-based Iaxis going into receivership with debts of \$200 million.²⁵⁴ The company was widely seen as the first victim of the capacity glut in bandwidth and the resultant fall in prices.

As indicated earlier, Crowe tends to respond to the argument that a glut of broadband is approaching by claiming that falling prices will lead to new uses for the spare capacity. The head of the business strategy group at Renaissance, Bob House, seemed to be heading in this direction himself when he stated that:

“These operators have got to find ways of absorbing this excess capacity. It is already beginning with the development of application hosting on the web”.

Crowe’s response would probably be, “yes, and it won’t end there”.

Another argument used by Level 3 is that many commentators confuse the existence of fibre with the potential supply of bandwidth. Its stance is that much of the fibre will never be used since it is dated and economically non-viable. Advanced companies such as Level 3, however, will be able to leverage their efficient networks and attract customers by offering the lowest prices. This was the position taken by Gail Smith, the European President of Level 3 who, in a letter to the FT, pointed out that the “bandwidth glut” hypotheses was well off the mark. She took the opportunity to quote Robert Metcalfe, founder of 3Com who stated that:

“Saying there is a glut of bandwidth because there is a lot of fibre is like saying there is a glut of microprocessors because there is a lot of sand”²⁵⁵

In Smith’s opinion there would, “certainly be casualties as the market for bandwidth develops in Europe and around the globe”.²⁵⁶ According to her assessment, however, Level 3’s price advantage would ensure that it would not be such a casualty.

Technological Change

Related to the problem of over capacity is the speed of technological change within the telecoms industry. As Level 3 acknowledged as part of its 1999 SEC 10k submission:

“The communications and information services industry is subject to rapid and significant changes in technology”

Until now new wave companies such as Level 3 have used the technological advances of the past few years to undercut the incumbent carriers burdened as they are with antiquated networks. As time passes, however, innovators such as Level 3 might see

²⁵³ FT (18/3/99)

²⁵⁴ FT (10/9/2000)

²⁵⁵ Quoted in FT (27/9/2000)

²⁵⁶ Quoted in Ibid

themselves being overtaken by technical advances (e.g. by satellite-based systems). This danger has been recognised by the FT which in a discussion of COLT indicated that:

"what is becoming rapidly apparent... is that even sophisticated new operators are being caught out by the speed of technological progress"²⁵⁷

Slow Liberalisation and Powerful Incumbents

As a new operator in a newly deregulated US and European market Level 3 is vulnerable to both national regulators who are dragging their feet and incumbents who are surreptitiously engaging in rear guard defensive action. Rival company Viatel has acknowledged this danger in the European arena, indicating that while EU members have been obliged to enact legislation to open up their telecommunications markets, certain obstacles remain. In relation to the removal of national restrictive practises, for example, it has stated that, "in certain cases this has been done on an inconsistent, and sometimes unclear basis".²⁵⁸ The incumbents, of course, are only too quick to shelter their businesses behind any barriers which remain. As Michael Mahoney, CEO of Viatel has put it:

"Liberalization and deregulation do not necessarily mean that the incumbents are going to throw the door open to new entrant carriers"²⁵⁹

This tendency has also been commented upon by Price Waterhouse Coopers who stated that:

"...a shrewd telco will use what remaining degree of regulatory freedoms it still possesses to buy time while it sets about reshaping itself"²⁶⁰

So it is no surprise when Lehman Brothers remind us that:

"International Long Distance (ILD) operators continually complain about PTT's intentionally delaying the provisioning of interconnect capacity as it is one of the last remaining mitigants to open competition"²⁶¹

This tendency has been recognised by O'Hara at Level 3 who has stated that, "the incumbents first step is always to refuse to connect".²⁶² Level 3's difficulties in reaching peering agreements with MCI WorldCom, as mentioned earlier, demonstrates that even among fellow new entrants few favours will be accorded to the most recent arrivals.

²⁵⁷ FT (18/3/99)

²⁵⁸ Viatel SEC 10k Report, 1998, p35

²⁵⁹ Quoted in Global Telecoms Business (Feb/Mar 1999)

²⁶⁰ Quoted in Global Telecom Business (October 1999)

²⁶¹ Lehman Brothers, European High Yield Research (27/9/99), p14

²⁶² quoted in Forbes (7/9/98)

In the UK it was reported in September 2000 that both Global Crossing and MCI WorldCom had abandoned their plans to offer high-speed Internet access in homes and offices throughout the country. The decision was put down to frustration at the “unbundling” process in the UK, with BT showing itself to be skilful in restricting access to its local exchanges. On this occasion OFTEL was widely criticised by alternative operators for not exerting enough pressure on the British incumbent.²⁶³ This experience would seem to vindicate the Economist’s observation that even when pressured by regulators to open up their markets the incumbent “will use every trick in the book to make life miserable for its rival”.²⁶⁴

Regulatory Considerations

The FCC has, for some time, been considering the anomaly whereby network access fees are not levied against companies providing telephony over the Internet. If they fill this loop-hole then naturally some of the price differential will disappear. As part of the debate the Clinton Administration has come out against such charges. With a new Government a change might be more likely.²⁶⁵

Level 3 also faced regulatory uncertainty through its purchase of XCOM which made 87 percent of its revenue through a reciprocal compensation agreement with Bell Atlantic.²⁶⁶ The FCC was also looking into the future working of such agreements, with Level 3 recognising that, “An unfavourable resolution of this matter may have a material adverse effect to the company”.²⁶⁷

Accountancy Matters

Another source of uncertainty for companies such as Level 3 is the accountancy treatment of capacity sales through IRU ownership agreements. In 1999 the Federal Accounting Standards Board (FASB) was looking at the possibility of ruling that revenues from such agreements should be spread over its 20 year life span rather than treated as a one off payment (known as FASB66). This would naturally lead to a reduction in reported current year capacity sales and might lead to a negative market reaction. The actual cash flow of the company would not, however, be affected. The first company to comply with the alternative interpretation was Williams which subsequently issued an earnings warning on 2/9/99.²⁶⁸ In the case of Global Crossing it announced slower revenue growth in early 2000 due to the new accountancy treatment of deferred revenues. While the company emphasised that the change was purely technical it still suffered an 8.6 percent fall in share price immediately after the announcement.²⁶⁹

²⁶³ FT (21/9/2000)

²⁶⁴ The Economist (13/9/97)

²⁶⁵ The New York Times (13/4/98)

²⁶⁶ Annual Report, 1998, p39

²⁶⁷ Ibid

²⁶⁸ Lehman Brothers, op cit

²⁶⁹ FT (19/2/2000)

Changing Mood on Wall Street

As with the bulk of the telecommunications sector Level 3 has experienced a significant fall in its market value in the course of 2000. This has reduced its fund raising options and made it a much more affordable takeover target. Commenting upon this theme even before the major sell off of 2000, the FT stated that, “some of the new wonder-stocks of the telecommunications industry may not carry as much weight as their champions had hoped”.²⁷⁰ Whatever the company’s attitude to the question of a capacity glut there is no doubt that many investors have taken fright at the prospect of over-supply within the broadband market. In the case of Level 3 the prominence of Crowe within the company (and among its shareholders) represents an additional risk. Should he decide to sell more of his shareholding then the effects could be even more serious, given the existing market jitters, then when he first sold part of his stock in mid-1999.

Repetitive Statements

In rolling out its network the company has at times sounded a touch disingenuous when committing itself to its new locality. The two announcements below, for example, suggest something of a “fill in the blanks” approach by those further down the management scale. This seems out of place for an innovative company which claims to “treasure its customers”.²⁷¹

Level 3’s commitment to the Cincinnati business community is more than our investment in advanced infrastructure, new jobs and contributions to the city’s tax base. We are dedicated to becoming a strong corporate citizen, working hard to earn the trust of our customers in the Cincinnati metropolitan area by providing high quality, reliable and cost effective telecommunications services”. John Verduzco, Level 3 Cincinnati Sales Director.²⁷²

Level 3’s commitment to the Northern New Jersey business community is more than our investment in advanced infrastructure, new jobs and contributions to the state’s tax base. We are dedicated to becoming a strong corporate citizen, working hard to earn the trust of our customers in the Northern New Jersey area by providing high quality, reliable and cost effective telecommunications services”. Kevin Happ, Level 3 Northern New Jersey Sales Director.²⁷³

²⁷⁰ FT (15/6/99)

²⁷¹ Annual Report, 1998, p11

²⁷² Dowjones.com (19/7/99)

²⁷³ Dowjones.com (26/7/99)