



**The Company**

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## Executive Summary

*"The telco world is about to change beyond all recognition" – David Cleevly, Analysys*

3G is a radio communications technology that creates a data pipeline providing fast mobile access to internet-based services. Previously, internet access has been restricted to plain text content until the ascent of 2.5G which is still slow by 3G standards. With 3G, wireless video streaming is no longer a dream.

3 (Hutchison 3G) is the first company to sell 3G services globally, across 9 different countries. The company is headquartered in the United Kingdom with over 2,000 employees. 3 provides consumers with new means wireless of communications, creating personalised and interactive media experiences. Having won 3G licenses in Australia, Austria, Denmark, Hong Kong, Israel, Ireland, Italy, Sweden and the UK. The company strives to become the market leader in the 3G mobile telecommunications industry

3 targets the youth segment of technology-savvy professionals and mobile workers. M-commerce and banking services have also attracted interest from middle aged businesspeople. 3's current services include video calling, internet access to download entertainment and read emails, online gambling e.g. horse racing in Hong Kong and GPS localised content e.g. locating restaurants and other facilities near the user.

3 has pursued a global standardised approach setting up identical communications and brand imaging across its operating regions. In doing so, it has maintained consistency for its globe-trotting target segment and increased the market's awareness of the brand. 3's distribution network relies on specialty retail outlets, open in central locations in major cities. 3 runs localised versions of its websites[ [www.three.com](http://www.three.com)] which provide tariff information, service outlines as well as online shopping.

3's advantage today stands as no competitors exist to fight over market share. However, Orange Europe has announced that in the 3<sup>rd</sup> quarter of 2004, they will be rolling out 3G services in Europe in direct competition against 3's European operations, namely in the UK. 3 must leverage its experience in the 3G market to maintain people's interest in its brand. Doing this will help establish 3 in the evoked set of people when more choices of 3G operators appear. In addition, 3 must correct their service's temporal technical glitches to ameliorate negative attitudes towards them. These include insufficient network coverage, inconvenient handsets and faulty 3G application software.

## Company Background

Hutchison Whampoa Limited (HWL), a leading global company has operations in 39 countries generating annual revenues of HK\$145,609 million (US\$18,668 million). It has a diverse array of operations ranging from prominent retailers to the most technologically-advanced telecommunications operators. Hutchison has businesses in five core fields - ports and related services, telecommunications, property and hotels, retail and manufacturing, and energy and infrastructure. In the telecommunications industry, Hutchison created a milestone in its history when it sold its Orange PCS network in Europe to Mannesmann AG (now owned by Vodafone) in 1999 for a record profit of US\$14.6 billion. However, this is only part of its achievements since its establishment 18 years ago. It has also competed successfully to become one of the market leaders in the mobile phone industry in Hong Kong (with a subscriber base of about 1.8 million, representing the largest share of the local mobile market) and 16 other countries, offering a range of services from mobile phone systems, fixed-line services, Internet services, fibre optic broadband networks to radio broadcasting.

With a general understanding of the parent company, we shall now focus on '3' (Hutchison 3G), the Group's global brand that holds and markets the 3G licenses in many parts of the world. 3 is the first company to introduce third-generation (3G) mobile phones and networks across the world. It provides consumers with new wireless means of communication, to create a personalized and interactive media experience allowing for Internet access and video clips on their handsets. 3 is headquartered in the United Kingdom and has over 2,000 employees in the country excluding its global sales staff. As the company strives to become the market leader in 3G mobile telecommunications industry, it has won 3G licenses in 10 markets Australia, Austria, Denmark, Hong Kong, Ireland, Israel, Italy, Norway, Sweden and the UK. However, campaigns under the brand "3", have only been carried out in Australia, Austria, Denmark, Hong Kong, Italy, Sweden and the UK. Through creation of alliances with partners, it has successfully managed its brand under 3G Holdings on a global scale.

### **What is 3G?**

3G is a radio communications technology that creates a data pipeline providing fast mobile access to internet-based services. Some types of services include video calls, downloadable entertainment, online news, stock analyses, sport video clips, multimedia messaging and global positioning system (GPS) applications. New services never seen before.

### **Target Market**

Companies looking to succeed with 3G services should target their applications at the youth and 20 - 35 age bracket, according to the latest research, which also found that mobile users are most interested in using a 3G handset to access their email. Taylor Nelson Sofres, a market research firm, conducted the research in Western Europe, Eastern Europe and the US. In all three territories it found that interest in 3G was greatest in the under-25 age range. In the US, 45% of existing mobile phone or Internet users aged 24 or younger expressed "high interest" in 3G, compared to 37% in Western Europe and 30% in Eastern Europe. Older people showed less excitement about high-speed mobile phones. Only 10% of over-50s

surveyed in America and 9% in Western Europe, showed high interest in 3G - although in Eastern Europe this figure was somewhat higher, at 24%.

Overall, it was found that only a small proportion of those interviewed were excited about 3G. In the US, 25% of people expressed high interest in 3G, compared to 26% in Eastern Europe and 22% in Western Europe. People who said they were interested in high-speed mobile Internet were then asked which services they thought would be most important to them. Email with attachments was the most popular 3G application, followed by map and direction services and news updates.

The core target market for 3G services are teenagers, young adults, and family adults, all of whom currently have mobile phones for personal use.<sup>1</sup> Initially, it will be the generation X (25-34) who are the early adopters. This group was also the first to adopt PDAs. The reason for this is because such products and services would be, in most cases, out of generation Y's (16-24) budget, and of little interest to the older demographic groups, who are more likely to be "laggards", or late mass market adopters.<sup>2</sup>

M-commerce and banking services have also attracted interest. However, not many people said they would be interested in interactive games, which has often been seen as a key revenue generator for mobile operators in the future, and even fewer said they would be interested in playing games for money. These findings conclude that 3 must find a way of providing the right mix of products to succeed in what is likely to be a segmented market. To maximize the impact of 3G, 3 must rigorously follow a market focused, consumer-centric approach.

## Analysis on the Competition

With its name, 3 communicates its commitment to 3G, the new generation of mobile phone technology. The brand itself is the culmination of this new technology and 3, being a pioneer in 3G services has a unique position in the business. There is no competitor with the same aggressive strategy and links to the underlying technology which bears substantial risks and opportunities.

NTT DoCoMo, a Japanese mobile-services provider established 3G services in October 2001, 2 years earlier than 3. Its extremely successful I-Mode strategy which focuses on 2-2.5G services has propagated to its new FOMA 3G service in Japan. This fact makes it a true threat to 3's global operations. Furthermore, NTT DoCoMo plans to unveil GSM-compatible 3G phones later this year (2004). However, its plans to expand globally (starting in Europe) have been hampered by cultural differences and resistance from governments who wish to protect their own country's telecommunication networks. Seeing that its marketing campaigns were unlikely to work in Europe, in June 2003, it signed an agreement with 3 to cooperate on the development and promotion of third-generation services, based on W-CDMA technology.<sup>3</sup>

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<sup>1</sup> [http://www.cambridge3g.com/pooled/articles/BF\\_NEWSART/view.asp?Q=BF\\_NEWSART\\_17737](http://www.cambridge3g.com/pooled/articles/BF_NEWSART/view.asp?Q=BF_NEWSART_17737)

<sup>2</sup> Steve Flaherty, 3G Consultant | <http://www.keitaiculture.com>

<sup>3</sup> NTT DoCoMo Site | [http://www.nttdocomo.com/presscenter/pressreleases/press/pressrelease.html?param\[no\]=253](http://www.nttdocomo.com/presscenter/pressreleases/press/pressrelease.html?param[no]=253)

Aside from NTT DoCoMo, many existing 2G mobile phone network operators have acquired 3G licenses and are therefore able to provide the same services to their customers in the future. 3G technology can only be deployed in densely populated urban areas, due to technological and financial constraints (a typical 3G base station costs upwards of US\$45,000 – covering the actual physical product. Full installation costs can reach US\$250,000).<sup>4</sup> Given the expenses of setting up network coverage from scratch, 3 is dependent on existing 2G coverage in rural areas in order to attract customers. To achieve this, 3 has to enter into strategic alliances with competitors who can provide the 2G network to 3's customers. For example, in Hong Kong (Orange), a 2G operator owned by Hutchison supports 3 with its network and 2G services. Having said that, however, if 3 has to rely on rented 2G capacity from another firm, the costs for can become quite substantial.

In order to be the first to the markets, 3 paid about US\$1 billion to NEC to develop 3G handsets exclusive for 3. Despite these efforts, there were substantial delays in the delivery of the handsets and the limited range and technical problems of 3G-ready mobile phones remains one of 3's weaknesses. Additionally, in many countries, more than four 3G licenses have been granted – it is a number which cannot be supported by even the largest market, analysts from Ericsson, the network supplier, warned. It is to be expected that a shakeout will have to take place which cannot be blamed on the underlying technology.<sup>5</sup> Even if many licenses have been granted, most of the companies that acquired a license are still concerned with the build up of the 3G network and have not yet started to promote their service. 3 has been the fastest to publicly promote its 3G services and therefore can leverage its first mover advantage. Many of the early adopters are attracted by the new technological opportunities that were first offered by 3.

Vodafone, Orange (a Hutchison Company) and 3 operates in many different countries which allows them to use profits from profitable markets to cover higher costs, mainly 3G license fees, in other markets. It is especially difficult to distribute costs for this new technology as the license fees and the network construction demand enormous investments in every market. Due to the slower-than-expected sales, it will take more than 6 years before 3G will be a profitable business. With its financially strong parent company: Hutchison Whampoa Limited, 3 is in a good position to wait for the take-off – a better position than some of its competitors.

### ***Other Threats to 3***

A key barrier to 3's success is the possibility that users will decide to get wireless services from other types of technology.

#### **2.5G**

Companies and standards organizations have developed so-called 2.5G systems as upgrades to existing 2G technologies. Numerous wireless service providers including Vodafone, Orange and T-Mobile as well as the USA's largest GSM operator, Cingular offer 2.5G services across the world.

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<sup>4</sup> PA Consulting Group, 2000

<sup>5</sup> PMN Newsletter | <http://www.pmn.co.uk/20020910ericsson.shtml>

2.5G, like 3G is always-on, provides simultaneous voice and data, and is faster than today's circuit-switched data connections. Service providers can implement 2.5G much less expensively than 3G because the former uses existing 2G spectra and does not require a new network infrastructure although some system upgrades are necessary. Some providers see 2.5G as an adequate alternative that may let them skip 3G altogether.<sup>6</sup>

One problem is that 2.5G technologies were not designed to optimally handle voice and data communications simultaneously and can also experience latency problems.

That problem gives 3 much room to manoeuvre because the quality of video available on 3G channels will be of better quality and voice and data transmissions can be done simultaneously. 3 may choose to leverage these advantages when moving into an area where operators are using 2.5G.

### **Wireless LANs**

These include technologies-such as HiperLAN (high-performance radio LAN) and Wi-Fi. Though not designed to compete against 3G, some industry observers say that many potential 3G users who have access to WLANs may prefer to get their wireless services via the latter. Also, many WLANs are already deployed and thus are one step ahead, for example, in the USA. Users have become accustomed to WLAN services and do not wish to switch to other network services.

More importantly, WLANs offer the possibility of connecting to a corporate network – an important consideration for enticing business users to 3. Today, WLANs are currently private networks, but they can potentially evolve into substitute LAN access points – increasing the threat against 3. For example, in the San Francisco Bay Area, individuals with WLANs are establishing access points that nearby residents and businesses can use to tie into their networks.

WLAN's principal advantage over 3G is its low cost requirement. However, WLAN technology in its current form is not suited for wide-area coverage and is better suited for indoor, rather than outdoor, environments.

In addition, WLANs use an unlicensed spectrum. If the networks become a substitute for 3G technology, it could lead to signal interference in the very limited bandwidth spectrum. Currently, 3 may promote mobility-oriented applications, such as programs that locate the nearest restaurants (which *cannot* be implemented with WLANs, rather than just wireless versions of desktop software that *can* be implemented with WLANs).

## **Marketing Mix**

### ***Products and Services***

Currently, there is a selection of 4 different 3G mobile phones available for sale and are only provided by 2 companies: NEC and Motorola. As can be seen from the following, these 4 mobile phones are relatively bulkier than typical 2G mobile phones.

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<sup>6</sup> IEEE Computer Society | <http://www.computer.org/computer/homepage/0102/tn/3.htm>

NEC c616



NEC c313



Motorola A925



Motorola 835



Table 1 | 3G-Ready Handsets

Each of the above mobile phone sets support a wide variety of services ranging from video calls to M-commerce.

## What services does 3 provide?

### Person to Person Video Calls

People can use 3G devices to make a video call to their family and friends, and they can see each other no matter which part of the world they are in.

### Entertainment

3 provides anytime, anywhere access to video clips of news and sporting events. The handset could be personalized to alert them of when their favourite sports team scores, where a singer is performing and it could even tell them where to find the best shopping or restaurants, based on where they are at the time of calling.

### News and Information

News, entertainment and a wealth of information are instantly available at the touch of a button.

### Business

3G mobile linkups can help individuals in their business since they can hold video conferences with clients, send pictures of products, documents or other data, and be able to receive instant feedback without a face-to-face meeting. A kitchen helper can thus relay an image of tuna in a wholesale market to the sushi chef for instant advice on whether to buy. In time-critical situations, such as medical emergencies, the use of 3G technology to send the photograph of the injured to hospital, GPS applications to analyze the shortest route to the hospital and 3G access to information on the casualty's blood type and allergy history can increase the medical team's effectiveness.

### Global Positioning Systems

3 provides navigation assistance, instant access to street maps, traffic reports and weather information for its customers. The information is location-sensitive and will be related to the user's calling position. Additional services include the display of nearby restaurants (with telephone numbers) and caller tracking systems.

## **M-commerce**

With the use of 3G “electronic wallets”, customers are able to conduct secure financial transactions anytime, anywhere.

## **Price**

3G-ready phones currently offered by 3 range from HK\$498 to HK\$4580.<sup>7</sup> The prices are similar to the normal 2G phones in the market (even cheaper if trade-in options are used). The current phones are offered in collaboration with NEC and Motorola.

As for the network tariffs, there are a number of different packages. The cheapest being a monthly charge of HK\$123, which includes 550 voice minutes, 100 video minutes, as well as text and media content messaging. Comparing this with the basic charge offered by Orange, 3 stands about 50% more expensive; though not a high difference in dollar terms, but a significant difference in percentage. This makes most potential subscribers of 3 think twice before making the change, and rethink the whole need for the product. In addition, many potential consumers are just waiting until the service is offered by other network service providers, such as Orange, so that 3 would have to reduce prices for competitive reasons.

On the other hand, the most expensive package costs HK\$533/month, and includes 4500 voice minutes, 500 video minutes, text and multimedia content messaging, and wireless data sending. Although much more expensive than the basic packages, this would be a very good offer for heavy users of the service. All packages include free value-added services, such as call waiting, voicemail, etc.<sup>8</sup> So again, tariff prices are again not substantially more expensive compared to other mobile network service providers. Also note that the prices all end with a ‘3’. That keeps the brand hooked in customers’ minds.

## **Promotion and Marketing**

### **Marketing**

The main means of advertising 3 uses are television commercials and billboards. The television commercials convey a sense of excitement, and future technology. They also demonstrate the capability of the phones, usually by linking it to family members being able to see each other while in different places. For example, one of the television commercials broadcast in HK shows a father stuck in a traffic jam, and he calls his son and has a video conversation with him. Another commercial, broadcast in Australia, shows an old lady answering an international call from her family, who are in another country, and she’s so surprised when they pop-up on the screen, that she falls over in her chair.

As for billboards, they usually show the 3 logo with either a picture of a happy child, or a tagline, with a white background. For example, their famous tagline, “The difference is 3” is commonly seen. The idea is to have a sense of consistency in all the countries of operation so wherever you go, it’s the same ‘3’. In addition, other smaller means are used. In Hong Kong for example, ‘3’ logos can be found on taxis around the HKSAR, as well as a lighting display of the 3 logo on the Cheong Kong Holdings building.

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<sup>7</sup> <http://www.three.com.hk/website/template?pageid=35100&lang=eng>

<sup>8</sup> <http://www.three.com.hk/website/template?pageid=35200&lang=eng>

## Promotions

3 frequently offers new promotions on products and services. Currently being offered are trade-ins for a normal 2G phone, in exchange for a 3G phone.<sup>9</sup> Also offered are special tariffs on new models,<sup>10</sup> and monthly live television charges for your phone.<sup>11</sup>

## Place and Distribution

The company operates in a number of countries; Australia, Austria, Denmark, Hong Kong, Ireland, Israel, Italy, and Sweden. Apart from Israel, all of the mentioned markets have a relatively stable and developed economy. The markets are not very big, as they are being used as test markets for the new service.

3's distribution network mainly relies on specialty retail outlets, open in key locations in major cities in the mentioned countries. Online shopping is another means of distribution offered by 3 on their website, [www.three.com](http://www.three.com).

## Challenges and Limitations

3 is a young company and still faces a lot of challenges. Although it is true that watching our chat partner with a video mobile phone is very attractive, most people are unwilling to adapt this new service because they do not want to pay more for something nice-to-be-had. Indeed, the tariff plans remain high with a minimum of \$123 per month. Moreover, even if they want to try, they do not yet find the necessity to have a technology like that in a mobile phone. It provides more services than they need and those extras are not really needed for everyday life.

3 has to give people more reasons to switch brands. Live video streaming might sound like a good idea but it is not enough to get them to sign on the dotted line. This is the challenge and despite extensive advertising campaigns promoting the video capabilities of 3G handsets, consumers remain indifferent.

Packet-based services present new challenges for carriers who are used to billing calls based on time and distance. Now they are faced with the need to measure, track, and bill for information sent as digital packets of data. SMS costs work out to a quarter or a third of per-minute talk-time costs. But the amount of data sent in an SMS is a small fraction of that needed for a minute-long call. From a billing perspective, transferring digitally five characters of text is more costly than transferring 5 minutes of speech.

Last but not least, the size of the handsets available today are still much too large for the average consumer. The size of mobile phones has undergone an evolution of reduction since its birth in the 1970s. People are generally unwilling to use a bulky handset that lacks aesthetic sophistication. It will take time for the technology to mature before smaller, higher battery-performance handsets can reach consumers to ameliorate the current design and battery limitations of 3G handsets.

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<sup>9</sup> <http://www.three.com.hk/website/template?pageid=38200&lang=eng>

<sup>10</sup> <http://www.three.com.hk/website/template?pageid=38600&lang=eng>

<sup>11</sup> <http://www.three.com.hk/website/template?pageid=38500&lang=eng>

## Recommendations

### *Industry-level*

As the industry level, wireless manufactures, carriers, portals, and service providers will need to address critical issues including frequency spectrums, technical standards, interoperability and infrastructure costs to reach an unbiased assessment of how these elements relate to and impact one another and subsequently, create a common platform for advanced mobile multimedia. The network should be open, because that is the best way to create and encourage the growth of the services that will give the system its value.

In particular, handset manufacturers have to improve the design and performance of 3G handsets. Subscribers have complained of bulky handsets coupled with inadequate battery life being relatively more expensive. Furthermore, customers are still dependent on manufacturers to deliver handsets on time, and a shortage of handsets will discourage new, potential subscribers. One way to do this is to combine Personal Digital Assistants and 3G technology. PDAs need a large screen and so justify their bulkiness. Coupled with 3G internet access, it becomes an even more powerful tool that can be used for web browsing and is a convenient office tool for online virtual project meetings.

### *Company-level*

3 should look into areas where significant cost reductions can be achieved so that these cost savings could be passed on to customers through lower tariff plans. With low pricing, demand could be boosted by consumers currently deliberating whether to make the switch. Such growth has been historically exhibited in a similar manner by the exponential escalation of the number of web users. Videoconferencing though attractive as a feature, still cannot be done in an appealing environment for consumers who use their mobile phones wither while walking or driving. However, this feature could be marketed to the corporate market. The advantages for companies to use 3G video capabilities creatively in the business environment can be promoted. 3G can add the extra personal warmth to a business relationship, replace the cumbersome videoconference setup for one that is simple and fast to implement at last minute notice. 3G's GPS capabilities enables tracking services that may attract corporate interest. As 3's sales continue to rise, the experience pricing effect will become significant and tariffs should also be lowered appropriately to encourage the take-up rate for this new product. After 3G has become mainstream, 3 can increase prices again for a reasonable rate of return whilst keeping future competitors' prices and consumer demand in mind.

More attractive content and services should be offered. 3 could selectively work with service providers to provide a rich variety of services. Competition amongst service providers would lead to fresh new websites being created all the time, instant access to information, entertainment, plus extremely convenient mobile transactions – exciting subscribers as well as potential customers. In addition, all content should be continually updated, kept as comprehensive as possible, and designed for maximum clarity and attractiveness. Since subscribers judge the value of mobile Internet services on the basis of the quality of useful content, the provision of up-to-date content is crucial for attracting more customers.

Marketers used various slick advertising images of videophones and high-speed internet access to market 3's services. These images seek to communicate the benefits of 3G over 2G to potential consumers. However, what was communicated was in contrast to some customers' experiences since 3G services offered around the globe are marred by technical difficulties, particularly in network quality. This includes network-access difficulties, high drop call rates, poor hand-off between 2G and 3G environment, slow speed, poor customer service and other issues surrounding handsets and content. Given thus, user expectations should be closely monitored as when users are not given a realistic view of the current quality, they will become more disappointed at the service when they are faced with problematic situations. This may subsequently affect service subscriptions by these and also by other individuals who have heard about the poor quality and are discouraged to even give it a try.

Currently, as a 'premium' store, the situation is analogous to opening a Giordano Ladies store before opening Giordano. People would be hard put to visit a Giordano Ladies without first hearing about the quality and fashion sense in Giordano. 3 could work together with Orange HK, the mobile phone subsidiary under its parent, Hutchison Whampoa, to be deployed as a critical complement to the 2G network, and not as a replacement nor as a standalone premium service platform. That way, 3 can get access to the user base of Orange and also convert users of 2G services into 3G users more easily.

Users do not see any relevance whether the technology is 3G or not, they just care about the quality of service. This means that the advertising of the technology will not succeed if the changes it can make to one's lifestyle is not promoted. The fact that the voice quality over a 3G line is better and that one's life can be made much more convenient when one can check emails on the mobile phone can be used as promotion ideas.

3 should pursue a policy of standards in open technology exchange and joint large system tests, sharing its own R&D centre with leading research organizations, mobile communications operators, and equipment manufacturers from around the world. This collaboration would allow operators to more easily develop products for mobile multimedia services worldwide. Operators could be given information on the unified communications platform. This would ensure that wireless technologies, content quality, and the user experience evolves at the same optimal pace. Ultimately, this synchronization will align the interests of partners and shareholders with that of the end-users.

## **The Future is Three**

### ***Usage Growth***

3's current price-cut strategy has seen an increase in the number of customers purchasing 3G services. This increase will propagate a word-of-mouth promotion of the company and the new services. Furthermore, the rollout of 3's services coincided with worldwide economic decline. As the economy improves for the second and third quarters of 2004, people will be more willing to spend money on new gadgets and new technology – demand will increase. Aside from individual consumers, one of the most promising growth areas is business and institutional demand. Since the economic recovery in late 2003, businesses worldwide have

begun to increase technology spending – forecasts predict 2% growth in technology spending since 5% declines in 2002 and 2003. Employees who spend some of their working at home. Accountants that carry out audits at client premises. On-site maintenance engineers who need access to detailed instruction manuals, mobile emergency services who need a video link with a hospital or doctor for specialised advice. These are a few situations where 3 can play a valuable role.

## ***Company Developments***

Currently, the problems surrounding the implementation of 3G include:

- Poor network coverage
- Short handset battery life
- Limited-appeal service provision.

Although 3 has continues to upgrade the network in the wake of complaints and service drops, there remain, pockets of zero-coverage in rural areas and certain indoor, enclosed environments. Network developments have been slow because of the expenses involved - a typical 3G base station costs upwards of US\$45,000 and that only covers the actual physical product. Full installation costs can reach US\$250,000. Given time, however, the costs will be reduced<sup>12</sup> but this still does not put 3G services in the same category as alternative technologies such as WI-FI and other 'low-band' systems which cost less than US\$200 per year.

The 3G-ready handsets will also need improvement. New advancements in network connectivity, battery optimisation and LCD technology will provide a plethora of solutions to the basic problems faced by 3G handsets today. Such research can be seen as top priority in the R&D laboratories of Motorola<sup>13</sup>, Ericsson<sup>14</sup> and Nokia<sup>15</sup>.

When the temporary, technological glitches are fixed, 3 needs to promote the critical service it can provide: always-on internet access. With an expanding user base, there will be more and more suggestions for 3G applications and we see a snowball effect coming in the new future. 3G today remains a word for the tech-savvy and unless a company, in this case 3, can promote ways in which it can change one's way of life, it will remain out of reach from the majority of users.

## ***Competition Prognosis***

Sunday Communications expects to launch 3G services across Europe in the fourth quarter of 2004 or early 2005. Handsets and consultation services will be provided by Nokia and Nortel, world leaders in telecommunications and networking technology respectively.<sup>16</sup> This is bad news for 3 as it means that the company will need to speed up its market penetration in Europe to get the much needed pioneer advantages. Orange has a large 2G subscriber base in

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<sup>12</sup> PA Consulting Group, 2000 | see appendix section for chart

<sup>13</sup> Motorola R&D Labs | <http://www.motorola.com/content/0,3306,277,00.html>

<sup>14</sup> Ericsson Research Website |

[http://www.ericsson.com/products/main/WCDMA\\_offering\\_hpaai.shtml?SelectedStructureNodeId=10B84DAB-4611-11D6-BBFF-00034742058E](http://www.ericsson.com/products/main/WCDMA_offering_hpaai.shtml?SelectedStructureNodeId=10B84DAB-4611-11D6-BBFF-00034742058E)

<sup>15</sup> Nokia Research | <http://www.nokia.com/nokia/0,8764,5118,00.html>

<sup>16</sup> The 3G Newsroom | [http://www.3gnewsroom.com/3g\\_news/may\\_03/news\\_3417.shtml](http://www.3gnewsroom.com/3g_news/may_03/news_3417.shtml)  
3G UK | <http://www.3g.co.uk/PR/Feb2004/6646.htm>

Europe with over 12 million customers in the UK and it will be easier for it to push new 3G services to existing subscribers compared to the efforts 3 needs to muscle – pushing a new technology to new consumers. 3, however, has the first mover advantage and if it acts quickly to leverage this, it can ride the incoming storm posed by Orange. 3 also has the market knowledge that it has gathered worldwide. People today think that 3 is the forerunner in the 3G business and will have it in their evoked set when there is a choice of service providers later.

## ***Global Market Expansion***

From the appendix section on 3's current global operations, one can see that the markets 3 has invested in are small ones with only the UK being relatively larger. This is because of 3's sprinkler strategy: to expand to many small 'test' markets to undergo marketing experiments and receive user feedback before moving on to larger markets such as France, Germany, the USA and China.

China has a mobile phone subscriber base of over 267 million and is by far, the fastest growing mobile service market in the world having risen 30% in 2003. It is extremely significant for 3's future growth. Before 3 enters, however, it needs to be cautious of the trade barriers that exist, namely that China's mobile market is controlled by a state duopoly consisting of China Mobile and China Unicom, furthermore, the government is still deciding on a standard for 3G services. Once the standards are set, 3 quickly needs to form an alliance with one of the state companies to offer 3G services with market experience behind to help in the planning and execution of the sales strategy. Speed is of the essence because Orange in Europe and Vodafone are planning to open 3G services soon and China is clearly a fat target so to speak. It will not be surprising if the China telecom firms decide to implement their own 3G network given the country's historic disinterest to allow foreign firms to control communications. However, its ascent into the WTO and recent open policy may lead to a brighter future for 3 in China.

The USA is also a potential market having already 172 million mobile phone subscribers. Most of the subscribers are below 30 marking out the potential segment that 3 currently targets.<sup>17</sup> 3G standards, however, remain disparate across states. One way 3 can enter is by strategic partnerships with large operators such as GSM and Virgin Mobile USA (catering for the youth market). These partnerships would give 3 the strength it needs to unify North America's 3G platforms. 3's Network coverage and subscriber base will also benefit from the partnership. With no network and no recognised brand in the US, we advise against entering the country as a new product. If 3 enters as a new product, it will have difficulty competing with likely resistance from operator giants such as Verizon Wireless and Cingular with foreign 3G competitors such as Orange and Vodafone expected to join the fray.

## ***Beyond 3G, Future Technology Developments***

The move to 4G is complicated by attempts to standardise on a single 3G protocol. Without a single standard on which to build, designers face daunting uncertainty. As 3's success percolates to infrastructure levels, however, we predict that the standards will gradually settle. Table 2 compares some of the key parameters of 3G and 4G (4G does not as of yet have any solid specifications so the parameters rely on general proposals).

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<sup>17</sup> North America Regional Mobile Statistics | <http://www.cellular.co.za/stats/stats-americas.htm>

### Key Parameters of 3G and 4G Systems

	3G	4G
<b>Frequency band</b>	1.8 - 2.5 GHz	2 - 8 GHz
<b>Bandwidth</b>	5 - 20 MHz	5 - 20 MHz
<b>Data rate</b>	Up to 2 Mbps (384 kbps deployed)	Up to 20 Mbps
<b>Access</b>	W-CDMA	MC-CDMA or OFDM (TDMA)
<b>Switching</b>	Circuit/packet	Packet
<b>Mobile top speeds</b>	200 km/h	200 km/h

Table 2 | Key Parameters of 3G and 4G Systems

### Reasons to go 4G

4G is noticeably similar to 3G – also supporting interactive multimedia services including teleconferencing, wireless Internet, etc. Its wider bandwidths and higher bit rates will increase the speed of internet access and data transfer, leading to more subscriber enjoyment. The heightened security capabilities of the forecasted technology will enable more secure online transactions and will see an increase in M-Commerce activity which in turn increases the value of commissions that 3 can skim off such transactions. We contend that 4G will compliment 3G very much like 2.5G compliments 2G today – as a useful upgrade being relatively cheap to implement.

### Final Remark

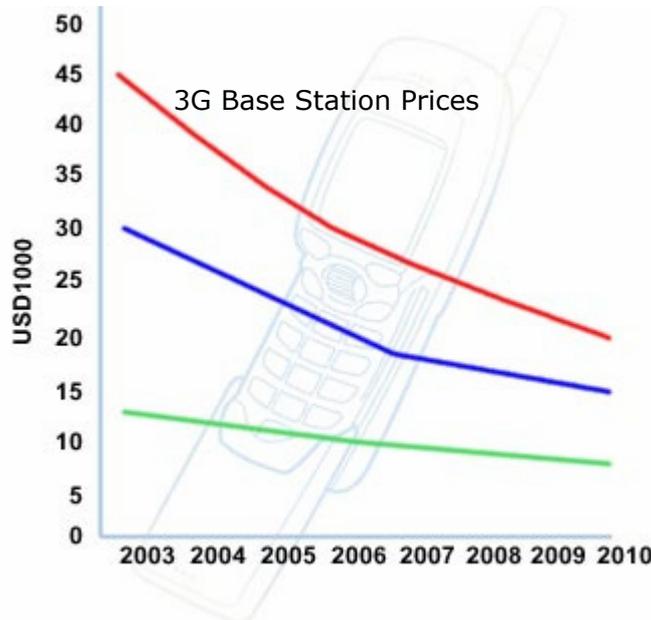
Mobile subscriptions to 3G services are predicted to reach critical mass by 2006, according to worldwide forecast by Analysys and 3G LAB, the Cambridge (UK)-based Open Source software provider for the mobile Internet. By 2006, Analysys forecasts that 3G will account for 480 million subscribers; 2.5G subscribers will number 480 million; 2G will have just 380million subscribers. By 2010, 3G subscribers worldwide will number 1.04 billion, with the most optimistic projection putting the subscription level at 1.34 billion, compared to the most pessimistic case of 744 million. By 2007, the overall worldwide growth in mobile subscriptions will be confined to 3G technology. Only Africa, Continental Asia and Latin America will see continued growth around 2.5G technology

*“Soon, everyone will take the ability to go online anywhere, anytime for granted just as we do for telephones, television and desktop computers. The future, ladies and gentlemen, is Three”*

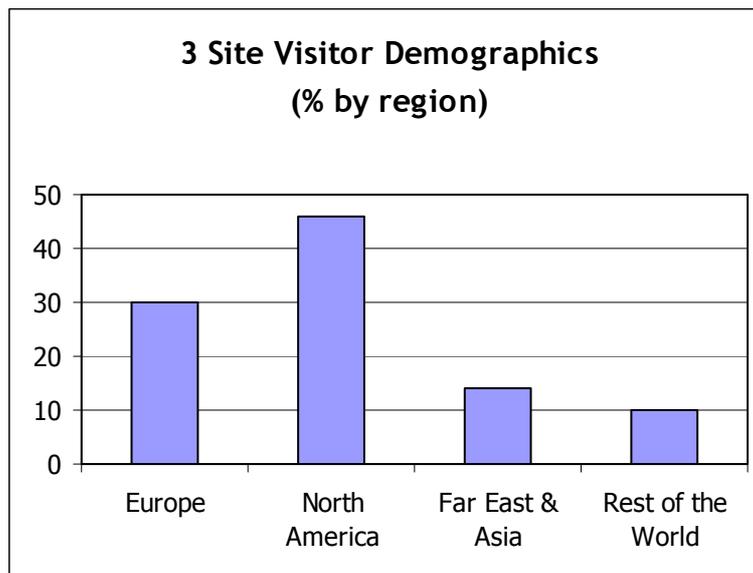
– The Team

## Appendix

### 3G Base Station Costs



### 3 Site Visitor Demographics ( % by Region )



### 3 Global Operations

#### Hutchison 3G UK

In May 2000, Hutchison won the 3G license in UK and in that corresponding year, NTT DoCoMo and KPN Mobile acquired a 20% and a 15% participation in Hutchison 3G UK through an investment of over HK\$24bn. In March 2003, 3 UK officially launched its 3G services.

### **Hutchison 3G Italy S.P.A**

It is now the first Multimedia Mobile Operator in the Italian market. Hutchison Whampoa is the majority shareholder with 88.2% ownership and through joint ventures with Italian players in telecommunications, Internet and new media, publishing and banking, including S. Paolo Imi, CIR, HDP, BMI, Gemina and Tiscali, together they have successfully won the license and launched the service in November 2000 March 2003 respectively.

### **Hutchison 3G Austria GmbH**

This is a wholly owned subsidiary of Hutchison. In November 2000, they won the 3G license in Austria and in May 2003, they opened 3stores in Austria.

### **Hutchison 3G Access AB**

In Denmark and Sweden, 3 is owned by Hutchison Whampoa (60%) and Investor AB (40%), who both have solid networks and together they are totally devoted to the next generation of mobile communication.

In December 2000, they won the 3G license in Sweden and in May 2003, they rolled out the first 3G mobile video communication services. As for Denmark, in October 2001, they won 3G licenses launched its video communication services 2 years later with the following distribution of mobile phones.

### **Hutchison 3G Australia**

In March 2001, awarded 3G license in Australia and in May, Hutchison Telecoms Australia formed a strategic alliance with Telecom Corporation of New Zealand Limited to operate 3G business in Australia under Hutchison 3G Australia. In March 2003, 3 was officially launched, the first of its kind. The service later extended to Brisbane, Adelaide, Gold Coast and Perth in July 2003.

### **Hutchison 3G Hong Kong**

In October 2001, won 3G licenses in Hong Kong and a year later NEC became the strategic partner in Hutchison Telephone and Hutchison 3G Hong Kong. After a series of promotional campaigns, January 27th marked the beginning of 3 service and was the first in the world to deliver NEC c616 video mobile phones.

### **Hutchison 3G Ireland**

This is a wholly owned subsidiary Hutchison Whampoa and in June 2002, won licenses for Republic of Ireland and in October 2003, they launched the 3G network which offered key corporate partners access to its service in Dublin.