INTRODUCTION

Mobile communications continue to exhibit strong growth with 1.3bn mobile users by the end of 2003. World mobile penetration increases rapidly, according to estimates. Sales of mobile handsets in emerging markets continue to grow. At the same time, the replacement market increases rapidly in established markets. In the handset market, new manufacturers enter the core group of suppliers, and a great many new manufacturers enter the global handset market. What we see is the emergence of one of the largest and most important, global production and distribution systems.

However, the rapid growth of this new important industry imposes a number of important, difficult, and different challenges for the firms involved. Firms established in the handset market system need to develop and adapt their production and distribution systems to the rapid globalization of the market for handsets. New entrants face the challenge of finding ways to establish positions in the global, and in the regional and local parts of distribution systems. Concurrently, the handset manufacturers are challenged by other actors aiming for stronger or more stable positions in the distribution systems; operators, distributors, retailers, and customers.

Design, model development, production, and branding issues have a major role in this general dynamic situation. Furthermore, the general interest among investors, media and the public and customers are still often directed towards these issues and factors. The interest and focus in this papers is directed towards the effects of the pressures for change on the gap between the production and the consumption side of the market system, i.e on the global distribution system for mobile handsets. One argument forwarded here is that effective and efficient positioning in global distribution systems will be an increasingly important competitive factor in the global, mobile handset market.
The paper draws attention to the driving forces behind the increasing importance of distribution issues, and to some of the strategic challenges facing the world’s handset manufacturers and other firms with positions in the global distribution network for mobile handsets.

**AIM AND RESEARCH QUESTIONS**

This paper aims to discuss a set of distribution challenges meeting suppliers of handsets, operators, and other channel actors in the global mobile telephony industry. More specifically, the paper sets out to discuss the following issues:

1) What are the underlying changes and drivers leading to an increased focus on distribution issues in the global market for mobile handsets?
2) What are the distribution challenges for handset manufacturers as production increasingly is becoming global?
3) What are the distribution challenges when this global distribution has to be connected to regional and local distribution and consumption networks with often very local, specific characteristics?
4) What role do operators play in this globalization of distribution process, and what are the challenges for other actors in the global distribution system?

The study adds a piece to a set of previous studies with a marketing system focus on the mobile telephony industry. In previous studies, focus has been directed towards distribution channel effects of institutional, technological and market changes in the rapidly growing market for mobile telecommunications equipment, including distribution system and service consequences of technological convergence (Andersson & Mölleryd 1998), increased polarization of distributor-customer relations and retailers’ strategies to cope with this (Andersson & Mölleryd, 1999), and market system studies of changes in customers’ buying centers, buying organizations and buying behavior (Andersson & Mölleryd, 2001). The paper also builds on previous studies of the internationalization of distribution (Andersson 2002). This study adopts a global perspective on distribution channel changes in the mobile telephony industry, presenting aggregated empirical data on global distribution.

Next, the paper describes a set of important, contemporary changes in the global mobile handset industry. A set of general, important drivers are identified. Thereafter, some of the general effects on the global distribution system are discussed, followed by a section bringing up some of the strategic distribution challenges for manufacturers, operators and others. A few concluding reflections on distribution issues conclude the paper.

**BACKGROUND: GENERAL CHANGES IN THE GLOBAL HANDSET MARKET**

It can be argued that the handset market is in a dynamic phase of development. Both on the supply side and on the buyer side, various changes are altering the structure of the
global market system for handsets. In light of the many regional and local differences that exist – and in some cases seem to be consolidated - we here describe some of the general structural and technological changes affecting the global market system. Focus is on data describing changes from 2003 and onwards. The listing includes both supply side and buyer side forces of change:

**General rapid growth of new users:**
Mobile communications continue to exhibit strong growth with 1.3bn mobile users by the end of 2003, and set to increase to 2.4bn by 2010. This implies that world mobile penetration will increase from 24 to 34.6 percent according to estimates. Growth is primarily driven by emerging markets, and it is expected that ~60 percent of net adds during 2004 will come from China, India, Indonesia, Mexico, Russia, and Brazil. Consequently, the handset market is prospering with the strong growth of subscribers within the next few years.

**A growing replacement market:**
The growing replacement market is driven by extensive upgrades to color screens and camera handsets, with commercial volumes of 3G around the corner. The general replacement ratio is expected to reach 29 percent in 2004, reaching 30 percent in 2005 (see Figure 1)

*Figure 1. Replacement ratio reaching 29% 2004, increasing to 30% 2005*

In this growth situation, the big suppliers seem to keep a firm grip on the replacement market supplying over 400 million handsets in 2003 (see Figure 2).

**New entrants competing with the Big Six in the handset market:**
Concurrently, new actors aspire to enter the Big Six group. For example, LG Electronics has now entered the core group of global handset suppliers. However, the large number of suppliers outside of this lead group (“Others”) is also growing in importance, primarily driven by strong activity in Asia (see Table 1). The Chinese handset industry is growing rapidly, partly driven by the rapid growth in the home market, and there is an extensive development of the Korean handset industry. The total, global market volumes are growing rapidly and the big handset manufacturers are set to benefit as they have sufficient resources to master the entire production and distribution chain.

*Figure 2. The Big Six with a total market share of 74.1 percent in 2003*

Distribution strategies among “the Big Six” differ. Nokia has developed a country strategy, monitoring and developing a distribution strategy for each country. New distributors are appointed locally, distributors are phased out. The local markets are monitored on price, competition and retail development. In each country, Nokia has a main contact-person with operators, driving the technology implementation and initiating joint marketing activities in each respective country. Nokia is mainly working through independent distribution channels and retailers in each country. An example of a “new entrant” is TCL Mobile Communications Company Limited, one of the leading mobile phone manufacturer in China, who began its international channel expansion by launching its mobile phone series in Hong Kong, marking its first step to the overseas market. Still, the company works with regional distributors, not with national distributors. In all, the company works with 3-4 layers of distributors in their Asian markets. The company also has a limited number of own retail outlets. For the continued international channel expansion, TCL has formed a joint venture with Alcatel for research and development, sales and distribution of handsets and related products and
services. The clear aim is to open for distribution on the international market. Due eg. to the fierce competition in China, TCL is first and foremost expanding in the South Asian market. Liu Fei, vice president of TCL Mobile, also announced that TCL Holdings and U.S. Qualcomm had signed a cooperation agreement to jointly develop CDMA mobile phones: "Our aim is to gradually develop and enhance TCL to become a reputable international brand. The official launch of our mobile phones in Hong Kong represents the first of our initiatives to enter the overseas markets as well as to increase consumers' recognition and support of the TCL brand."

A third example, where one of the Big Six is entering the Asian distribution networks is Siemens, who signed a contract with Ningo Bird in China, in which Bird agrees to sell Siemens handsets in its 30 000 shops in China. Thus, Siemens is able to develop its distribution strategy by increasing its penetration of the market leaving its strong focus on the very large cities, using Bird to reach the second, third and even fourth tier cities in China. At the same time Bird signed a deal in the USA with AT&T Corp. aiming to reach its goal to sell around 2 million phones outside of China in 2004 (in USA and Europe).

Table 1. Handset shipments 2003: The Group Other
Continued regional market variation despite globalization:
Global handset suppliers face regional differences in distribution. Empirical observations regarding distribution of mobile handsets reveal some of these regional differences:

- Asia: Despite the rapid growth of the Asian market, both Chinese and Japanese suppliers primarily sell to domestic operators. For example, Fujitsu sells to NTT DoCoMo, Hitachi sells small volumes to Japanese operators, and Mitsubishi primarily sells on the domestic market.
• USA: In the USA, there is an operator focus with sales over 90% sales to operators, while retail has 5%, and distributors 5% of total sales.

• Europe: In Europe distribution is fragmented, with shipments to operators of around 50%, while retail has 15%, and distributors a share of 35%.

• APAC: APAC is characterized by fragmented distribution. Sales to operators is around 30%, while distributors have more than 60%, and retail has 10%.

In addition to these regional differences, on the local, national level, the suppliers have to handle and monitor major differences in distribution systems between countries. One such difference concerns suppliers’ connections with operators in the local markets.

*Internationalization of handset production and changes in the production value chain:* Important for the distribution of handsets is the localization of production. A growing part of handset production is being localized to Asia. However, production is also becoming increasingly global, with production localized in all four major market regions. There is also variation among the handset manufacturers regarding the localization of production. Changes in the production chain is also related to various supplier changes. Chipset suppliers increasingly go for reference designs to offer complete cellular systems. (see Figure 3) Know-how and technical competence is now widely spread in the mobile industry. In total, theses changes lead to a continuous changes, eg. in the international localization and integration, of the global production networks.

*Internationalization of operators:* Operators’ position in the international arena is also changing, having effects on the global distribution systems for mobile handsets. The growing importance of operator locked handsets, for example, is changing the positions in the distribution chains. Driven by new operator concepts and ambitions to control user experiences, we see the emergence of more operator locked handsets. Competing with around 40 suppliers of handset suppliers worldwide, around 682 operators in the world are fighting for a stronger position in the global distribution systems. Some of these, like Vodafone, continue to grow and to expand their global position in the operators’ market.

Vodafone builds its international distribution on a wide variety of direct and indirect channel arrangements. It builds its direct distribution through e.g. its own sales force and stores, telemarketing centers and the internet. Vodafone also builds a position indirectly through agreements with independent agents such as consumer electronic stores, specialized cellular stores, automobile dealers, department stores, resellers, and other retail stores. Indirect distribution thus include third-party service providers, independent dealers, agencies and arrangements for mass marketing. Supermarket chains and multiple retailers are used to achieve mass distribution of prepaid products.

*Figure 3. The mobile handset production chain*
The increased importance of the Chinese market in global distribution:
In different ways, the growing Chinese market and its distribution systems, including the ways in which the Chinese distribution networks (see figure 4) successively become integrated with distribution networks in other parts of the world, needs to be put forward as an important change force of its own. We have already seen from the examples above how actors in the Big Six group actively attempt to build stronger positions in the Chinese distribution networks. Concurrently, the large Chinese handset manufacturers and operators are in different ways taking measures to expand internationally. Eg. through alliances with American and European firms, Chinese firms are increasingly establishing, despite some apparent difficulties in some cases, positions in channels outside of the Chinese market.

Within the Chinese market system, important changes affect the dynamics of the Chinese distribution channels, for example:
• Amoisonic is primarily targeting the high-end market
• Chinese Electronic Corp works closely with Philips
• Dtang works with CDMA, developing TD-SCDMA
• Eastcom supplies GSM and CDMA phones under own brand, has a JV with Motorola
• Haier is the leading white goods supplier in China, has teamed up with Sendo
• Keijan is a growing player on the Chinese market, collaborates with Samsung
• Konka produces both GSM and CDMA handsets
• Ningbo Bird is a leading supplier on the Chinese market
• Soutec sells GSM and CDMA hands
• TCL leading player on the Chinese market It uses platforms from Ericsson and Motorola
• ZTE manufactures and sells GSM and CDMA handsets, is also a infrastructure provider

Apart from the links between the growing, important Chinese distribution system and distribution in other regions that are created by foreign handset suppliers like Nokia and Siemens and by foreign operators, also a set of Western distributors are becoming active in this process. For example, The distributor Cellstar’s Chinese subsidiary has become one of the leading distributors of handsets in China. Cellstar distributes handsets to approximately 1,600 Cellstar branded retail outlets and 15,000 non-branded retail outlets across China. (The company has around 250 wholesale customers in the Asia-Pacific Region to be compared with approximately 2,400 customers in the North American Region.)

*Figure 4. The growing Chinese distribution system for handsets*

There are also restrictions connected to the Chinese market and distribution system. It is mandatory to have a license to be allowed to sell mobile handset, it took 12 months for SonyEricsson to get their license. The Chinese authorities (MII) has issued around 49 licenses (2003), a mix of international and domestic brands on both GSM and CDMA. There are currently 37 mobile handset manufacturers fighting and joint ventures are required to export at least 60% of their output. The WTO agreement stipulates a deregulation 2004. The domestic mobile industry has been facilitated through extensive collaboration with international component and handset suppliers, as well as Taiwan and Korean ODMs. The Chinese suppliers are aggressively expanding capacity.

In sum, China is the world's largest mobile market, and it continues to grow strongly. Chinese operators continue to grow but competition and the inflow of lower spending
customers are softening profitability somewhat. Chinese handset companies are likely to hold a ~30% market share in China, but it is an open question still if it will be a rapid international expansion, mainly due to extensive costs in marketing, and distribution for such expansion. Chinese infrastructure companies are also eager to expand and have made some headway into international market.

GENERAL DRIVERS OF CHANGE

With a focus on distribution, what are the forces driving the present changes? To single out one or a few isolated driving forces for channel changes in the global market system for mobile handsets is not an easy task. Factors are interdependent and the causalities between them are not easy to determine. For the continued discussion on the challenges facing different actors in these channels, we sum up some of the main channel factors which are important for the development in four major points. They concern two major, general changes going on – internationalization and technological change - and two apparent channel effects of these two forces: power shifts in the distribution channels, and new patterns of competition between firms in and between channels.

Internationalization and Structural Change Processes:
Internationalization puts many marks on the global distribution system for handsets. This internationalization is driven by channel actors with different positions in the channels. Thus, there is the internationalization of production and of suppliers of handset. There is also the internationalization of operators and their services. Furthermore, distributors (and to a lesser extent retail chains) are also internationalizing. In these processes there is also the concurrent emergence and entry into the international arena of new firms at all levels in the channel.

Technological Changes/Drivers
Various technological changes are affecting the development of marketing channels. Hence, shifts to 3G systems and handsets, shorter product life cycles and growth of replacement market, and the convergence of products, of services, and of technologies all change the structure of channels, including the roles of channel actors. These role shifts, in turn, have important consequences for the channel actors in terms of eg. power and dependence, and competition.

New Power-Dependence Relations and Power Shifts In The Marketing Channels
With a dynamic global distribution system consisting of around 682 operators, around 40 handset suppliers, a growing number of intermediaries/distributors, and a very large number of retailers around the world with an estimated number of 1.4 million sales points for mobile handsets, it is obvious that we will see new roles and new power situations emerge. For example, in 2004 we have seen the emergence of new powerful roles for some of the international operators.

New Patterns Of Competition and Cooperation Between Firms In And Between Channels
The power shifts are linked to new emerging patterns of competition and cooperation, both within channels, and between channels in the global arena. Within channels, in some markets, we see new emerging patterns of cooperation between handset suppliers and operators as operators increasingly demand branded handsets, and thereby an increased influence over customer relations. With the emergence of many new types of sales outlets and types of distribution, some of the since long established retail chains for mobile phones and services are facing new competing channels. At the same time, channel actors are actively searching for new forms of cooperation, in order to meet eg. the system sales requirements from the organizational, enterprise customers in the BtoB markets.

**EFFECTS ON GLOBAL DISTRIBUTION AND STRATEGIC DISTRIBUTION CHALLENGES FOR CHANNEL ACTORS**

The paper set out to discuss the following issues:

1) What are the underlying changes and drivers leading to an increased focus on distribution issues in the global market for mobile handsets?
2) What are the distribution challenges for handset manufacturers as production increasingly is becoming global?
3) What are the distribution challenges when this global distribution has to be connected to regional and local distribution and consumption networks with often very local, specific characteristics?
4) What role do operators play in this globalization of distribution process, and what are the challenges for other actors in the global distribution system?

To conclude, we elaborate on some of the channel issues facing handset manufacturers, operators and other channel actors:

1. *Important drivers leading to increased importance of distribution issues:*

   - Globalization of markets and growth of markets for handsets: Quicker time to market of new generations of handsets, an expanding market of new users, and a growing and faster replacement of handsets in established markets put pressure not only on R&D and production, but on distribution. What can be expected is that leading channel actors – irrespective of role and position – will need to be concerned with the entire process of setting up and operating the contractual organization that is responsible for meeting the total distribution requirements. This can in fact go hand in hand with an increased need for specialization in the channel based on new divisions of labor. Part of these increased requirements for a total, global channel strategy are the increased pressures put on providing product availability at the appropriate times and places in the marketing channel, i.e. logistics operations. It is likely that channel actors in the global handset industry will emphasize in the future activities which lead to fewer out-of-stock occurrences, especially at retail level, and reduced channel member inventories in order
to reduce channel member inventories and keep down the total costs.

-Technological changes in channels: It has been argued that technological changes in handsets leads to shifts in the handset production chain, from the suppliers of basic components up to the actual assembly and configuration of the final handset. The shift of production and assembly to new actors and markets will be part of this process. However, technological changes leading to new roles and power and dependence relations include to an increasing extent also technological changes in connected hardware technologies and in related service (e.g. software and service content) technologies. In some cases this means that new important channel roles will be taken by new small, and large established firms, connected to the handset production and distribution channel. Convergence of technologies, products and services puts its obvious mark on these channel change processes.

- Changes in competition and cooperation in and between channels: It was argued that there are requirements for multiple contacts between levels in the emerging global handset and operator firms and multiple contacts between levels in the channels in order to be able to handle globalization of distribution in combination with local demands. This, in combination with e.g. the role and power shifts connected to continued technological convergence, leads to shifts in competition and cooperation in and between channels. Service operators’ demands for own label handsets, for example, has in some cases lead to power struggles on branding issues between influential operators and handset suppliers.

2. Distribution challenges for handset manufacturers with increased globalization

The general changes and channel shifts described in 1) above can be said to lead a set of strategic channel challenges for all actors in the channel for mobile handsets and for mobile telephony in general. However, with a focus on the handset suppliers, we can also see a set of more specific strategic channel challenges:

- Globalization and weaker brand loyalty: The globalization of markets, in combination with the fact that customers show weaker brand loyalty as the evoked set of brands increases, require handset manufacturers to buffers in the systems to handle the increased volatility that results. To handle sometimes rapid local shifts in demands for certain brands, handset manufacturers need to develop a more efficient and flexible distribution, connecting local markets within and between regions. Coordination and integration between regions and between local markets becomes important in the process of developing distribution.

- Increased distribution complexity with more focus on efficient information systems: What we can see is a general movement from traditional channel management towards increasing demands for more coordinated supply chain management in distribution. In practise, this means that channel actors - in the first steps those with a dominant channel position – will have to invest in various ways in information systems in order to improve
planning, coordination and monitoring.

Ownership of handset consignments and channel control: Given an increased need to focus on distribution coordination, it is likely that also the important ownership function will come in focus. While the present system to some extent opens up for speculation, a more coordinated and integrated distribution system could mean that the system could be based more on a postponement logic, i.e. taking a step closer to a customer order and demand based distribution system. This might mean a general movement towards: joint reduction in channel inventories, a focus on channel-wide efficiencies, a more long-term planning horizon (in combination with shorter product cycles), ongoing planning, specialized channels with smaller supplier bases, a need for channel leadership in order to increase coordination, risks and rewards shared over the long term, and “distribution center” orientation rather than “warehouse orientation” (i.e focus on inventory velocity, interconnecting flows, just in time response across the channel etc.)

3. Distribution challenges with global, regional and local distribution and consumption

- Globalization in combination with apparent local variations: Despite the increased globalization of the handset market, and of some of its major actors, there is still a fairly high degree of local variation to handle by the channel actors. Buying large bulks of handset for purpose of speculation on a global scale has proven to be difficult in many cases because local variations in demand contradict attempts to sell standardized models on a wider scale. This local variation across markets increases the pressures on the global channel actors’ planning, monitoring and coordination processes, globally and locally. When and where there will be a certain demand for certain handsets will continue to vary. This will require multiple contacts between levels in the emerging global handset and operator firms and multiple contacts between levels in the channels.

- Handling and changing local variations in demand: Despite the continued local variations in demand it is likely that the big global actors will make efforts to affect this. Through coordinated branding campaigns etc. the large global handset manufacturers and operators will make efforts to affect demand variations (in time and geography).

4. Role of the operators and challenges for other channel actors

To conclude the discussion, we also comment on some of the challenges for the other channel actors, including the operators.

- Branding issues and the battles for channel leadership: Powerful operators’ strive to affect branding policies by demanding operator locked handsets from handset manufacturers will continue to put its mark on channel politics. Driven by ambitions to introduce operator concepts and to control user experiences, including altered subsidizing of handsets with longer contracts, we will see power shifts in the emerging global distribution systems. An apparent challenge for the operators is of course the channel
management of their new branding concepts, against the background of still strong consumer brands among the global handset manufacturers.

- Controlling user interfaces and relations with system integrators: Several channel actors are prepared to take the important control over the user interface. This is perhaps particularly visible in the enterprise market for mobile solutions, where a large number of channel specialists are emerging as important system integrators for the customers and users of mobile enterprise solutions. An apparent challenge for both operators and handset manufacturers is to establish a strong supplier or sub-supplier position in the channel in relation to these powerful, new system integrators.

- Increased focus on professional procurement in the channel: With an increased focus on distribution channel coordination issues, all actors in the channel will put increasing emphasis on the control of purchasing and ordering routines. With a move away from purchasing on speculation to postponement and demand based production and distribution, all actors in the channel – from the component suppliers, to the manufacturers, the handset distributors and retailers, and the operators – will successively have to introduce ordering and purchasing operations based on multiple channel contacts adapted to coordinated planning and monitoring processes in the channel.

- Taking the Distribution Center role: With an increased focus on speed of distribution operations, including information and inventory flows, there is a movement away from a warehouse orientation with focus on storage, safety stocks, local distribution thinking. This means that a “distribution Center” thinking and orientation is emerging. The question is if existing distributors (like Brightpoint and Cellstar) will be able to take on this role or if the handset manufacturers (or other actors) will strive to take this channel captain role. Two apparent challenges for the emerging global distributors is to defend their distribution center role by further increasing the overla efficiency, and to secondly, to establish efficient contacts with the increasing expanding global net of retailers and sales outlets (estimated at around 1.4 million worldwide in 2004).

CONCLUDING DISCUSSION

The paper has drawn attention to the driving forces behind the increasing importance of distribution issues, and to some of the strategic challenges facing the world’s handset manufacturers and other firms with positions in the global distribution network for mobile handsets. A set of distribution challenges meeting suppliers of handsets, operators, and other channel actors in the global mobile telephony industry have been discussed. We have identified a set of underlying changes and drivers leading to an increased focus on distribution issues in the global market for mobile handsets. Secondly, we have pointed at some of the distribution challenges for handset manufacturers as production increasingly is becoming global, including challenges connected to regional and local distribution and consumption networks with often very local, specific characteristics.
REFERENCES


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