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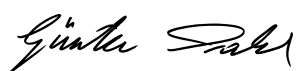
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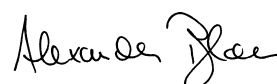
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EXECUTIVE SUMMARY

What it is - A Study on Consumer Direct Businesses and on Logistics

This is a report on Consumer Direct Business with the focus set on Fast Moving Consumer Goods (FMCG). At the same time it is a report on Smart Practices in Logistics.

Consumer Direct, i.e. selling and delivering to the consumer's doorstep by means of modern (communication) technology, was estimated in 2,000 by ECR demand side research to reach a market share of more than 10 % in Europe by the year 2010. In these studies conducted by Roland Berger the focus was primarily set on the marketing aspects of e-commerce. Soon research on logistics and information exchanges, regarded as the key enablers for efficient Consumer Direct operations, were missed by practitioners in the ECR environment. To close the gap the supply side of ECR Europe set up a project designated to research the field called "Consumer Direct Logistics". Not only the spectacular "dot.com" failures of the last months, but also the silent success of some other players in the field impressively underline the necessity to investigate logistics as a key success factor in addition to strategy and marketing in the Consumer Direct Business.

How it was done - Desk Research and Interviews across Europe

Starting point of the research was an in-depth evaluation of existing studies and literature on existing b2c e-commerce practices. Based on this desk research a referential process model was adapted, hypothesis on key factors in logistics were developed as well as first implications for logistic processes and information flows were assessed. This rough cut framework for analysis was then refined and enriched step by step in detailed interviews with experts and practitioners in the field of Consumer Direct across Europe to provide an aggregated view on the experiences of various players in this report.

How to use it - Basic Contents of the single Chapters

Chapter 1 provides a general introduction to the topic and its importance. It also outlines - still on a general level - differences in the environment of Consumer Direct operations across Europe which might help to understand relative differences between models in different countries. **Chapter 2** then sets our focus on logistics and introduces the framework for analysis.

Chapter 3 gives first insights on what might be found in practice. Here, different business models are introduced and characterized briefly. Summarized in a toolbox like the collection of business practices (the "box of alternatives"), different design approaches for single process steps of the model are shown. **Chapter 4** - basically the core component of this report - reduces the identified models to three basic scenarios called the "Distance Seller", "The Local Hero" and the "Problem Solver". Each of these scenarios is characterized and the role play of the different players involved is outlined. After a description of key challenges, recommendations on smart practices to cope with them are introduced and linked to performance indicators cost, time and quality. A word on the costs of operation close each scenario.

Chapter 5 gives a brief overview on the supporting concepts of Consumer Direct before in open ends in the business field are addressed in Chapter 6 .

1 CONSUMER DIRECT

1.1 CONSUMER DIRECT - NOISY LOSERS, SILENT WINNERS

How to succeed in a Hostile Environment - the Story of Dogs and Ponies

Years ago there was a rush in the age of exploration to the remaining undiscovered places on earth, to the so-called No-man's-Land. The typical environments of these places were hostile and provided new, unknown challenges to explorers and pioneers. Success was everything else but guaranteed. In one of these races, the discovery of Antarctica, the target was clear: 90 degrees south, 0 degrees west, but the approaches of the competitors to get there were different. And this difference influenced the success of the operation significantly.

For the explorative challenge one of the competitors planned for a long period of time using innovative technology (motor sleds and ponies). He planned to start with a large group to be split into smaller groups step by step. To provide for the men, a number of depots were built along the route, bigger ones in the beginning, smaller ones closer to the pole. Let's call him the "noisy one" - though it might have been a modest person - as

the explorer had to shake a lot of hands and to do a lot of marketing and Public Relations to finance the technology, equipment and supplies needed. The other's decision, the silent one's to explore Antarctica was made very late and announced only by a short telegram to his competitor. It seemed to be kind of spontaneous but was in fact the result of positive long term experience and training with the equipment used. The technology - dog sleds - was simple, tested and refined in years of daily operation by its users in similar environments.

The end of the story is well known. The silent one reached the pole weeks earlier and is known today as the discoverer of the south pole. The noisy one's technology failed from the beginning, ponies died where dogs survived, sleds did not work, the journey was delayed several times and finally he starved to death on his way back, a few miles in front of the last depot, having only been second in the race to the pole.

Consumer Direct - Operating in Difficult Environments

Today Consumer Direct Business in some respect also seems to be no-man's-land, and as the number of failures show, the environment can be very hostile. A lot of the failed efforts have been very loud and expensive - causing serious doubts about the feasibility of Consumer Direct operations at all.

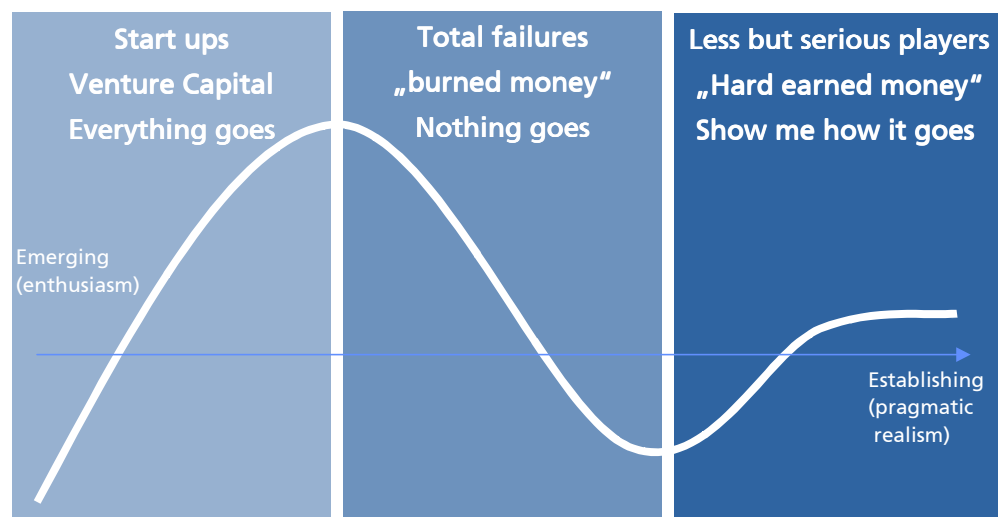
Also some silent companies exist, showing that there are ways to the pole. Tesco.com e.g. is now in one third of all Tesco's stores reaching 91 % of all British citizens. It is reported to have about 3,7 Mio. orders per year. Only 50 % of these orders were generated from Tesco patrons, i.e. 50 % is new business.

Capraboacasa.com shows similar results in Spain. Hausfreund.at has now existed for five years in Vienna with a consumer base of more than 5,000. Schlecker in Germany scaled up its distance business significantly and Coop Switzerland claims overwhelming success for its recently started Consumer Direct Business.

So – to come back to the picture of Antarctica again – after the

first enthusiastic phase when the loud-ones were attracted and the second phase of total failures began, companies had to realize that their way was not suitable for success in Consumer Direct Business. Now the quiet one's time seems to have come in a third phase, the phase of pragmatic realism (Illustration 1).

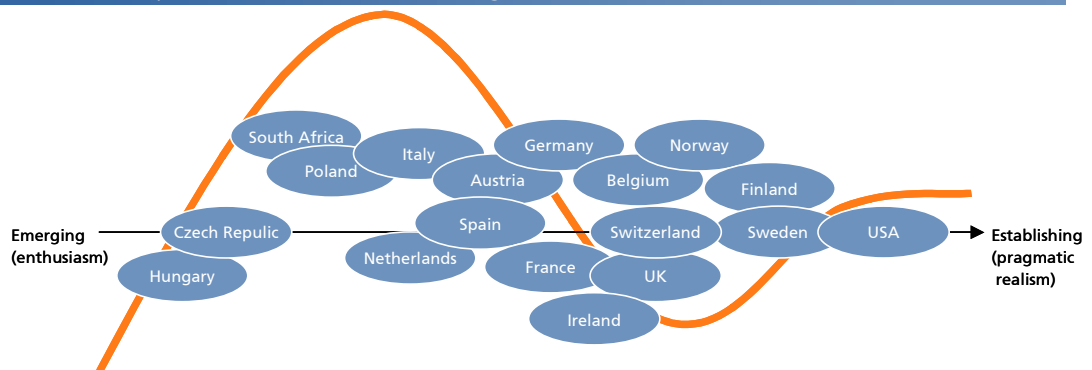
Illustration 1: What's beyond the Valley of Tears?
Source: ECR Europe Consumer Direct Logistics Study 2002



Pragmatic companies with well-tried business models got established all over Europe, as the examples of Tesco.com, Capraboacasa.com, Hausfreund.at etc. show. But "starting points" for the race to the pole vary due to the fact that business environments in European countries differ.

Concerning Consumer Direct Business different countries seem to be situated in different phases of the e-business evolution as shown in illustration 2 which sketches the various positions of e-business-countries worldwide estimated for the year 2000.

Illustration 2: Country Analysis - Emerging or Establishing
Source: eEurope 2000. Andersen Consulting



1.2 THE CONSUMER DIRECT ENVIRONMENT ACROSS EUROPE

The facts about international differences in the levels of development emphasize the need for a closer look at the differences of the Consumer Direct envi-

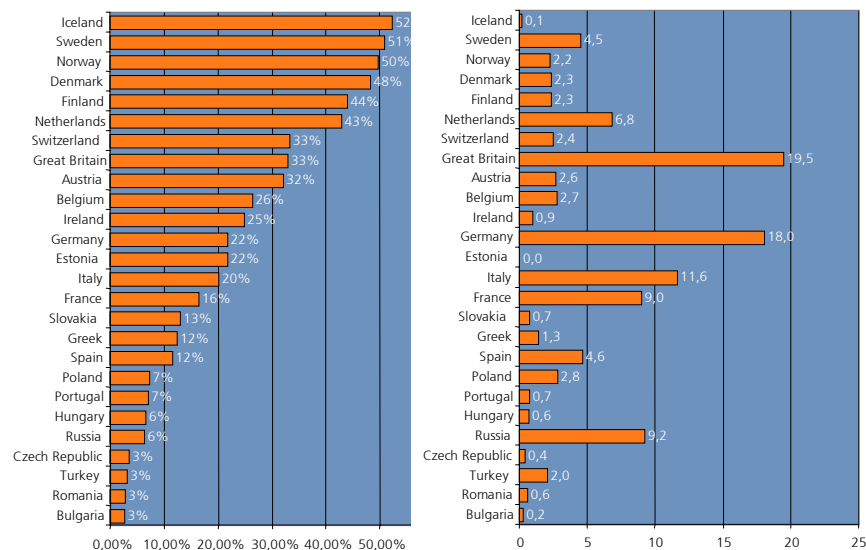
ronments across Europe. This seems to be essential to understand the various business models and ways to succeed.

Differences in E-Commerce-Affinity

A major impact on e-business activities, that aim at the final consumer, comes from the spread of Internet connections in the different countries. The size of the target group that could potentially be addressed by e-commerce activities is directly based on the size of the group of Internet users. Illustration 3 shows that the highest rates (40% and more of the popula-

tion use the Internet) are achieved by Scandinavian countries, Denmark and the Netherlands, followed by Great Britain, Switzerland and Austria with more than 30% as well as Belgium, Germany and Italy with still more than 20%. In absolute numbers the United Kingdom heads the field, directly followed by Germany, Italy and France.

Illustration 3: Internet Users in Europe, Percentage and Absolute Numbers in millions
Source: ECIN - Electronic Commerce InfoNet 2001



Differences in Shopping Behaviour

The different degrees of familiarity with the use of the Internet within the European countries as well as differences in cultural background result in the regionally different online-shopping behaviour of the European citizens. Amazon provides some interesting experiences on the difference in European shopping behaviour. Some selected results of their study from 2001 are as follows:

- The French and British are the most active European online-shoppers. About one third visit web shops more than ten times a month.
- 39% of British online-shoppers do their shopping during working-hours, almost 17% during their lunch break.
- The French prefer to shop either very early or very late. The main argument for online-shopping is convenience.
- About 26% of the Germans tried online-shopping to experience shopping without

legal restrictions in opening-hours.

- 62% of German online-shoppers shop after working-hours from 5.00 p.m. to 10.00 p.m.
- Main arguments for Germans to do online-shopping were recommendations by friends and family, convenience reasons and the wide range of products available online.
- 74% of Austrian online-shoppers – Europe's number one when measured in percent – had their first online-shopping experience only as late as 1999.
- The Irish are Europe's "shopaholics", 11% visit online-shops more than 21 times a month – more than twice the European average.
- The Swedish are the most experienced online-shoppers in Europe (1998: 60%), Swiss are less active – even today, so Amazon, only 36% have already been online-shopping.

Differences in Legal Restrictions

Differences in legal restrictions result in different circumstances for Consumer Direct Business. Basically all countries have core opening hours from 9.00 a.m. at the latest (Greece) until 7.00 p.m. at the earliest (Austria) during the week, as illustration 4 shows. Apart from these common core hours legal restrictions vary widely: UK and Denmark may have no restrictions at all (except for Sundays), in Spain

opening hours depend on local legislation, in Portugal shops close at midnight (except for Sundays), in the Netherlands and Italy they close at 10.00 p.m. (cp. illustration 4). Those facts indicate influences on Consumer Direct Business as for example Internet shoppers in Great Britain would probably be less likely to do their shopping via Internet if shops were open until midnight as they are in Portugal.

Illustration 4: Standard Opening Hours across Europe
Source: Eurocommerce 2001, Regional differences or legislation in some countries exist

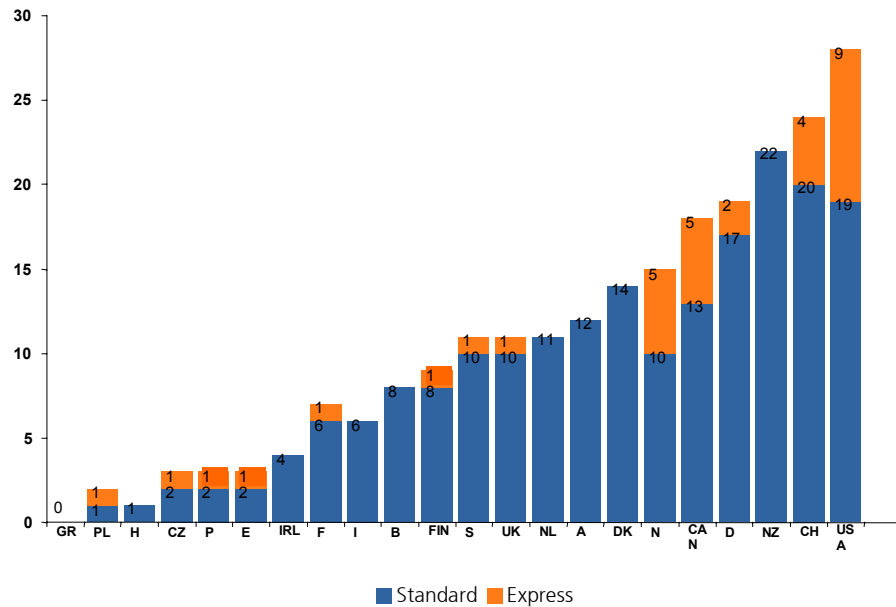
Country	Mo – Fr	Saturday	Sunday
Austria	06:00 – 19:00	06:00 – 17:00	Closed
Belgium	05:00 – 20:00	05:00 – 20:00	05:00 – 13:00
Denmark	None	None	Closed
Germany	06:00 – 20:00	06:00 – 16:00	Closed
Great Britain	None	None	10:00 – 16:00
Finland	07:00 – 21:00	07:00 – 18:00	Closed
Greece	09:00 – 20:00	09:00 – 18:00	Closed
Italy	07:00 – 22:00	07:00 – 13:00	Closed
Luxembourg	06:00 – 20:00	06:00 – 18:00	06:00 – 13:00
Netherland	06:00 – 22:00	06:00 – 22:00	Closed
Norway	06:00 – 21:00	06:00 – 18:00	Closed
Portugal	06:00 – 24:00	06:00 – 24:00	08:00 – 13:00
Spain	Local	Local	Closed

Differences in Infrastructure - The European Parcel Market

The volume of the national parcel market as well may be seen as a source of influence on the evolution of Consumer Direct, as logistics is an integral part of Consumer Direct Business. As a conclusion of this study, the factor “parcels per capita” has a positive influence on the development of Consumer Direct

Business, as countries with a high volume of parcels sent per capita like the Netherlands, Germany, the U.S. or Switzerland (cp. illustration 5) show an advanced position in the international evolution of Consumer Direct Logistics market (cp. illustration 2).

Illustration 5: European Parcel Volume - Parcels per Capita
Source: Fraunhofer ATL 2002

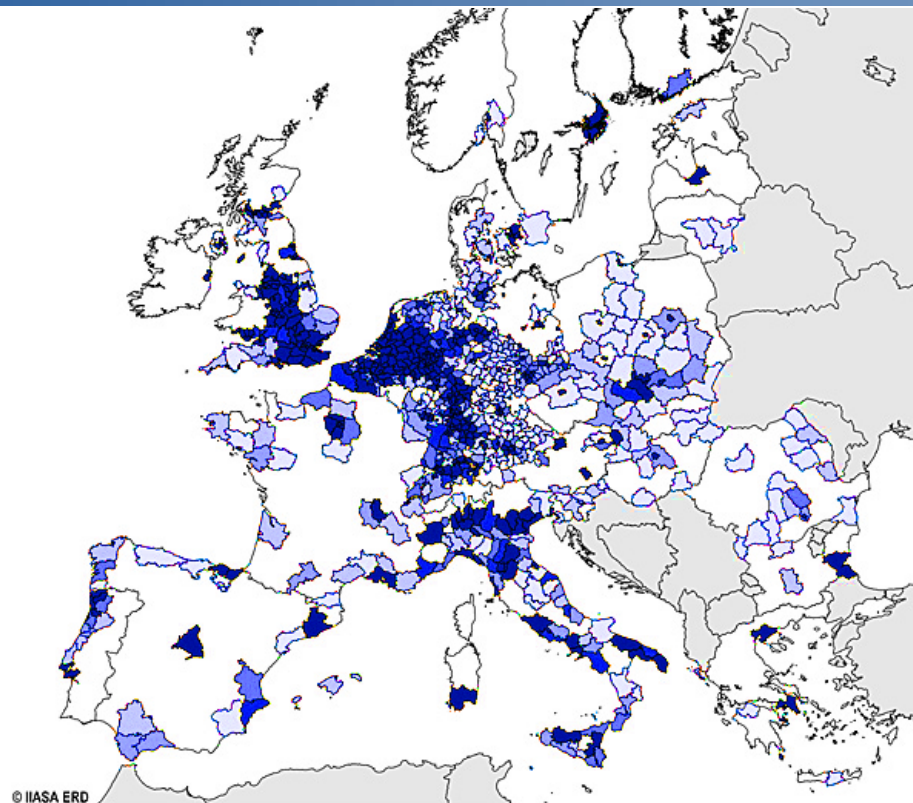


Differences in Infrastructure - High Density Areas

Another factor that differs all over Europe and strongly influences Consumer Direct Business, especially the related logistics, is

the density of population in the target areas as it is shown in illustration 6.

Illustration 6: Population Density in Europe - High Density Areas
Source: IIASA



Differences in Profit Margins

The profit margins are the next factor that influence the particular national environment of Consumer Direct Business. They vary in Europe from about 0,5% minimum in German discounters to a maximum of about 6% in Great Britain and France. Obviously higher margins earned in the retail industry broaden the possibilities for Consumer Direct

Business because higher costs can still be buffered within these margins. In contrast a margin of 0,5% for discounters in Germany does not allow many additional costs for Consumer Direct Business if profits want to be achieved. Illustration 7 provides some rough estimates from different sources to show the relative differences across Europe.

Illustration 7: Relative Differences in Margins
Source: "Over the thumb"-Estimations of different Sources

Country	Estimated Margin in general	... for Discounters
Germany	1 - 2 %	0,5 - 1 %
United Kingdom	4 - 6 %	
France	4 - 6 %	3 - 4 %
Spain	5 - 6 %	2,5 - 3 %

2 CONSUMER DIRECT LOGISTICS - FOCUS AND FRAMEWORK OF THIS REPORT

2.1 LOGISTICS - THE FORGOTTEN CHALLENGES

As the introduction to this report demonstrated, the hostile or – at least difficult- environment of Consumer Direct Logistics causes problems to the players in this

market. Let us now take a first brief look at general challenges that make quite clear why logistics is such an important field in Consumer Direct.

Challenge 1: Coping with a Growing Market

Consumer Direct market in Europe still holds high potentials. Berger estimates this market in Europe to exceed the US market in volume by 2005. One central driver for this predicted development is the fact that access to Europe's online markets gets easier because of the advancing deregulation. Market transparency probably is probably higher in the Consumer Direct sector than in any other business, as consumers capture product in-

formation on the Internet and therefore competition increases. Because of comparatively low costs for infrastructure in online businesses, geographic expansion is easier to achieve online and it is possible to establish a presence in almost any international market. Attracted by the high potentials new players, especially from the US, will move aggressively into the European market with localized offerings, as a study by the BCG shows.

Illustration 8: Online Retail Transactions by Category 1999
Source: The Race for Online Riches: E Retailing in Europe, BCG

Category	Turnover in Million €	Growth 1999 in %
Travel	980	280
Computer Hardware/Software	714	135
Books	415	155
Financial Brokerage	398	135
Collectibles/Auctions	224	950
Music/Video	181	205
Food/Wine	154	350
Apparel	151	260
Consumer Electronics	119	175
Event Tickets	47	N.A.
Home/Garden	39	275
Flowers/Cards/Gifts	36	N.A.
Toys	19	330

As illustration 8 demonstrates, the grocery sector (here represented by food and wine) has an estimated growth rate of 350 % which still allows for a high market growth today. Considering that additional logistical efforts

in Consumer Direct Business have to be undertaken, i.e. picking and packing as well as the "last mile" delivery, it gets clear that the burdens on logistic systems grow with Consumer Direct Business.

Challenge 2: Dealing with Consumer Restrictions

Most consumers in today's FMCG sector seem to be indifferent about online-shopping. They do not show preferences neither for re- nor for e-tailing, e.g. online shopping is not interesting just by being what it is, but needs to provide special services that attract more consumers in future.

The potential still exists: Generally spoken, time pressure, dissatisfaction with grocery shopping, technology excitement and protective legislation will drive Consumer Direct in Europe.

According to Berger, up to 76% of the consumers claim they would use Consumer Direct for their main shopping if satisfied by service and performance of the e-tailer. 41% in the UK, 30% in France, 21% in Sweden and 44% in Germany say: "I never (or rarely) enjoy grocery shopping." So the hope that the group of consumers with high time pressure and high income, e.g. time-critical consumers or households that rather spend money to save time than vice versa, will be the future Consumer Direct users, seems justified.

Barriers that have to be overcome to reach this target market are high consumer expectations that have to be met, challenging

especially e-tailer's logistic systems, like the freshness of products, reliability, on-time-delivery, value for money etc. Central points of these consumer restrictions are as follows:

- On time, reliable and quick delivery is of central significance for the consumer. Logistical standards for the "last mile" must be very high to meet consumers expectations: advising of delivery, meeting consumers time slots, quick delivery, and all that for low cost. This point still gets more emphasis considering, that the later the order reaches its consumer, the higher the probability for this order to be returned.
- Convenient online-shopping includes the possibility to return products which do not meet the consumers' expectations within a certain time limit. Returns should be possible independent of the minimum order value for every consumer in order to overcome the consumers' inhibitions to use online shops. This means additional expenses for companies operating in Consumer Direct Business, and especially for a sophisticated reverse logistics system.

Challenge 3: Ability to Handle Peaks

The examples of Christmas business 1999, when the majority of deliveries did not reach their destinies in time, i.e. the 24th of December, shows that the ability to handle peaks is of central importance for Consumer Direct Business. Most unsatisfied users stated that they were not willing to use online-shopping as an alternative to "brick and mortar" shops any longer. In the year 2000 e-tailers were better prepared: over 90% of consumers stated that the service provided was satisfying, and that they would re-use the web to do their shopping (68% in 1stQ 2001).

If logistical systems are not able to cope with peak situations, as indicated above, two basic types of negative effects occur:

- Missing potential orders result in sinking sales volume as potential consumers decide to buy in other places due to non-availability (dissipation of turnover).
- Unsatisfied consumers could be so displeased that they might be lost as consumers forever (strategic loss of customers).

That means that the overall system, i.e. logistics as well as order entry, must necessarily be flexible to satisfy consumers wishes even – or especially - in peak situations, but without holding unnecessary stocks along the Supply Chain and therefore causing disproportional high costs for the aspired performance.

Challenge 4: Growing in Small Steps

The topic "cost-issue leads directly to the last, but probably most important challenge: being able to earn money.

To get an idea of what additional cost Consumer Direct Business needs to cover, it has to be considered, that in "traditional" business picking and packing as well as the "last mile" is done by the consumer "for free", i.e. consumers go to the retailer, chose their goods from the outlet (without any faults) and ship it to their homes. Consumer Direct Businesses have to cope with these additional costs:

- Approx. a minimum of € 2,5 for an additional stop of a home delivery service.

- Up to € 5 for unfavorable conditions (like extra tours, time-slots on the weekend or in the evening, etc.).
- Another € 2,5 – 5 for picking an average order of 20 positions from an assortment of typically 15,000 SKUs.
- These figures have to be compared to a total amount of a typical order of € 30 – 65, with a yield of only 1 - 2 %.

Many players were not able to cover these costs by their profit margins, and did not manage to pass them on to their consumers in form of e.g. an extra fee for logistical services.

This problem effected multi-channel players as well as pure

players: many multichannel players operate in "red figures", for Pure Players it was even harder: many had to give up.

The example Webvan shows, that after a first period of euphoria, when all the capital was burned, disillusion occurred. Growing in small steps is essen-

tial: experiences shows, that it makes no sense to rely too much on future potentials, but to orientate one's own size and growth rate - especially of the money-consuming logistical system - to the actual market and market development.

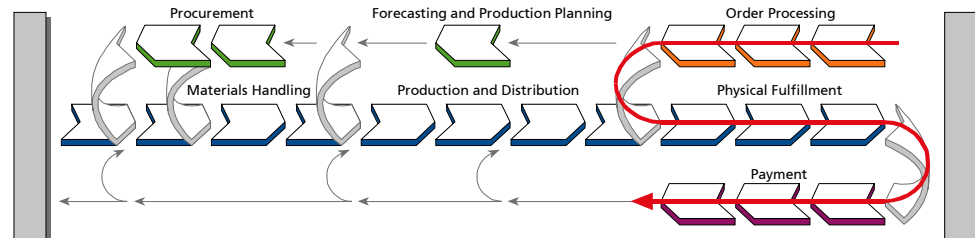
2.2 A LOGISTICS FLOW MODEL - THE FRAMEWORK FOR ANALYSIS

2.2.1 The Basic Model – Supply Chain S

Consumer Direct Logistics focuses especially on goods and information flows necessary for efficient direct fulfilment in b2c e-commerce systems. Due to the comprehensive approach of the project it was necessary to use a generic process model fulfilling the following demands:

- The model should cover all relevant physical and informational process steps of Consumer Direct Logistics.
- Due to implications for electronic communication platforms and logistical information systems, it has to cover technological issues as well.
- In order to display the variety of existing CDL operations the reference model should be able to describe different e-commerce business models and service concepts.
- The model should contain b2c-frontend as well as b2b-backend, because CDL may effect retail as well as manufacturers and suppliers.

Illustration 9: Supply Chain S Model
Source: Fraunhofer ATL



A flow oriented generic model that meets these requirements is the Supply Chain "S" which has already been used in the ECR Europe's Integrated Suppliers project. The model describes the order-to-payment process inside

a company and can be used and adapted to all types of enterprises in a value chain. During the CDL project it was successfully adapted to b2c e-commerce processes. The result is shown in the following chapter.

2.2.2 The E-Commerce-S – Generic Flows

Illustration 10 shows the four different generic flows important for the discussion concerning Consumer Direct Logistics issues: (1) the information flow, containing additional stimulation processes, (2) the physical fulfil-

ment flow, (3) the reverse flow and (4) the payment flow. This study especially focuses on the process steps highlighted by the orange box which – as a whole – can be understood as the "CDL operation".

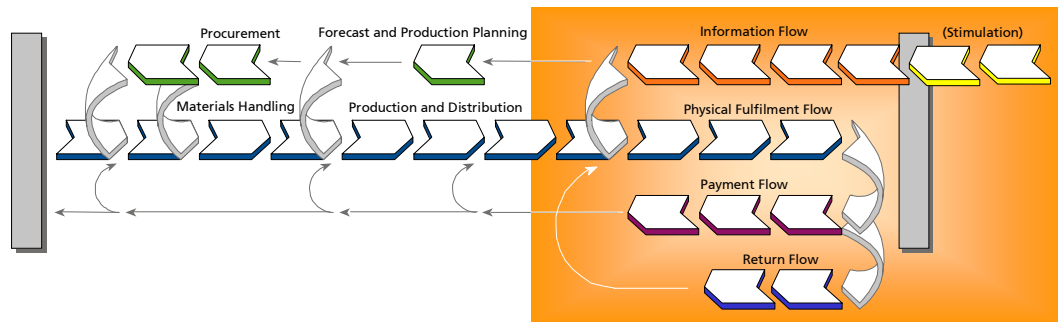


Illustration 10 also illustrates that all requirements mentioned above can easily be met:

- The information flow reaching from the stimulation of consumer needs to procurement on the suppliers side is part of the model as well as the flow of goods starting with material handling on the supply side and ending with delivery to the consumer. Payment flows which are also included in the model can be interpreted as information flows in the age of electronic payment.
- The model includes all typical process steps which could be part of Consumer Direct Logistics operations. Apart from standard process steps like order entry and processing, picking and packing or transportation processes, e-commerce specific activities like stimulation, merging of part deliveries and additional services, returns and point of use services are taken into account.
- The model can be used for the identification of information and communication technologies like bar-coding, EDI or Internet and information systems like ERP- and Supply Chain software or tracking & tracing systems which are currently applied in CDL. The process perspective of the model allows the appropriation of process steps and technologies respectively IT-systems.
- There is a large number of possible business models and service concepts which can be described using the e-commerce "S". In one version of CDL operations all process steps included in the orange box could be carried out by the CDL provider himself, in another version most process steps could be outsourced to logistics service providers or other specialists. Clearly the model allows the definition of a great variety of different business models covering all variations between the two extreme versions described.
- The model integrates a Front-End to the consumer on the right side of the orange box and a Back-End to suppliers on the left hand side, each including informational and physical as well as financial interfaces.

2.2.3 The Process Steps – From Stimulation to Payment

Due to the arguments mentioned above the generic e-commerce “S” is an ideal starting point for the analysis of Consumer Direct Logistics operations. For a detailed analysis of the underlying processes in the Supply Chain a deeper look into

process organisation is necessary. Therefore a hierarchy of process steps and basic activities can be determined as shown by illustration 11. The mentioned process steps are explained in more detail in illustration 12.

Illustration 11: Second Level of the E-Commerce S-Model
Source: Fraunhofer ATL

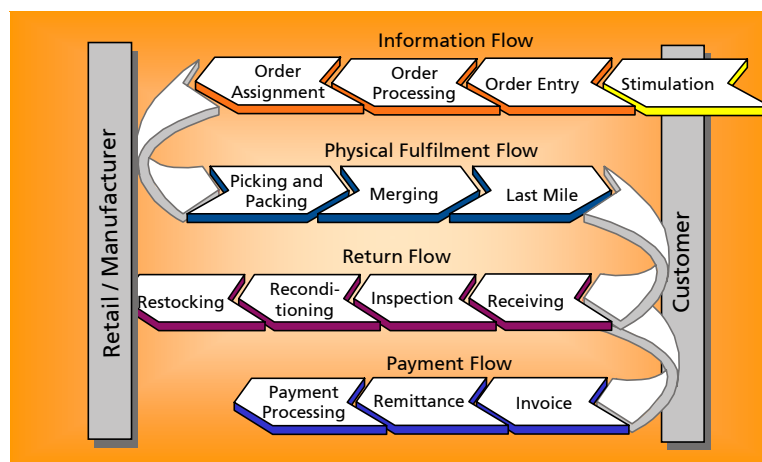


Illustration 12: Process Steps and Activities
Source: ECR Europe Consumer Direct Logistics Study 2002

Process Level 1	Process Level 2	Explanation
Information Flow	Need Stimulation	Consumer needs are stimulated using different media. Printed catalogues and complex automatic replenishment systems based on highly innovative IT-technologies limit a huge variety of marketing tools on both sides of the spectrum.
	Order Entry	The order is received by the Consumer Direct Logistics provider. In existing operations call centres as well as Internet connections are used.
	Order Processing	Order processing includes checks concerning the creditworthiness of the consumer, plausibility of order, ability to deliver, etc. Consumer profiles are generated, cross checks are carried out to create consumer specific offers.
	Order Assignment	The order gets released for physical fulfilment. Additional information is given to manufacturers or other partners upstream the Supply Chain. Supply chain software or other coordination tools can be used for assistance.

Process Level 1	Process Level 2	Explanation
Physical Flow	Picking and Packing	The order is normally picked in dedicated warehouses and/or shops using mobile IT-equipment. There are different possibilities for packing picked items. Some companies use normal postal packages, others use bag-in-box systems, etc.
	Merging	Partial deliveries which have been picked and packed in different warehouse or shop zones need to be merged before they are delivered to the consumer. The same applies to deliveries coming from other sources like local bakeries, butchers or other specialized service providers. The merging process often takes place directly in front of the consumer's door.
	Last Mile	The goods are delivered to the consumer. Different locations like the front door of the consumers house, the office or other places frequently passed by are used. In some cases the consumer has to be at home, in others he does not.
	Point of Use Service	Depending on the type of product different point of use services can be offered. Sometimes, for example, the driver places the delivered goods into the storage room of the consumer.
Reverse Flow	Receiving	If the quality or quantity of the goods delivered is not in order, somebody has to take back the products. The same applies for special services like empties, repairs or dry cleaning.
	Inspection	The received goods are inspected by retailers, manufacturers or special service providers. Then it has to be decided, whether the consumer gets a refund and what is to be done with the returned goods or items.
	Reconditioning	The inspected goods have to be refined or reconditioned and repacked. In some cases, e.g. dry cleaning, the items collected at different consumers are bundled and given to a specialist.
	Restocking	After the inspection, the reconditioned and repacked products and items can be restocked in warehouses resp. shops or, in case of items which belong to a dedicated consumer, buffered in a designated zone of the fulfilment center.
Payment Flow	Invoice	An invoice is sent to the consumer by the Consumer Direct Logistics Service provider. This process step is not necessary if credit cards or other prepaid mechanisms are used or if the consumer has to pay in cash.
	Remittance	If the consumer did not pay in cash during delivery or in advance he has to transfer the money using standard remittance processes.
	Payment Processing	The underlying payment processing, the funding and refunding is normally done by the financial institutions used by Consumer Direct Logistics provider and consumer.

3 WHAT PRACTICE SHOWS - BUSINESS MODELS AND DESIGN FOR LOGISTICS

3.1 BUSINESS MODELS FOR CONSUMER DIRECT OPERATIONS - WHAT WE FOUND?

3.1.1 Characterization

In a broad literature review a large number of companies have been identified that are engaged in Consumer Direct Logistics. The analysis of these companies has shown that in this young market several business models already exist.

The following criteria have been used to describe the business models:

- Products offered → What kind of products and services are offered?
- Breadth of assortment → How broad is the offered assortment?

- Point of use service → What kind of point of use services are offered?
- Point of delivery → Where are products delivered to?
- Area of operation → In what geographical area is the service offered?
- Delivery time → At what time are orders delivered?

The individual specifications of each criteria are shown in illustration 13.

Illustration 13: Criteria to classify Business Models
Source: ECR Europe Consumer Direct Logistics Study 2002

Products offered	Packaged dry goods (normal handling)		Fresh/chilled/frozen goods (special handling)		Additional services
Breadth of assortment	Broad			Limited	
Point of use service	None	Returns		Information services	Physical services
Point of delivery	Pick up at the store	Intermediate locations	Office delivery	Attended home delivery	Unattended home delivery
Area of operation	Local	Regional		National	International
Delivery time	Next day plus non definite	Next day, time definite		Same day	Less than two hours

3.1.2 Business Models

A Number of different Business Models can be found in literature and practice. In this chapter

some of the most typical models are briefly characterized.

Drugstore Model

The companies in this scenario mainly offer dry grocery products that are shipped to the consumers via parcel services. Picking is

done in a central warehouse. The standard delivery time is usually "next day". Examples are Schlecker, Rossmann, Netgrocer.

Illustration 14: Drugstore Model characterized
Source: ECR Europe Consumer Direct Logistics Study 2002

Products offered	Packaged dry goods (normal handling)	Fresh/chilled/frozen goods (special handling)	Additional services		
Breadth of assortment	Broad			Limited	
Point of use service	None	Returns	Information services	Physical services	
Point of delivery	Pick up at the store	Intermediate locations	Office delivery	Attended home delivery	Unattended home delivery
Area of operation	Local	Regional	National	International	
Delivery time	Next day plus non definite	Next day, time definite	Same day	Less than two hours	

Convenience Store Model

Companies that deliver a limited supermarket assortment, meals, convenience food as well as entertainment products within less than two hours do the picking

and packing in small distribution centres. Well-known companies are Kozmo and Urbanfetch.

Illustration 15: Convenience Store Model characterized
Source: ECR Europe Consumer Direct Logistics Study 2002

Products offered	Packaged dry goods (normal handling)	Fresh/chilled/frozen goods (special handling)	Additional services		
Breadth of assortment	Broad			Limited	
Point of use service	None	Returns	Information services	Physical services	
Point of delivery	Pick up at the store	Intermediate locations	Office delivery	Attended home delivery	Unattended home delivery
Area of operation	Local	Regional	National	International	
Delivery time	Next day plus non definite	Next day, time definite	Same day	Less than two hours	

Full Service Grocer Model – Normal Speed

Products are usually delivered the same or the following day. Deliveries are subject to a pre-determined time schedule. Dedicated warehouses or stores are used for fulfilment. This business

model is used by many successful companies like Tesco, Sainsbury's or Netconsum, but was also the core of Webvan's operational concept that failed famously.

Illustration 16: Full Service Grocer Model – Normal Speed characterized
Source: ECR Europe Consumer Direct Logistics Study 2002

Products offered	Packaged dry goods (normal handling)		Fresh/chilled/frozen goods (special handling)		Additional services	
Breadth of assortment	Broad			Limited		
Point of use service	None	Returns		Information services		Physical services
Point of delivery	Pick up at the store	Intermediate locations	Office delivery	Attended home delivery		Unattended home delivery
Area of operation	Local		Regional	National		International
Delivery time	Next day plus non definite		Next day, time definite	Same day		Less than two hours

Full Service Grocer Model – High Speed Delivery Cycle

In this business model orders are delivered within less than two hours. The picking takes place in

small local distribution centres. High speed companies are PD Quick and Lofex.

Illustration 17: Full Service Grocer Model – High Speed Delivery Cycle characterized
Source: ECR Europe Consumer Direct Logistics Study 2002

Products offered	Packaged dry goods (normal handling)		Fresh/chilled/frozen goods (special handling)		Additional services		
Breadth of assortment	Broad			Limited			
Point of use service	None	Returns		Information services		Physical services	
Point of delivery	Pick up at the store	Intermediate locations	Office delivery	Attended home delivery		Unattended home delivery	
Area of operation	Local		Regional		National		International
Delivery time	Next day plus non definite		Next day, time definite		Same day		Less than two hours

Full Service Grocer Model – Pick Up

The most important characteristic of this model is the pick-up of ordered products at the super-

market by the consumer. Orders are fulfilled in the store. Safeway used to offer this service.

Illustration 18: Full Service Grocer Model – Pick Up characterized
Source: ECR Europe Consumer Direct Logistics Study 2002

Products offered	Packaged dry goods (normal handling)	Fresh/chilled/frozen goods (special handling)	Additional services		
Breadth of assortment	Broad			Limited	
Point of use service	None	Returns	Information services	Physical services	
Point of delivery	Pick up at the store	Intermediate locations	Office delivery	Attended home delivery	Unattended home delivery
Area of operation	Local	Regional	National	International	
Delivery time	Next day plus non definite	Next day, time definite	Same day	Less than two hours	

Full Service Grocer Model – Bundled Office Delivery

Companies bundle orders from different people, working in the same office, in order to reduce stop-times. The whole super-

market assortment is picked in a local shop and usually delivered the same day. An example for this model is Waitrose.

Illustration 19: Full Service Grocer Model – Bundled Office Delivery characterized
Source: ECR Europe Consumer Direct Logistics Study 2002

Products offered	Packaged dry goods (normal handling)	Fresh/chilled/frozen goods (special handling)	Additional services		
Breadth of assortment	Broad			Limited	
Point of use service	None	Returns	Information services	Physical services	
Point of delivery	Pick up at the store	Intermediate locations	Office delivery	Attended home delivery	Unattended home delivery
Area of operation	Local	Regional	National	International	
Delivery time	Next day plus non definite	Next day, time definite	Same day	Less than two hours	

Full Service Grocer Model – Unattended Delivery

During delivery the consumer does not need to be at home since the goods are stored in special boxes or garages provided by the consumer. Orders

are fulfilled the same day or on a predetermined day a week. Picking takes place in local distribution centres. Streamline operated using this business model.

Illustration 20: Full Service Grocer Model – Unattended Delivery characterized
Source: ECR Europe Consumer Direct Logistics Study 2002

Products offered	Packaged dry goods (normal handling)	Fresh/chilled/frozen goods (special handling)	Additional services	
Breadth of assortment	Broad		Limited	
Point of use service	None	Returns	Information services	Physical services
Point of delivery	Pick up at the store	Intermediate locations	Office delivery	Attended home delivery
Area of operation	Local	Regional	National	International
Delivery time	Next day plus non definite	Next day, time definite	Same day	Less than two hours

3.1.3 Still Existing and Abandoned Companies and their Business Models

During the project, practice showed that not all companies and their chosen business models were successful and therefore were not able to compete in a difficult market. The most prominent failures in the last year surely include Streamline, Webvan, Kozmo and Le Shop in Germany.

Analysing the failures, it can be said that the quality of delivery services was good. However, the cash burn rate of these compa-

nies was too high, e.g. Webvan nearly burned 1 billion US-\$. Nevertheless, after bankruptcy Webvan, as was commented by an analyst, "may well have been 10 or 20 years ahead of its time." And, like many businesses born in the euphoric days of the dot-com boom, it tried to get too big, too fast.

Illustration 21 shows several Consumer Direct companies, indicating who still exists and who has not made it.

Illustration 21: Existing and abandoned Business Models at the End of 2001
Source: ECR Europe Consumer Direct Logistics Study 2002

		Business Models						
				Full Service Grocer				
		Drugstore Model	Convenience Store Model	Normal Speed Model	High Speed Delivery Cycle	Pick up	Bundled Office Delivery	Unattended Delivery
		 Still exist  Died						
Companies	Europe	Einkauf 24 (D)						
		Tengelmann (D)						
		Karstadt (D)						
		Kaufhof (D)						
		LeShop (D)						
		LOFEX						
		Markant (D)						
		netconsum (D)						
		Onkel Emma (D)						
		Otto (D)						
		Rossmann (D)						
		Schlecker (D)						
		LeShop (SUI)						
		Coop (UK)						
		Iceland (UK)						
		Safeway (UK)						
	Europe	Sainsbury's (UK)						
		Tesco (UK)						
		Waitrose (UK)						
		Hausfreund (AT)						
		Magnet (AUT)						
		Ooshop (F)						
		Thuiservice (NL)						
		Alcampodirect (ESP)						
		Caprabo (ESP)						
		Condisline (ESP)						
		Corte Ingles (ESP)						
		ICA (SWE)						
Companies	North America	Albertsons (US)						
		HomeRuns (US)						
		Kozmo (US)						
		Netgrocer (US)						
		PD Quick (US)						
		Peapod (US)						

	ShopLink (US)							
	Streamline (US)							
	Urbanfetch (US)							
	Webvan (US)							
	Your grocer.com (US)							

3.2 A TOOLBOX OF LOGISTICAL DESIGN ALTERNATIVES - WHAT IS DONE?

During the project a “toolbox” was used, in order to detail the individual process steps along the Supply Chain “S”-model, to

identify design problems for every activity and to show currently available design alternatives.

Toolbox look additional file page 1 (32)

Toolbox look additional file page 2 (33)

4 THREE BASIC SCENARIOS OF CONSUMER DIRECT OPERATIONS

4.1 COOKING IT DOWN TO THREE BASIC SCENARIOS

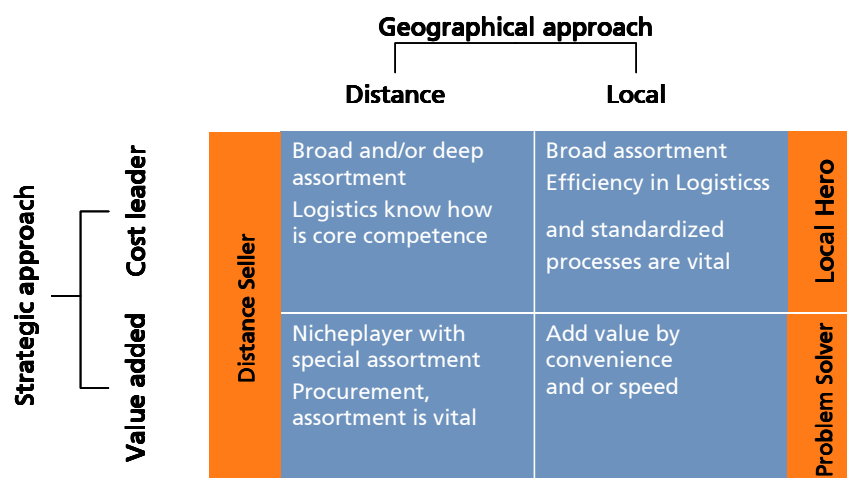
From Where to Where, Fast, Cheap or Complete - Geographical Approach and the Different Value Proposition as Criteria to Classify Business Models

To obtain a feasible number of business models for further analysis the number of models is reduced to generic scenarios. To define these scenarios, a geographic approach and a more strategic approach, that takes the basic value proposition of the different models into account, are applied. Regarding geography two basic approaches can be distinguished. On the one hand there are business models basically characterized as Distance Seller models, describing companies that sell from one or a few central locations to every point where consumers are located. Shipping is provided by parcel services. On the other hand companies focus on local regions, which are typically high density areas. These areas are covered by a local delivery service. When rolling out this model to an entire nation or even

Europe, such density areas are added step by step.

Regarding value proposition e.g. Porter's classical distinction into Cost Leaders and Value Adders can be applied. Cost Leaders typically employ standardized and cost efficient processes while Value Adders allow for more individualization to support their competitive edge. Similar to this the assortment of Cost Leaders is typically either broad (All rounder) or deep (Category Killer), while a Value Adding approach is typically built up on niche products offered by exclusive suppliers. Regarding the distinction made in the chapter above, four basic types can be distinguished (compare illustration 22). Regarding the Distance Seller as one such scenario, three scenarios can be identified for further research.

Illustration 22: Three different Scenarios characterizing Archetypes of Business Models
Source: ECR Europe Consumer Direct Logistics Study 2002



4.2 SCENARIO 1: THE "DISTANCE SELLER" IN DETAIL

4.2.1 Characterizing the "Distance Seller" Scenario

In 1498 the first mail-order catalogue was published in Venice. Since this time mail-order or Distance Selling can be regarded as a traditional sector of retailing. In this scenario the element of distance and the fact that consumers and Distance Sellers do not meet "face to face" is vital.

In Europe, Distance Selling has generated approximately 47 billion € in the year 2000. This is equivalent to a spending of 115 € per capita in Europe. Compared to the European average, Germany and the US are "champions" in Distance Selling by spending 259€ per capita.

The main characteristics of the scenario can be described regarding three main aspects: logistical objects, geography and time. The logistical objects usually comprise products and goods that can be shipped as a parcel by a postal or parcel service. The typical number of SKU lays between 50,000 – 250,000. The offered products are mainly dry goods. Perishables are principally not offered due to the difficult handling during transportation. However, LeShop of Switzerland experiments with special delivery boxes in order to offer fresh goods. In Germany around 400 million parcels were sent by Distance Sellers in the year 2000. The average price of a parcel is between 4,00 and 4,50 € in Europe.

Geographically it can be said that orders are usually picked and packed in central ware-

houses and then distributed nationwide to every single consumer. The delivery mainly takes place 24 to 48 hours after order entry.

Furthermore, a main point of this scenario is the essential "right to return" goods or the right to cancel an order within a period of at least seven working days. Due to this, a high percentage of goods is returned which increases the costs of a Distance Seller tremendously.

Printed catalogues, telephone and postcards for ordering are now replaced by electronic, Internet-based catalogues and by electronic order forms. So the Distance Seller uses various channels to contact consumers. However, according to a recent study, the penetration of online orders increases slowly.

The current Distance Seller can be distinguished into two different categories: 1) the Universal Distance Seller (e.g. Otto) whose core competence is the complete handling of the logistics function with its own subsidiaries (e.g. Hermes). 2) the Specialized Distance Seller (e.g. Zooplus). The main competencies of these retailers are purchasing, marketing and the choice of assortment. Their logistics function is outsourced to a logistics service provider, who undertakes the complete fulfilment, else incurring high fixed costs for the retailer. Typical Distance Sellers are Otto, Quelle, Amazon, La Redoute, N Brown.

Illustration 23: Characterization of the Scenario "Distance Seller"
Source: ECR Europe Consumer Direct Logistics Study 2002

Products offered	Packaged dry goods (normal handling)	Fresh/chilled/frozen goods (special handling)	Additional services		
Breadth of assortment	Broad			Limited	
Point of use service	None	Returns	Information services	Physical services	
Point of delivery	Pick up at the store	Intermediate locations	Office delivery	Attended home delivery	Unattended home delivery
Area of operation	Local	Regional	National	International	
Delivery time	Next day plus non definite	Next day, time definite	Same day	Less than two hours	

4.2.2 Typical Role Play in the "Distance Seller" Scenario

In this scenario the already introduced two categories have to be discussed further as there are some differences in the role play.

The Universal Distance Seller usually controls the whole order-to-payment process. The fulfilment of the "last mile" and the returns are carried out either by an own logistics company or by a postal company. The Inspec-

tion, reconditioning and the complete payment flow is performed by the Distance Seller.

The Specialized Distance Seller is usually in command of the information flow, especially of the stimulation. The other process steps can be fulfilled by a third party, like logistics service provider or clearing houses to settle the financial issues.

Illustration 24: Typical Role Play in the "Distance Seller" Scenario
Source: ECR Europe Consumer Direct Logistics Study 2002

Process Level 1	Process Level 2	Roleplay			
		Distance Seller	Logistics Service Provider	Postal Servicer	Financial Inst.
Info Flow	Need Stimulation				
	Order Entry				
	Order Processing				
	Order Assignment				
Physical Flow	Picking and Packing				
	Merging				
	Last Mile				
	Point of Use Service				
Reverse Flow	Receiving				
	Inspection				

	Reconditioning				
	Restocking				
Payment Flow	Invoice				
	Remittance				
	Payment Processing				

4.2.3 General Issues For a Successful “Distance Seller”

For the success of a Distance Seller some general issues have to be considered. However, these issues are mainly related to marketing and distance selling in

general and will therefore only be mentioned briefly. Trying to describe the Distance Seller scenario in general would go far beyond the scope of this report.

Building Up Consumer Loyalty

Building up consumer loyalty is a challenging task especially for Internet companies where consumers can not feel and touch the products. A positive shopping experience can achieve consumer loyalty. Established retailers draw advantages. Some smart practices are listed below:

- ④ Offer “all product” search possibilities to increase the quality of the web site as products can be found faster.
- ④ Offer a “one-stop-shopping” possibility improving consumer convenience. The result

is a larger average shopping basket.

- ④ Use cross marketing, referring from a printed catalogue to the web side, which results in cost savings by eliminating manual handling costs for order entry.
- ④ Cooperate with selected lobby groups to reduce advertising costs.
- ④ Target consumers with a “one-size-fits all” strategy is difficult to perform. The Distance Seller can respond to special consumer needs in a better way.

Establishing a Brand Name

Establishing a strong brand name is vital for both “bricks & clicks” companies as well as for pure Internet companies as the information flood on the Internet is so big that the consumer can

not distinguish between individual shops anymore. In this battle, established “bricks & clicks” companies have a huge competitive advantage.

Choosing the Right Partner

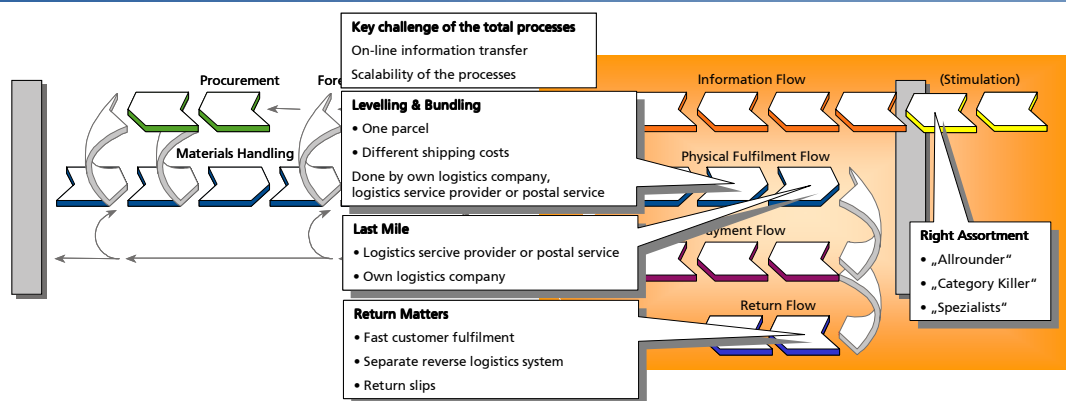
To become a successful Distance Seller is not easy and can't be achieved by an individual company on its own. Therefore it is a necessary task to choose the right partner. Often, established manufacturers do not want to sell their products to pure Internet companies as they fear loss of credit by their regular dealers. However, other manufacturers exist, who have chosen the Internet as the premium sales channel (e.g. Henkel's dermatological washing powder is available only at LeShop.ch). When the Distance Seller aims at a one stop shopping location, it

can be interesting for him to partner with other retailers in order to avoid the risk of high inventory losses if the product category is not prosperous (e.g. Amazon partnered with Toys-R-Us for toys as they experienced capacity and delivery problems).

For pure Internet players to find a capable logistics service provider who has a broad and deep understanding of logistical and transport issues is vital. Nevertheless, this is a challenging task and needs to be considered well as contracts are often long-term agreements.

4.2.4 Challenges for Logistics and Smart Practices in the "Distance Seller" Scenario

Illustration 25: Keys to Success - Challenges for Logistics in "Distance Seller" Scenario
Source: ECR Europe Consumer Direct Logistics Study 2002



In addition to the general issues regarding success, Distance Sellers are faced with challenges for logistics as well. Said challenges

are presented now as well as some smart practices to cope with these logistical challenges.

Choosing the Right Assortment

A major challenge is the selection of the right assortment. Connected to this decision is the choice of the preferred target group.

- ④ "All rounder" like Otto have a very broad, but not very deep assortment.
- ④ "Category Killers" like Amazon hold a limited selected assortment. However, it is very deep.

Returns Matter

This is the most challenging problem for Distance Sellers as the management of returned goods is necessary in order to decrease costs and to increase consumer loyalty. Due to the ease of order possibilities over the Internet consumers tend to more impulsive buying. This leads to smaller orders and an increasing number of parcels. Almost automatically a large number of products is returned to retailers. The reasons for this are disappointed expectations, damaged goods, lack of product quality and long delivery times. There is a rule of thumb saying that 50% of orders that are not delivered within 7 days will be returned. However, this depends on the product category, e.g. clothing has a return rate of 27%, books of 15%, and software of 20%. This, of course, is a high amount of parcels which have to be shipped, handled, quality-controlled, reconditioned, stored or even thrown away. The identified smart practices are:

- ④ "Specialists" like LeShop offer a small but not very deep assortment which only interests certain people.

Depending on the chosen type, some logistical requirements are necessary. For example, the size of the warehouse, the used equipment, the location, the degree of automation, the use of an advanced demand forecasting system, the use of a logistics service provider or an own fleet have to be considered.

- ④ Deliver products fast to the consumer in order to avoid returns at all. This has the highest potential to save expenses.
- ④ Build a separate reverse logistics system in order to handle returns without disturbing the outbound processes. This is also necessary to ensure efficient return handling and an inventory movement taking into account returned products. These returned goods should go straight into the selling cycle. Appropriate software with a forecasting feature might be helpful.
- ④ Provide return slips, the consumer can easily stick on the parcel, preventing high numbers of unstamped parcels.
- ④ Offer the opportunity to return products to a shop or a collection point like gas stations. These shops act as a consolidation point. The advantage is that the own logistics service provider can stop at one location this way reducing stop times.

Levelling & Bundling

Levelling means any efforts to dampen peaks or balance capacity thus ensuring a continuous flow of goods. Distance Selling is known for its huge order peaks on Christmas and Sundays after TV spots. In peak times order volume growth rises up to 200%. Out-of stock situations are the outcome. Identified smart practices are:

- ④ Consolidate different products in one parcel reducing handling and shipping costs. However, the lead time can be longer. The consumer has to wait longer for the products. Nevertheless he receives all products in one parcel and does not need to go to the post office several times.
- ④ Store often purchased products geographically near the consumer. This reduces lead

time as the consumer receives the products earlier. Expensive shipping costs from one warehouse to another do not occur anymore.

- ④ Charge different shipping costs for different shipping times. Often a consumer wants products within 24 hours. Of course, this is more expensive than a regular delivery. Therefore the consumer has to pay a higher charge than for a standard delivery service.
- ④ Use the same logistical system for all sales channels ensuring economies of scale due to a standardized Back-End.
- ④ Connect order entry and the warehouse to discover out of stock situations quickly. Also, fast replenishment has to be ensured.

Quick Overview on Selected Practices

Illustration 26: Overview on Selected Practices in the "Distance Seller" Scenario
Source: ECR Europe Consumer Direct Logistics Study 2002

	Major implications on		
Build Up Consumer Loyalty & Brand name	Time	Cost	Quality
Offer features like 'all product' search and a 'one stop shopping' opportunity to provide a positive shopping experience	😊	😊	😊
Choose the Right Partner	Time	Cost	Quality
Partner with other companies to provide a broad assortment	😊	😊	😊
Look for qualified logistics service provider	😊	😊	😊
Choose the Right Assortment	Time	Cost	Quality
"Allrounder" like Otto	😊	😊	😊
"Category Killer" like Amazon	😊	😊	😞
"Specialists" like LeShop	😊	😊	😐
Handle Returns efficient	Time	Cost	Quality
Avoid returns in the first place	😊	😊	😊
Build separate reverse logistic system and try to bring back the returned goods in the picking & packing cycle	😊	😊	😊
Provide return slips	😊		😊
Offer the opportunity to return product to a shop or collection point		😞	😊
Levelling & Bundling	Time	Cost	Quality
Consolidate different products in one parcel		😊	😊
Store often purchased product geographically near the consumer	😊	😊	😊
Charge different shipping cost for different delivery times	😊	😊	😊
Use the same logistical systems for all sales channels	😊	😊	😊
Connect order entry with the warehouse	😊	😊	😊

4.2.5 Managing By Numbers

During the project it was not possible to collect enough data from companies that operate in this scenario to do serious estimations on costs. But from the previous description of the Distance Seller scenario it can be said that this scenario is very much related to the traditional

mail-order business. Therefore, numbers from mail-order companies can be used to imagine the costs. The main cost driver of the logistics system is incurred by warehousing. Some numbers from a typical mail-order company are presented in the following table.

Illustration 27: Typical Figures of Warehousing for Traditional Mail-Order Services
Source: ECR Europe Consumer Direct Logistics Study 2002

Cost blocks	Numbers
Intake; Goods receiving	- 100,000 – 120,000 pieces per day (appr. 5,000 cardboard boxes clothes and shoes; mostly pallets)
Warehouse structure	- Tray storage system: 130,000 capacity; Performance: 11,000 movements per day - Pallet storage: 5,000 capacity; performance 300 movements per day - Bulk storage: 6,000 capacity
Picking	- 55,000 orders per day → 100 – 120,000 pieces
Packing	- Automated Packing: 25,000 orders per day - Small pieces packing: 2,000 orders per day - Single packaging: 26,000 orders per day

The table shows that the fixed costs are very high in this scenario because warehouses and equipment have to be set-up in advance. Therefore, companies who operate in this scenario have to bear this in mind. For an universal Distance Seller an own warehousing system is necessary

to control this process. The amortization of this investment will be faster.

A niche player on the other hand is probably better advised to use a logistics service provider as costs will be much lower compared to setting-up an own warehouse.

4.3 SCENARIO 2: THE "LOCAL HERO" IN DETAIL

4.3.1 The "Local Hero" Scenario Characterized

Today typical players of the second scenario are retailers complementing their existing business with the new channel of Consumer Direct operations ("Bricks and Clicks"). The pioneering "pure players", who only operate without physical stores in the Consumer Direct Business, decreased in number, but some still exist and are even successful. Local Heroes only focus on high density areas as target markets. Their operation platforms are usually located within these areas or at least close to them. Thus they serve their consumers "from within" by order based delivery tours into these areas.

Typical "hardware" modules that characterize the Local Hero are Web Shops and/or Call Centres as Front- End to enable consumers to place their orders. One or more store locations, dedi-

cated warehouses or Cash & Carry Markets where the ordered shopping basket is picked and collected and an (own) fleet of vans for the delivery tours to the consumer is available. The assortment at least covers the essentials of a comparable brick and mortar consumer market. The typical number of Stock Keeping Units (SKU) is 2,000 to 40,000. Orders are normally delivered within the next day(s) after ordering to the consumer's doorstep or any other address specified by the consumer. Most Local Heroes charge a delivery fee for their services but often delivery is for free when the shopping basket exceeds a certain amount. Typical companies of the Local Hero Scenario are, Capraboacasa.com, Tesco.com, condisline.com, Hausfreund.at, Ica.se, Iceland.com, Kaisers.de, Coop.com, Otto-supermarkt.de.

Illustration 28: Characterization of the Scenario "Local Hero"
Source: ECR Europe Consumer Direct Logistics Study 2002

Products offered	Packaged dry goods (normal handling)	Fresh/chilled/frozen goods (special handling)	Additional services		
Breadth of assortment	Broad			Limited	
Point of use service	None	Returns	Information services	Physical services	
Point of delivery	Pick up at the store	Intermediate locations	Office delivery	Attended home delivery	Unattended home delivery
Area of operation	Local	Regional	National	International	
Delivery time	Next day plus non definite	Next day, time definite	Same day	Less than two hours	

4.3.2 Typical Role Play in the "Local Hero" Scenario

The typical role play is dominated by the local delivery providers themselves, handling most of the process steps on their own. Until now there are hardly any implications to the Back-End i.e. the manufacturer, except for the updates of product information in the (web) catalogues. Third parties play a role

on the "last mile" to the consumer to some extent by operating as subcontractors in delivery or as financial service providers supporting financial transactions like invoicing or credit card payment. In cases where Cash & Carry Markets are the source of supply for "pure plays" they may also be operated by a third party.

Illustration 29: Typical Role Play in the "Local Hero" Scenario
Source: ECR Europe Consumer Direct Logistics Study 2002

Process Level 1	Process Level 2	"Roleplay"		
		Local Hero	Logistics Service Provider	Financial Service Provider
Info Flow	Need Stimulation			
	Order Entry			
	Order Processing			
	Order Assignment			
Physical Flow	Picking and Packing			
	Merging			
	Last Mile			
	Point of Use Service			
Reverse Flow	Receiving			
	Inspection			
	Reconditioning			
	Restocking			
Payment Flow	Invoice			
	Remittance			
	Payment Processing			

4.3.3 General Keys to Success in the "Local Hero" Scenario

To succeed in the Local Hero scenario a number of key challenges have to be considered. Some are more of general nature some are more important from a logistical point of view. Tesco's concept e.g. is said to work due to the

high market share of Tesco in the UK, the fit of assortment with the target group and due to the typical shop layout supporting the logistics model applied by Tesco.com.

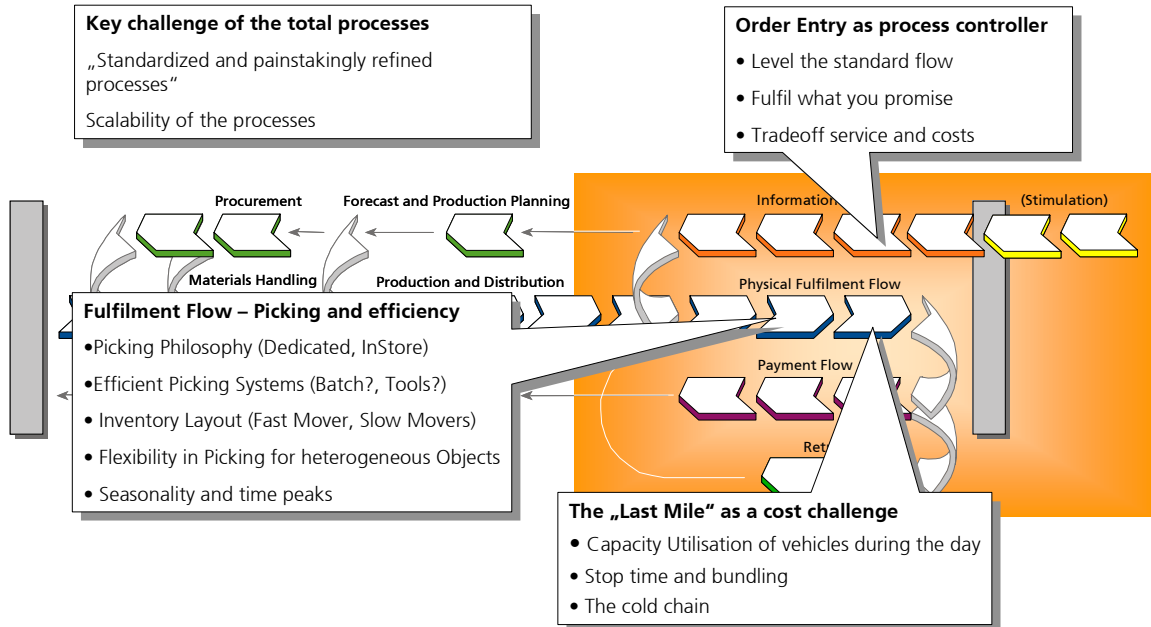
Choosing and "Teaching" the Right Market and Target Groups

One major challenge is to choose and "teach" the right market and target group for your business. As this is mainly a marketing issue instead of a logistical issue we will not focus on it in detail. But some considerations on this general challenge are shown as follows:

- ④ Focus on cities with at least more than 500,000 inhabitants to get the chance of a sound market share
- ④ Start by focusing on Double-Income-No-Kid (DINK) -households, but be aware that DINKS can cause delivery problems because they are usually not at home during the day.
- ④ Compared to the classical mail-order business there is a new and interesting time window you should offer between 8 pm and 10 pm.
- ④ Continue with housewives and elderly immobile persons to balance capacity during day time especially if your Front-End allows easy access for the later group. But consider that easy to use Front-Ends like Call Centres can be very expensive.
- ④ Case studies also show, that good branding, marketing and incentives may move people who are not typically Internet affined to their first and continuing Internet experience.
- ④ An assortment suited for the target group yields higher margins. Typically the highest profits are generated with a small share of the total variety of products.
- ④ Development and layout of the Web Shop should be tailor-made by specialists to allow them to concentrate on their core competencies but be aware that updating your (web) catalogue is vital to your business (also see special implications on information systems and integration in the part concerning supporting concepts).
- ④ Use your service as a marketing panel for manufacturers to add additional money, to increase the content of your page and to define a sound starting point for further collaboration with manufacturers (**"This is our business too"-approach**).

4.3.4 Logistics Challenges and Smart Practices for "Local Heroes"

Illustration 30: Keys to Success - Challenges for Logistics in the "Local Hero" Scenario
Source: ECR Europe Consumer Direct Logistics Study 2002



Scalable, "Standardized and Painstakingly Refined Processes"

Complexity and unbalanced processes drive costs and reduce quality. Any exception causes extra handling efforts which are cost intensive and time crucial. Lean, repetitive processes are managed more easily. Some companies even go without TV spots although they spots increase order entry significantly. However mainly on the days of the broadcasting which causes the standard fulfilment system to burst the next day.

- Successful companies apply standardized processes wherever possible. They avoid exceptions caused by price differentiation or extra fees (**no free lunch approach**) and allow for individualization as late as possible in the processes. It seems possible to train consumers to the standards and so to stress the value of the own service and

also to separate wishes from real needs. In total, costly substitutions are or troubleshooting is reduced from the beginning.

- It pays to enrich standard processes and the power of Information Technology by human brain power. So provide platforms that allow the use of work force experience, e.g. call centre personnel and drivers could be the only human interface to the consumer. Their experience (e.g. big potatoes or small potatoes) may help meet the consumer's real "hidden" demand. Pickers usually increase their efficiency by repetition (Learning Curve). The Driver's daily experience support tour planning at its best.
- Scale up with the market and take one step at a time.

Don't Byte More Than Your Logistics System Can Chew At a Time

The Front-End is the major lever to control your logistics flow and an effective tool to level out your processes from the beginning as well as to keep processes standard as long as possible.

- ④ Successful companies identify consumers (via cookies, log-in etc.) in the beginning of the shopping transaction and provide individualized (region; consumer demography) catalogues. E.g. alcohol could be prohibited on specific days, times or during specific delivery windows; or for people without specific permission. In some regions only a reduced assortment might be offered.
- ④ Delivery time slots are defined and the number of accepted orders per time slot is limited according to fulfilment capacity even if that means losing orders for the moment. Negative side effects can be reduced by displaying available delivery capacity per time slot and delivery day, on the Front-End. Scarce resources are appreciated more than free ones. Active stimulation of the consumer by incentives like reduced delivery fees

could convince them to make use of delivery options which help optimise logistical processes.

- ④ When the number of rejected orders per time slot grows, capacity is scaled up accordingly. The total process i.e. picking and delivery has to be adjusted to keep overall capacity balanced thus avoiding new bottlenecks.
- ④ Bulky or other hard to handle products are offered to complete the assortment, but at no special price ("placebo"-effect). With increasing maturity of the business pricing models could work to "level" consumer's wishes. "Urgent orders" are usually less urgent if consumers have to pay for the express service.

In consequence consumers order earlier to get their desired time slots, or change to other time slots thus helping to level capacity during the day. This simplifies capacity planning. Retailers promise what their system is able to fulfil and are therefore able to reduce out-of-stock situations and irritated consumers.

Stimulate Your Business Using the Web Shop and Other Channels

- ④ Successful companies also use other marketing channels besides the Internet. The sole Internet market is too small and not focused on the local market; (**web is not everything approach**). They use existing businesses to support Consumer Direct Business (**boost from bricks approach**) and thus cross sell. This not

only helps to earn a reputation as "Local Hero" in Consumer Direct operations faster, but also active marketing efforts are applied to acquire new interesting target groups and to increase density in delivery tours by targeting specific areas and streets.

- ④ Some successful companies allow order placement via Call

Centres, Fax and Internet (**"Internet-market is not big enough" approach**) while others only apply the Internet as Front-End due to the fact that catalogues and Call Centres are very expensive. The right decision is due to the specific development of the companies and market strategies as well as the strength of the established brand. Taking into account that up to 80 % of the orders come in via fax/phone if you provide this opportunity, it could be the way to develop your market faster as well as to address additional target groups. By applying incentives and special assortments only available via web page, consumers can be pushed to the Internet later on.

- ④ "Shopping-lists" with former orders ("replenishment" idea: "Last time you also had...") are offered and consumers are actively stimulated on the basis of these lists: "people buying this also bought ..." ("Amazon approach"). So repeated shopping for consumers is eased, shopping baskets are increased and consumer loyalty is supported.
- ④ Product catalogues for simple download or - more mature but also more costly offline versions of the Web Shops are provided. Due to this consumers get the opportunity to choose offline and only go online to transfer the chosen shopping basket. This results in increased convenience to consumers with limited extra costs and reduced traffic congestion on your web site.

Cooperate With Manufacturers to Update the Product Database

The update of (web) catalogues is vital for the sound presentation of offered products and services. For the retailer this is typically a duplicate, labour intense and expensive process step as manufacturers marketing and packaging development departments have the necessary data e.g. lithography and information anyway. In addition to this, manufacturers could use the presentation to support their brands and to provide nutritional information and other legally required information best.

Nevertheless some retailers still scan products and update their picture database on their own. In some more mature cases the producers provide pictures for the catalogue and nutritional

info. The seemingly most mature practice where producers update pictures in the catalogue and nutritional information is hardly converted in practice. Practices where manufacturers do the updating of product illustration and information on their own, should include (see also the ECR report on Integrated Suppliers):

- Access (e.g. via Internet) to retailer's database of product specifications
- Commitment to dead-lines of all partners involved
- Defined responsibilities of the parties involved
- But most of all agreed upon standards e.g. file formats to avoid multiple efforts by

manufacturers. This crucial matter is addressed in detail by the Global Commerce Ini-

tiative (GCI) and not discussed any further in this report.

Picking Locations - Choose Picking Locations According to Strategy

Order- Picking stands for one of the major cost blocks per order fulfilled and makes up to 50 % (or more) of fulfilment costs per order. The picking of small quantities is not only a new challenge for both retailers and manufacturers, but also characterizes a learning process for the work force as well as for the process designers. Recently an intense debate was held mainly on the "right" picking philosophy. The

essence of this debate was, that the picking strategy is influenced by and influences total commitment to Consumer Direct, Scaling Up Plans and Market Development Policy. Therefore no best practice exists, but there are a number of pros and cons for both generic philosophies. The supporting decision has to be made in regard to each company's specific situation.

Illustration 31: Pros and Cons of Store Picking and Picking from a Dedicated Warehouse
Source: ECR Europe Consumer Direct Logistics Study 2002

Picking from Existing Stores Pros and Cons	Picking from a Warehouse Pros and Cons
- Basic utilization of existing businesses - Full store range available to consumers - Store personnel is used to create synergies - Less additional investment - Fast geographical roll out when successful - Limited risk	- Capacity is fully scaleable - More efficient logistic processes (scale effects and technology) - Dedicated assortment for Consumer Direct; thus product availability easier to manage - Product quality better (less handling; effective temperature control) - Productivity easier to monitor/control; less overhead management - Easier to get planning permission for warehousing then retail
- Capacity is constrained by existing businesses - More complexity with growing businesses - Cannibalism of resources - Stock control more difficult and thus less Out-of-Stock transparency - Pickers inconvenience store consumers and queue in waiting lines - Competition on inventory	- Higher investments - Utilization is more cost effective - Range likely to be smaller - (9,000 lines vs. store 25,000; max 15,000 pallets) - Usually longer ways to consumers

Continuous Refining of Picking Methods and Equipment

Successful picking technology is still low tech today and most of all characterized by a continuous learning process, adjusting picking step by step, to the company's specific capabilities and necessities. Normally pickers go to the goods but with increasing volume and maturity new picking technology like pick-to-light or pick-to-belt as used i.e. by players in the Distance Seller scenario could also work.

Common practices applied by successful companies are:

- ④ **Batch Picking:** Handling more than one consumer's order at a time and thus reducing the set up time per picking transaction;
- ④ **Wave Picking:** Sending pickers into the warehouses in waves
- ④ **Zone Picking:** Picking separately from different departments while final assembly takes place in a back room of the stores or in the loading areas of warehouses. During zone picking perishables can be kept stored in temperature controlled areas until they are loaded to keep the Cold Chain. Zoning also implies smaller picking areas per picker (Less SKU, shorter routes) allowing pickers to "ride" on the Learning Curve.
- ④ When picking within a store the order schedule for every department should be prepared in the beginning of each day/shift with the exact due time for collection. Each department is then responsible for the completion of the order until this time (Internal demand transparency approach) By the use of the intelligence of the work force, capacity is balanced, and productivity is increased in the departments by using synergies of idle time as well as the reduction of waiting time for pickers in store.
- ④ To merge picks from different zones different boxes are used and each box is labelled with consumer's name, the order number, the number of the box and the total number of boxes per consumer.
- ④ Typically, picking Trolleys for boxes are used to pick more than one order in one picking cycle. Barcode-Scanning is applied to confirm that picked items are on the pick list. In more mature companies wireless touchpads not only show optimised picking routes and pick lists, but also give additional information on the handheld device like chosen substitution policies (see out of stock) or specific remarks on the product selection of consumers.
- ④ Order picking in the store or Cash & Carry markets could be done during business hours to make use of the store personnel capacity thus being able to increase productivity by realizing synergies in the daily work of the store personnel. When scaling up store picking could cause more confusion than synergies however so that the separation might be appropriate to not inconvenience store consumers. Overnight picking

in the store or Cash and Carry Markets may solve the problem. Some synergies still remain in the replenishment of store shelves. But experience shows that overnight picking is less productive than picking during the daytime in the store due to the decreased "surveillance" of the work force by consumers.

- When picking from a dedicated warehouse the standard

Handling Out-of-Stock Situations

Out-of-stock situations are always drawbacks to the shopping experience of consumers and have to be handled in a satisfactory manner for consumers. In some cases this may imply costly troubleshooting for the service provider. Best practice is surely to avoid out-of-stocks from the beginning by only offering what can be fulfilled (see above).

- Some companies call consumers in case of the out-of-stock situations and ask whether a better product may substitute the original order (**Overkill-approach**). Others already ask the consumer to agree on a substitution policy during order placement (e.g. "other product same brand"; "same product other brand"; "do nothing, call me") and convey

products from the warehouse may be complemented with more exotic and fresh products sourced from a partnering local store or Cash and Carry Market and merged to the shopping basket ("transshipment approach"). This keeps the standard fulfilment process running as long as possible and increases service quality by offering very fresh products.

the substitution policy to the picker (**substitution-list approach**).

- Other companies doing store picking replenish out-of-stock products from central warehouses overnight and merge them with the consumer's shopping basket in the second picking zone thus avoiding out-of-stocks. The requirement to convert this in a cost efficient way is to be a mature business with high level volumes (typically supported by the established brick and mortar businesses) allowing daily replenishment and flexibility left over in the Back-End system to cope with the extra handling of the replenishment process.

Driving - Capacity Utilization and Bundling as Keys to Success

Next to picking, driving represents the other major additional cost block of home delivery operations. Keys to success and thus major challenges for overall success in these operations are bundling and capacity utilization. Stop-time is the sum of driving time and hand-over time. Hand-

over time (see below) is fixed while driving time depends on the density of the stops i.e. the closer the consumer locations the shorter the driving time.

To meet promised time windows driving capacity as well as vehicle capacity, which is limited, are needed. Vehicle capacity could

be a constraint when long tours with numerous orders have to be fulfilled. On the other side due to consumer shopping behaviour, the utilization of the vehicles varies during the day. Typically there are peaks in the morning and evening time windows and idle capacity exists in the afternoon (see the above chapter 1.2.2). Utilization problems may also arise from the split capacity of the vehicles due to the use of different temperature zones. So it may happen that e.g. the "frozen zone" is over capacity in the summer time (ice cream) while the "dry zone" has idle capacity. However, practice shows that in most cases delivery capacity is limited to the limited number of stops per time window so that vehicle capacity is not a major restriction.

- ④ One applied practice dealing with the matter of utilization is to partner with Logistics Service Providers that have competences in household delivery (subcontractors) instead of investing in an own fleet of vehicles; thus buying "remission" of capacity utilization issues by the price of margins for the LSP.
- ④ Depending on the size of the business there could be opportunities to combine one's own equipment, e.g. a vehicle fleet, with the additional capacity of franchise partners and service providers to cover capacity peaks and thus gain opportunity to "breathe" with demand. Some logistic service providers e.g. parcel drivers typically use their vehicles only during the day and have idle capacity in evening

hours. Problems may arise due to necessary vehicle equipment and because of issues like corporate identity (drivers uniform, logo on the car) as well as the loss of valuable information about consumers.

- ④ In reality different temperature requirements are not a problem. Even low tech equipment like Iso-Therm vans used for delivery as well as isolated boxes seem to cause no problems for the distribution of frozen goods or perishables even in Mediterranean countries like Spain.
- ④ Some companies equip their vans with standard caravan fridges, which get their power from the cigarette lighter. Either way isolated boxes and fridges can be used in additional vans e.g. that of LSP very easily. But they require batch-picking of perishables at the market and additional order-picking at the consumer's door by the driver, to solve the packaging and storage problems.
- ④ Also vans exist that are equipped with three different temperature zones. In this case picking is done into a separate box per consumer (see zone picking) and per temperature zone and labelled accordingly for fast merging on the doorstep (consumer name, box x of total boxes y- label on each). Three temperature vans could cause capacity problems when one sort of product exceeds the others significantly (e.g. frozen goods in the summer time).

Loading and Handing-Over Time Drive Costs at the “Last Mile”

Stop time is a critical driver of the fulfilment cost in the Local Hero scenario. Part of the stop time next to the driving time is the handing-over time at the doorstep of the consumers. To be successful, handing-over time has to be minimized .

- To reduce handing-over time some companies require the driver to load the vehicle exploiting his knowledge and experience. “Who loads knows how to unload at the doorstep” (**UPS approach**). This practice also supports service quality as the driver represents the direct personal interface to the consumer. The driver could also act as a messenger of hidden consumer preferences (consumer x always prefers big potatoes).
- To be cost efficient additional activities have to be limited to the standard. Handing-over is typically done at the consumer's doorstep. When consumers are not at home during the agreed delivery time a sticker is left at the door with the driver's or call centre's phone number to arrange a second attempt. Handing-

over to neighbours is not recommended due to lacking proof of delivery.

- Some companies do not offer cash payment to reduce the handing-over time to keep processes lean and thus to keep handing-over time short. Other companies mostly “pure players” only allow payment by cash or cheque. In general the best payment method depends on the background of the provider of Consumer Direct Operations. Companies with traditional stores seem to prefer credit card payment to attain the advantages of secure payment, companies with Distance Selling experience prefer invoicing, while “pure plays” seem to prefer cash payment thus avoiding investments in bookkeeping and fees for financial service providers, which have to be paid for by traditional store players anyway. In all cases payment (invoicing) is usually not triggered before shipping is initiated, i.e. the shopping basket is picked and the final receipt is created.

Returns don't matter, Empties do - The Consumer Interface

In the Local Hero scenario returns are not a problem. Packaged goods are returned by the driver while damaged or wrong grocery products are not taken back, but refunded to consumers generously to avoid costs that would arise with the special handling.

- The simplest practice for handling empties is the refund in

cash by the driver. To do this the driver has to be supplied with change money when the tour starts. He then collects empties and returns them with the remainder of the change when the tour ends. Empties are then brought into the standard system for empties of the company.

- A more mature but also more costly alternative is to equip drivers with a handheld teller system allowing them to print receipts on the consumer's doorstep. In this case the control on refunds and empties is increased but as well the handing-over time

Despite cost issues and efforts to reduce handing-over time, it has to be kept in mind that the driver, as the interface to the

consumer is the key to the acceptance and uniqueness of the service. Consumers probably won't accept more than one home service a day so brand names and their reflection of corporate identity on the vans and driver's outfits may support consumers' loyalty significantly; or as the founder of the Hausfreund, (the Housefriend) in Vienna says: "Who is let in by the housewife? ... The housefriend".

Quick Overview On Selected Smart Practices

Illustration 32: Overview on Selected Smart Practices in the "Local Hero" Scenario
Source: ECR Europe Consumer Direct Logistics Study 2002

	Major Implications on		
Choose and teach the Market and Target Groups	Time	Cost	Quality
Start with easy to access target groups and markets; develop others as well; adjust your assortment to the Consumer Direct shopping format; avoid exceptions to your standard operations e.g. charging extra fees (no free lunch) wherever possible	😊	😊	😊
Scale up with the Market and refine your Processes step by step taking One Step at a Time	Time	Cost	Quality
Apply standardized processes wherever possible	😊	😊	😊
Enrich processes and IT with human brain power by providing platforms to use the experience of the work force	😊	😊	😊
Don't bite more than Logistics can chew at a time	Time	Cost	Quality
Identify consumers in the beginning of the shopping transaction and provide individualized catalogues	😊		😊
Limit accepted orders per time slot to your capacity even if it means losing orders for the moment		😊	😞
Show available delivery capacity per time slot and delivery day on your Front-End		😊	😞
Stimulate consumers to use delivery options which help optimize logistical processes by providing incentives		😊	😊
Scale up the whole logistics system's capacity accordingly when rejected orders per time slot grow		😊	
Bulky or other hard to handle products are offered but not promoted with special prices (placebo effect)		😊	😞
"Level" consumer demands using pricing models (urgent orders are less urgent when charged extra)		😊	😞
Stimulate Business using Web Shops and other Channels	Time	Cost	Quality
Use more marketing channels than only the Internet (web is not everything-approach) ; use existing businesses to support Consumer Direct Business (Boost from bricks approach);		😊	😊
Offer a "shopping-list" with former orders ("home replenishment" idea) and stimulate the consumer actively on basis of past or different shopping lists (Amazon approach)	😊		😊
Provide a product catalogue for simple download or more mature offer an offline version of the web shop	😊		😊
Cooperate to update Product Databases		😊	😊
Picking and Packing depend on Strategy and Maturity	Time	Cost	Quality
Prepare order schedules for each department in the beginning of each day/shift with the exact due time for collection Each department is responsible for fulfilling the order until	😊	😊	😞

this time (Internal demand transparency approach)			
Use Picking Trolleys with boxes to pick more than one order at a time in one picking cycle	😊	😊	
Use Barcode-Scanning to confirm that items are on the pick list			😊
Wireless touchpads show the optimised picking route, pick list, and chosen out of stock policy	😊		
Order picking in the stores or Cash & Carry during business hours using idle capacity of store personnel change to over night Picking in (store) or Cash and Carry markets when capacity is limited		😊	
Combine dedicated warehouses (standard products) to a local store or Cash and Carry Market (for more exotic and fresh products) "Micro level cross docking approach"		😊	😊
Utilization and Bundling drives Costs of Driving	Time	Cost	Quality
in case of out-of-stock call the consumer and deliver a better product (overkill)		😞	😐
Consumer agrees on a substitution policy when ordering; substitution policy is conveyed to picker (substitute)		😐	😞
Replenish out- of -stock products to stores via overnight replenishment from a central warehouse and merge with out-of-stocks in the 2nd picking zone		😐	😊
Utilization and Bundling drives Costs of Driving	Time	Cost	Quality
Buy remission of utilization issues applying Logistics Service Providers with competence in home delivery (subcontractors)		😐	😐
Combine own equipment (e.g.) fleet with additional franchise and service providers to cover peaks		😊	
Iso-Therm Vans allow delivery of perishables and frozen goods			😐
Normal standard van equipped with caravan fridge for perishables			😊
Trucks with three different temperature zones; Boxes (see zone picking) in each zone (n of m label on each)	😊	😞	😊
Loading and Handing Over Time	Time	Cost	Quality
The driver supports final assembly and loads his car himself (UPS approach)	😊		😊
Limit additional services on the doorstep to the minimum; apply payment methods that reflect the company's experience best	😊	😊	😐
Empties, payment affect the Handing Over Time	Time	Cost	Quality
No problems with returns (grocery products are not taken back, but refunded to the consumers)	😊		😊
Refunding empties in cash by driver	😊		

4.3.5 Managing By Numbers

The Basic Questions

Three key processes effect costs significantly: Order Entry, Picking and "The Last Mile". Companies acting as Local Heroes have at least to deal with the following questions in regard to these key processes:

- What is the average value of the shopping basket?
- How many positions does the average order consist of?
- What is the average cost of order entry?
- How much time is needed to pick one order?
- What costs per order does this imply?
- How much time is needed for the delivery of one order?
- What part of the stop time is for driving?
- What part of the stop is for the actual delivery?
- What costs per stop does this imply?

About Scalability

While some cost blocks are variable and their increase is directly related to the growing number of orders, others represent fix cost blocks. Cost performance measured as cost per order therefore depends on the reali-

zation of synergies and economies of scale. The table below shows the most important cost blocks and the basis on which economies of scale can be realized.

Illustration 33: Scalability Issues in "Local Hero" Businesses
Source: ECR Europe Consumer Direct Logistics Study 2002

Process Step	Cost Blocks	Fix or variable costs	Scales on
Order Entry	Web Shop; Order Routing	Fix	Orders/shop
	Call Center	Variabel	
Warehousing	Dedicated Warehouse (limited # of pallets -> less SKU than store)	Fix	Orders/period
	Store Picking (Max 2500 Orders/week)	Variabel	
Picking and Packing	Dedicated Picking Location	Fix	Orders/cycle
	Store Picking	Almost Variabel	
Transportation "Last Mile"	Own Fleet	Fix	Orders/tour
	Franchise/Service Provider	Variabel	
Delivery "Last Mile"	attended	Fix per Stop	Custom./deliv.
	Unattended delivery interface	Fix	Orders/custom.

Numbers and Cost Estimates

Based on publications, own calculations and most of all our interviews with the players of the Local Hero scenario the following numbers and estimates on some basic questions discussed above are provided.

In the table we distinguish between Store Picking und Picking from a dedicated warehouse and focus on the three core fulfillment processes from Order Entry and Administration via Picking to delivery and handing-over. Additionally we also take the costs of replenishment into account to some degree.

Looking only at the fulfillment costs from picking to handing-over. While regarding store picking, the picking makes up about 47 % of these costs while driving is responsible for about 51% Doing picking from the warehouse, picking costs are higher while driving costs are lower. In addition to this time estimations, for example an average picking time, are provided. Also considering the costs of replenishment of the store resp. the warehouse, picking from a store then accounts for about 26% of these operating costs and the delivery of the last mile for about 28%.

Illustration 34: Numbers and Cost Estimates
Source: ECR Europe Consumer Direct Logistics Study 2002

	Store Picking		Warehouse
Average Basket Size	About 70 € (UK higher)		About 70 € (UK higher)
Average # of items per order	65 - 80		70
SKU	5,000 – 40,000		2,300 - 4,500
Order entry, admin, others	2 %	1 %	similar
Picking Cost as percentage	47 %	26 %	Lower than store picking
Time per Order	35 – 40 minutes		25 – 35 minutes
Time per item	30 – 35 seconds		21 – 30 seconds
Delivery “Last mile”	51 %	28 %	Higher than store picking
Time per average order	30 minutes		30 – 35 minutes
Percentage of driving	Less than 50 %		Less than 50 %
Fulfilment Costs (incl. Order Entry, Delivery, Picking)	100 %		
Replenishment		45 %	
Operating Cost (incl. Fulfilment and Replenishment)		100 %	

4.4 SCENARIO 3: THE "PROBLEM SOLVER" IN DETAIL

4.4.1 The "Problem Solver" Scenario Characterized

Problem Solvers are high speed services delivering immediate gratification and impulse items as well as other necessities like grocery and household products needed just in time. Additionally they support the consumer with special services. The span reaches from bringing out hot meals and snacks, taking back video tapes or hazardous waste disposal up to dry cleaning or repair services.

The companies focus on speed and added value. Services are delivered in less than two hours or during the same day. Some specialists in the United States promise to fulfil orders in less than 30 minutes, 24 hours a day, 7 days a week.

Due to the high speed delivery cycle all Problem Solvers only provide a limited assortment – 2,000 up to 5,000 SKUs – and base their operations on distribution or fulfilment centres close to the consumer. Only one enterprise has been identified during

the study, co-operating with local shops and merging partial deliveries in the delivery van. To be as fast as possible, all types of vehicles are used: vans, cars and scooters. In large cities products are also often delivered by foot or bicycle in order to avoid traffic jams.

Problem Solvers support the consumer at home or at any other place he wants, if it is not too far away from the next fulfilment or distribution centre. Unattended delivery is very unusual due to the immediate gratification concept. Most companies started with a free service, but had to ask for a small delivery fee after a few months at the latest because of extremely low average shopping baskets and low margins.

The Problem Solving branch of CDL is, or better has been represented by companies and names like Sameday, Kozmo, PDQuik, Urbanfetch and Streamline.

Illustration 35: "Problem Solver" – Main Characteristics
Source: ECR Europe Consumer Direct Logistics Study 2002

Products offered	Packaged dry goods (normal handling)		Fresh/chilled/frozen goods (special handling)		Additional services
Breadth of assortment	Broad			Limited	
Point of use service	None	Returns		Information services	Physical services
Point of delivery	Pick up at the store	Intermediate locations	Office delivery	Attended home delivery	Unattended home delivery
Area of operation	Localized		Regional	National	International
Delivery time	Next day plus non definite		Next day, time definite	Same day	Less than two hours

4.4.2 Typical Roleplay in the "Problem Solver" Scenario

Illustration 33 describes the roleplay in the problem solving Consumer Direct Logistics. Five different types of enterprises take part in the operation:

- The Local Hero organizations described in chapter 4.3.,
- bakeries, butchers and other local shops
- special service providers for dry cleaning, repairs, etc.,
- local express services and
- financial organizations.

Illustration 36: The typical Roleplay in the "Problem Solver" Scenario
Source: ECR Europe Consumer Direct Logistics Study 2002

Process Level 1	Process Level 2	Roleplay				
		Local Hero	Local Shops	Service Provider	Express Service	Financial Inst.
Info Flow	Need Stimulation					
	Order Entry					
	Order Processing					
	Order Assignment					
Physical Flow	Picking and Packing					
	Merging					
	Last Mile					
	Point of Use Service					
Reverse Flow	Receiving					
	Inspection					
	Reconditioning					
	Restocking					
Payment Flow	Invoice					
	Remittance					
	Payment Processing					

There are two approaches to problem solving in the Consumer Direct Logistics segment:

The "Local Hero Upgrade"

Type one includes Local Heroes with a standardized next day delivery trying to fulfill the consumers orders the same day. There are no changes concerning the product portfolio and the

underlying logistics systems described in chapter 4.3. Only the service portfolio and the process organization are adapted as far as necessary.

The "B2C-Express Service"

Type two describes enterprises based on localized express services extending their business to support consumers with immediate gratification items and grocery or household products. While Local Hero upgrades are definitely on the lower end of the performance scale, b2c express services can be understood as high end service providers. Delivery of goods can not only take place the same day, but

also within a much shorter delivery window. Companies of this second type often cooperate with local small and medium sized shops and service providers. Only in a more mature state do they use smaller distribution or fulfillment centers near high density consumer areas. Unfortunately this state of higher maturity is sure enough rarely reached.

4.4.3 High Speed Services – Flaws and Fallacies in CDL

A closer look at the Consumer Direct Logistics market and corresponding publications shows that particularly American CDL companies started high speed services in the last few years and tried to roll up the market with extremely high investments in some cases. Even Europeans experimented with this high performance type of home delivery service up to a certain degree. The following table comprises the date of formation and the actual state of Problem Solver enterprises, which are meanwhile very well known due to newspaper articles and magazines. A detailed analysis of the

existing material and extensive web browsing makes quite clear that most of them failed by now. The companies that remain on the market seem to be more typical pizza services than Consumer Direct Logistics operations. PinkDot serving the Los Angeles and Orange County area in the United States is a good example. If companies are not comparable to pizza services they are normally start ups like netkonsum and Lofex in Germany and, still not established in their market. The past has shown that it is really difficult to tell how long a start up service lasts in b2c E-Commerce.

Illustration 37: "Problem solvers" – the actual state
Source: ECR Europe Consumer Direct Logistics Study 2002

Company	Kozmo	PinkDot	Sameday	Urbanfetch	Netkonsum	Lofex	Streamline
Founded	1997	1987	1999	1999	2000	2000	1993
Status	Closed	Existing	Closed	Closed	Existing	Existing	Closed

For further discussions it could be useful to know the potential

reasons why previous operations were not successful:

- Some experts say that in the past the market for high speed delivery and the potential delivery density have been highly overestimated. There is a very controversial discussion on that issue, but it is generally agreed that high speed services promise more success in large metropolitan areas.
- Previous high speed services did not provide real added value for the consumer. For example it is not very valuable for managers to be supported by their favorite ice-cream during a meeting. Other things are much more important in such a situation.
- There is a strong competition in the market for immediate gratification items, hot meals and snacks. Problem Solvers have to struggle with gas stations, convenience stores, pizza delivery services and other home delivery companies with a limited but, for an average consumers sufficient assortment.
- Missing scalability has been another problem. PinkDot, a meanwhile very well established American high speed delivery service had built up loyal followers and had achieved profitability. The attempt to expand extremely fast nationwide in the year 2000 was stopped last year due to low sales volume and high investment needed. The concept has not been scalable. Some experts say that the Internet and the instant gratification concept may not be ready for one another and that the mass market is not really prepared to pay the substantial premium that is necessary to support Problem Solvers' operations.
- There are some other more general reasons for failure which have already been mentioned: often expansion is too quick in an intransparent market with extremely low profit margins. Investors are getting more and more curious whether companies are able to provide the necessary return on investment. Consumers are often unsatisfied due to missing painstakingly tested and refined processes.

4.4.4 General Keys to Success in the "Problem Solver" Scenario

General keys to success can be deduced directly from the flaws and fallacies made in high speed delivery operations. Four main keys have been identified during ECR Europe's Consumer Direct

Logistics project: value added services, Information Technology, the right choice of products and services and the right choice of consumer segments.

General Key 1: Create Value Added for the Consumer

The first and most important key to success is the creation of a significant added value for the consumer. An analysis of publi-

cations on Problem Solver operations provides some ideas:

- ④ Bundling delivery services for pizza and specialties from other cultural areas could provide additional value. Today such services are only available separately.
- ④ Enhancement of next day delivery with return options relieves the consumer from additional and time intensive trips. Disposal of hazardous waste like batteries or the return of video tapes is often a burden to the consumer.
- ④ The offering of refinement services like shoe repair and dry cleaning might also be valuable for certain households. The more the consumer is relieved of various short trips to shops and service providers the more a CDL service will be accepted.

General Key 2: IT

Problem Solvers can only win if they provide comprehensive and value added services described in the last passage. The resulting high complexity of the organisation requires a sophisticated and automated information system that processes orders, deliveries and inventory in real time, regardless of whether transactions are made by phone or Internet. It has to integrate or connect the consumer, the Consumer Direct Logistics provider, the delivery drivers, distribution centres, local shops and additional service providers as well in order to support real just-in-time processes between all these players.

It is quite clear that all of these players have to be equipped with a proper IT-interface. While big-

- ④ Last but not least context and situation specific services will bring huge additional value to the consumer. Being supported by video tapes, a proper dinner, wine and potato-chips after a hard working day is just one example you can think of.

Overall the main target of a Problem Solver in the CDL segment of the home delivery market should be to relieve the consumer of all these short, time costly trips to shops and special service providers that make life so much less comfortable and to meet the so called ad-hoc-requirements that characterize the modern consumption focused society comprehensively and in a timely fashion.

ger companies usually use complex high cost information systems, especially smaller shops and associated special service providers cause major problems. They are often not able or prepared to invest much in IT and badly need low cost plug-in data terminals. Local bakeries, butchers and florists normally don't have online computers on their cash desks.

Concerning IT there is a second critical issue: You can't buy IT-systems that integrate the whole service network "from the shelf." You have to use proprietary software tools to deal with orders in a timely fashion. Professional information systems for Problem Solvers might therefore become extremely expensive.

General Key 3: Choice of Products and Services

Most of the operations that are now gone had problems with the right choice of products and services. Selling cheap products like potato-chips and coke is critical because of the extremely low profit margins provided by these products. Nobody is willing to pay a fee of five to ten Euro for the delivery of products or items that are of nearly the same value. Companies learned to increase the profit margin by changing the product types they

offered, for example from chips and chocolate to flowers and champagne. The problem is that there are not many expensive products that are instant gratification items at the same time. Most of them are bought less frequently and the market is much smaller. If you don't choose product and services very carefully, the character of your service might change from high speed delivery to standard b2c E-Commerce.

General Key 4: Choice of Consumer Segments

The last more general key to success is the right choice of the target market. There seems to be a strong correlation between different consumer segments and the services they ask for. Problem Solvers had to learn that it is not very profitable to provide the delivery of chips and coke and other low price products or services like purchasing video tapes for the lower and middle class consumer. Upper class persons have a more costly taste but are even more difficult to find and to satisfy their needs by creating real added value. Upper class

people need upper class services! For example you could offer the delivery of ingredients for a candlelight dinner to an upper class single in a rush. But if you are not able to provide a proper do-it-yourself kit including a detailed instruction sheet or a personal cook for the evening your service might fail. You have to improve your standard services thoroughly based on detailed knowledge about the habits of special consumer groups. Micromarketing is a good instrument to create that knowledge.

4.4.5 Logistics Challenges and Smart Practices

Four different challenges have been identified during research:

- Speed and excellent timing of physical delivery processes,
- 24 hour delivery services 7 days a week,
- return processes for example to video tape rental agencies
- and additional repair- and refinement services.

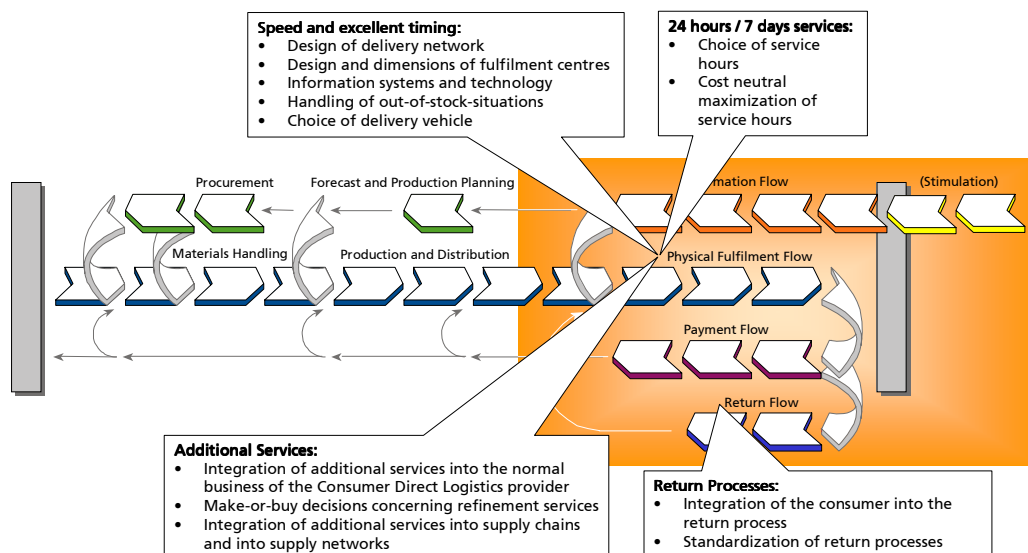
The following passages of the study describe these challenges and some corresponding practices. Since most high speed services already had to leave the market it is difficult to say whether the practices mentioned in this report are smart or even best practices.

Therefore the following list of practices should be understood as a simple accumulation of

ideas that might be useful for retailers and other companies trying to build up Problem Solver operations. It is a supplementary list. Since one of the Problem Solver types named before is

based on Local Hero services many of the smart practices that have been described in the last scenario could also work for some Problem Solver companies or services.

Illustration 38: Challenges in "Problem Solver" Operations
Source: ECR Europe Consumer Direct Logistics Study 2002



Challenge 1: Speed and Excellent Timing

Speed and excellent timing is the main logistics challenge in this scenario. Consumers are not satisfied if cold but originally hot snacks and wine are delivered one hour late or after the prime time film on TV has already started.

Smart practices that have been identified concern the design of delivery network, design and dimensions of fulfilment centers, information systems and technology, handling of out-of-stock-situations as well as the right choice of a delivery vehicle.

SP: Limit the assortment and storage capacity of distribution and fulfilment centres

Limited assortment and storage capacity reduces process time

and costs for picking and packing. If the distribution centre of a Local Hero organisation is used, it makes sense to pick and pack the high speed order in a zoned area. The products stored in the distribution or fulfilment centre resp. in the zoned area have to be chosen very carefully to avoid a decrease in quality.

SP: Adapt your type of delivery vehicle to local conditions.

Bicycles, motorized scooters, cars and limousines or vans and even pedestrians are alternatives. Choosing the right means of transportation at least reduces delivery time and increases service quality. Under certain circumstances there could also be a decrease in cost. Motorized

scooters and bikers could, for example, be the best solution for metropolitan areas with a high density of inhabitants.

Delivery time is then independent of traffic jams. Choosing the right transportation option is more important for b2c express services and less critical for the Local Hero upgrades described before.

SP: Support your delivery driver with innovative IT-systems

A well informed delivery driver is the guarantee for speed and timing. Independent from the type of transport vehicle the driver has to be supported with innovative Information Technology. This includes for example mobile phones, identification technologies and navigation systems, intelligent personal assistants, handheld devices for electronic micropayment etc. The quality of the service is improved, process time and costs are reduced.

SP: Make out-of-stock-situations transparent to the consumer

Out-of-stock-situations are more critical for the Problem Solver as they are in the two scenarios discussed before. If you let your consumer order an item or product you can not deliver in a timely fashion, he will be very upset. His problem is not solved! To avoid such situations you have to make out-of-stock -situations transparent to the consumer when he fills out the order form on your web page. But don't forget to offer alternatives in order to guarantee high service quality! Concerning cost and time. OoS-situations recognized after the ordering process

cause a lot of trouble. There are additional activities which are never paid for by the consumer: checking other sources, additional transportation, identification of potential substitutes and communication processes etc. It becomes quite clear that availability of inventory data during the ordering process saves a lot of time and costs.

SP: Use your Local Hero logistics system in case you focus only on same day delivery

If you only offer sameday delivery speed and distances are less critical. In that case you can utilize the shops or distribution centers already used for Local Hero operations. You'll meet the right service quality and minimize additional cost for the high performance service.

SP: Use shops near to the consumer for high speed delivery

If you try to deliver within half an hour your picking site has to be situated very close to the consumer. The ideal system structure is a network of small units with small square footage, smaller trade areas located in very profitable areas. In this case shops, gas stations or convenience stores in the neighbourhood of an area with high consumer density could be a good solution. There are some examples for convenience stores connected to fast home delivery services in Japan. You'll provide the highest service quality that is possible at the maximum delivery speed and minimize the capital input that is necessary.

Challenge 2: 24 hours / 7 days A-Week Services

One big difference between the first two scenarios and the Problem Solver is the fact that the Problem Solver has to offer the delivery service anytime the consumer wants him to do so. Two smart and maybe best practices have been identified:

SP: Do not forget that the bigger part of the market sleeps between 1 am and 7 am

It is not really necessary to keep the doors open 24 hours a day. Many high speed companies had to learn that. Often too late! Pink Dot for example, one of the few still existing Problem Solvers, closes shop between 3 am and 6 am. A 24 hours opening window means additional costs that are never paid for by the consumer. This insight could be responsible for the fact that Pink Dot is successful and still in the market.

Challenge 3: Returns

Offering return options is one possibility to create some added value for the consumer. On the other hand returns are costly.

Smart practices identified in the study concern the integration of the consumer into the return process and standardization.

SP: Support the consumer with drop boxes for returns

Therefore you should try to motivate your consumer to do at least a part of the return process willingly. The result is a distinct decrease in cost which has to be paid for with a minor loss of service quality. Kozmo, for example,

SP: Use gas stations and other convenience stores for picking and packing

In countries with opening hours which are regulated by law it might be a good idea to cooperate with convenience stores and gas stations to increase the quality or performance level of your service. Especially representatives of the second type sell typical and often required convenience or immediate gratification products all night and day and also during the weekend. Even the opening hours of convenience stores normally suffice the requirements of high speed delivery services. If nothing else works you can always build up a small fulfillment center near to the consumer.

had a cooperation with Starbucks Coffee and used drop boxes installed in coffee shops for the return of video tapes.

SP: Standardize return processes as well as the normal delivery

Connected with high speed services the fulfillment of returns has to be considered as a major key competence of the service provider. These processes need to be standardized in any case, even if they occur less frequently. Standardized returns are equivalent to reduction of cost and time. Quality is increased.

Challenge 4: Additional Services

The fourth challenge that has been identified in the study is to offer a broad variety of different products and services and make some suitable profit at the same time. In spite of the fact that this is really difficult the project team found some smart practices that concern integration aspects and make-or-by decisions.

SP: Do not forget Supply Chain Management principles while setting up an operation

The overall system is not a simple one-to-many distribution network like systems described in the Distance Seller and Local Hero scenarios. It is rather a complex structure with bi-directional material and information flows between multiple partners and consumers. High speed delivery services play the role of an integrator, aligning a huge variety of different services trying to add some value for the consumer. Therefore Supply Chain Management ideas and principles like time compression and modularisation are extremely important and should not be forgotten.

SP: Separate your standard home delivery service clearly from the high speed alternative

Distance Seller, Local Hero and Problem Solving Services are to-

tally different. This is true for the information as well as for the physical flow, for payment and especially for returns. Due to the low margin the high speed processes need to be controlled intensively. Separation supports controlling. Time, cost and quality will be affected positively.

SP: Outsource services like dry cleaning, film processing or repairs to service providers

Some services like dry cleaning, film processing or repairs need special competence and sometimes expensive production or refinement tools. If you decide to offer them outsource services to bring the quality up to your standard. Outsourcing of production and refinement services keeps your own processes lean and simplifies standardization. The delivery of grocery products from a shop to a consumer is basically the same as the delivery of clothing from a consumer to a dry cleaning shop. Service quality is increased by competent partners and the complexity of the overall system is reduced. On the other hand outsourcing is critical as far as time and process costs are concerned due to the fact that it is difficult to speed up services provided by other companies.

Illustration 39: Overview on Potential Smart Practices and Implications
Source: ECR Europe Consumer Direct Logistics Study 2002

	Major Implications on		
Challenge 1: Speed	Time	Cost	Quality
Adapt your type of delivery vehicle to the local conditions	😊		😊
Limit assortment and storage capacity of distribution or full-filment centres.	😊	😊	
Support your delivery driver with innovative Information Technology	😊	😊	😊
Make out-of-stock situations transparent to the consumer	😊	😊	😊
Use your Local Hero logistics system in case you only focus on sameday delivery		😊	
Use shops near to the consumer for high speed delivery	😊	😊	😊
Challenge: 24 hours / 7 days a-week delivery	Time	Cost	Quality
Do not forget that the bigger part of the market sleeps between 1 am and 7 am		😊	
Use gas stations and other convenience stores for picking and packing			😊
Challenge: Returns	Time	Cost	Quality
Support the consumer with drop boxes for returns		😊	
Standardize return processes as well as the normal delivery	😊	😊	😊
Challenge: Additional services	Time	Cost	Quality
Do not forget Supply Chain Management principles while setting up a high speed delivery service.	😊	😊	😊
Separate your standard home delivery service clearly from the high speed alternative	😊		😊
Outsource services like dry cleaning, film processing or repairs to service providers.			😊

4.4.6 Transitioning to Profitability?

There is a very controversial discussion about profitability of high speed services and Problem Solver operations. While some specialists say "No, never!" an E-Strategy Report that has been published by Mainspring mentions that especially same day delivery has a good chance to achieve profitability. The follow-

ing passage summarizes some basic messages of the report.

The authors say that profitability depends on a number of different factors including order volume, customer density, gross margin per order and average order size. A first scenario is described by the following assumptions: gross margin of 32%, av-

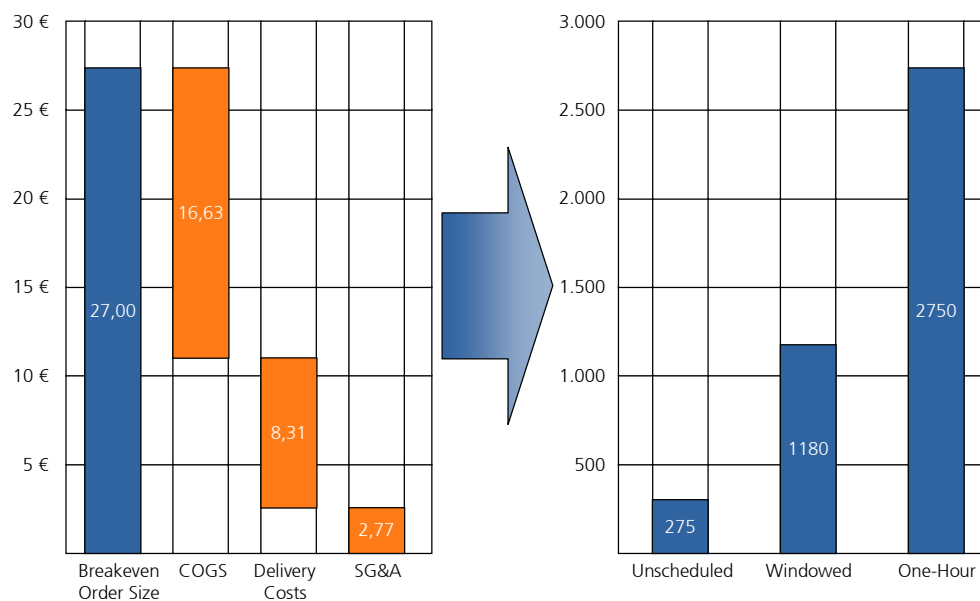
average order size approximately 27 €. With some additional assumptions concerning the number of deliveries per hour and the distance between stops, the order volume that is required to break even is roughly 100 orders per day for unscheduled delivery, 870 for windowed delivery and nearly 2,000 for a one hour delivery time.

Only taking delivery costs into account this might work in a large metropolitan area with 10 percent Internet penetration. Every Internet user would need to purchase goods using same-day delivery 0.4 times a year, 3.6

times using windowed delivery and 8.2 times using a high speed service that delivers within an hour. This seems to be feasible. If you take marketing and selling, general and administrative costs into account, windowed delivery might still work, the on hour delivery time alternative won't.

One possible solution to the problem is to increase the gross margin per order. Illustration 37 shows the break even order volumes for the three different delivery alternatives that have been estimated by mainspring assuming 40% gross margin.

Illustration 40: Order Volumes Required for Breakeven
Source: Same-Day Delivery – Transitioning to Profitability, Mainspring 2000



It is quite clear that it is very difficult to run a high speed delivery service on the typically paper-thin margins we find in grocery

segments of European economies. Some smart practices found in literature might help:

SP: Offer high speed Problem Solving services as a premium

Due to small markets, high competition and extremely low margins offering a value added and Problem Solving service is a very costly thing. Nevertheless it makes sense even for an established Local Hero because the company with the most comprehensive service wins the consumer in the end. The idea is to

SP: Use franchising to build up nation wide operations

The PDQuick case proves that building up a nation wide operation that provides Problem Solving Services is critical. Centrally organised operations are normally doomed if you try to run them in unsuitable neighbour-

SP: Service small areas with a high density of profitable shoppers

As said before speed is critical in Problem Solvers' operations. Therefore it seems to be a good idea to identify clusters of consumers with a high need for immediate gratification items. You can advise your delivery driver to distribute advertising material in the neighborhood. This practice could be understood as pragmatic micromarketing. Lower delivery costs and additional cost savings in marketing by avoiding postal fees are the result. Average stop time is also reduced be-

offer a high priced premium service which will be recognized and rated highly by the consumer. This however is rarely used. The consumer has to pay a lot for the increase in quality. A small amount of high speed orders each day doesn't seem to be critical and the only thing that really counts in the end is the fact that the additional high speed service is offered at all.

hoods. Franchising reduces the risk since franchisees know the local situation better. In this context franchising systems could be compared to automatically controlled systems. Additionally overhead and costs are reduced. A nation wide brand can be built up for marketing purposes.

cause of consumer accumulation in a restricted area.

SP: Let the consumer pay with cash or cheque

Due to small order volumes the overall price of a delivery is often extremely low. Therefore payment with credit cards during the order process is too expensive. Normally the driver takes cash or cheque. Another possibility to optimise the payment process is to use innovative micropayment techniques like paying via mobile phone. These new billing concepts are rarely used by now.

Illustration 41: Overview on Potential Smart Practices and Implications
Source: ECR Europe Consumer Direct Logistics Study 2002

Economic Aspects	Major Implications on		
	Time	Cost	Quality
Offer high speed Problem Solving Services as a premium			😊
Use franchise systems to build up nationwide operations			😊
Service small areas with a high density of profitable shoppers	😊	😊	
Use delivery driver for distribution of advertising material	😊	😊	
Let the consumer pay by cash or cheque		😊	

5 SUPPORTING CONCEPTS FOR CONSUMER DIRECT

5.1 STIMULATION OF DEMAND - THE WEB SHOP AND BEYOND

The Web Shop

The first impression of an Internet retailer that a consumer gets, is the **appearance** of the web shop. In the beginning, retailers used pictures of the products in addition to price lists to illustrate their offers. In recent years, web designers had the possibility to create animated and dynamic web sites. Often the “pure players” of the new economy only built their shops on visual excellence – instead of considering e.g. logistics. One of the best examples for a terrific boost is boo.com, which was re-launched last year.

It is essential to create a web shop which stimulates the consumer to stay and – most importantly – to make him come back. But what is essential? The design is not content of this study, so only some hints can be given.

The first two aspects, i.e. products and navigation, must be taken into consideration regarding the web presentation to provide the most important pieces of information about the products offered and to help the consumer navigate through the web site. Additional pieces of information and animations are less important. It is difficult to provide these features without overloading the presentation. So don't use web presentations that are too complex (not all consumers have a high speed Internet access respectively consumers don't like “labyrinths”).

Many possibilities exist to **interact** with the consumer, but it is not crucial to provide all of

them. Using mobile phones, paper-based catalogues or TV-spots to offer products sounds nice, but it is not proven that this generates more traffic. More important seems to be to guide the consumer through the shopping process, beginning with a search engine to find the desired article up to the paying process. One pioneer of this guidance is Amazon.

The companies of the old economy mail-order retailers like Otto have shown how to build a successful Consumer Direct Site. One aspect is, that they allowed consumers to **access** their shop over the Internet as well as via conventional media like telephone or fax, to order. With this strategy they generated new traffic through the Internet and kept former consumers.

In general it is advisable to provide all possible channels, over which a consumer can reach the specific shop. Then the target group should be considered. Therefore shops should think about a Mobile Commerce (M-Commerce) site. In this case a special web shop should be built. But as in every business model the retailer should try to convince the consumers to only make use of communication via Internet because it is more cost effective.

The next aspect concerns the **authorization** to reach the shop's personal web sites. The first web shops didn't offer personal information to the consumer. Then some retailers and Internet com-

panies provided access to personal information employing username and password. In the last years the cookie based identification – and authorization – to personal web sites was introduced. The first efficient user was Amazon who greeted the consumer with his name etc. on every visit. The next steps in the development were the certificate based access (digital key given by a certification centre and saved on a hard-drive), the smart card (digital key given by a certification centre and saved on a plastic card, which can only be read by special equipment) and the biometric scan, which scans the fingertip, retina etc. to identify the user.

In every business model the consumer should be identified on his arrival (cookie based) to individualize the web shop. The consumer will feel like being in “his” shop. But for Consumer Direct in general, cookie-based shopping as well as username and password authorization is sufficient for ordering and editing personal data.

How **payment** is secured seems to be one of the key challenges in Consumer Direct. In most countries – except for the USA – consumers don’t trust every method of payment. The use of credit cards is not as popular as paying by bill. Most European consumers are afraid of sending private pieces of information via Internet because of continuously published news of insecure transmission and abuse of credit card data. In the US the consumers are not afraid to use credit cards to pay for online orders. For them it is more unfa-

miliar to pay by cash or credit transfer.

In Europe many of the Consumer Direct retailers demand payment after delivery. In this case someone has to be at home to accept the consignment, unattended delivery is not possible. This payment method should therefore only be used in connection with another method. Especially the Europeans favour payment by invoice or debit. As the credit card is globally popular this payment method should also be accepted. Other new solutions as Digital Money or payment over mobile phone are innovative and will win recognition in medium-term. Their biggest advantage are the security mechanisms they offer.

It is essential that a Consumer Direct retailer provides various payment possibilities to win consumers and to urge them to complete their orders and not abort shopping with a full basket. So the consumer can choose the way to pay for his orders. In many cases in which the consumer often shops at one site automatic debiting could be a cost effective and convenient solution because subsequently consumers trust in this shop. Therefore the best solution for ordinary consumers seems to be by direct payment.

In case of special services, the possibility to process payment transactions by cellular phones should be considered because 80% of the EU-population is estimated to have cellular phones in 2003. This very secure method of payment is especially suited for unpremeditated buying.

One of the most important issues – as said before – is security respectively the encryption method, with which sensitive data is transferred to the retailer. In the first years of online shopping most of the transmissions of data were unencrypted or – in case of sensitive data – over conventional media like phone or fax. These were the most secure ways for private users to hand this kind of data over to the retailer. In the following years SSL was established as the most commonly used encryption method and can be called a standard. The SET-method is nowadays one of the most secure transaction encryption software programs. It works with certificates given by a certification centre.

Many studies about online shopping behaviour have shown that encrypted transaction is crucial. The SSL-method is the most practical one used these days, as SET or other certificate based methods are not yet consumer friendly, because consumers have to apply for a certificate. Also the possibility to transfer the relevant pieces of information over phone or fax should be provided for. Many consumers especially in Germany, Italy and Spain trust these conventional medias more.

At last, it should be thought about what the IT-infrastructure has to provide on possibilities.

One important issue is to collect as many pieces of information about the consumers as possible. With these pieces of information the assortment and special offers can be selected more individually and customized websites can be designed accordingly.

To take care of consumers the call centre should have a direct connection to the warehouse. Questions brought up by consumers regarding their orders can be answered more effectively. It is also possible to provide pieces of information about the inventory. The consumer can be informed of every step and of every mistake. The consumer only accepts reliable services. So it is not crucial if an error occurs, but the consumer should immediately get a message. The promised service has to be fulfilled!

The database from which the web site content is taken should be directly connected to the manufacturer's database. It becomes easier and faster to offer new products knowing what the manufacturer wants it to look like.

In case of store picking a centralized order management, which routes the orders from the nearest outlet to the consumer, should be realized. Therefore only one central server has to be installed to serve many clients (at the picking locations) simultaneously.

Illustration 42: Overview on Supporting Concepts
Source: ECR Europe Consumer Direct Logistics Study 2002

		Must have	Nice to have
Appearance	Products plus additional information plus picture plus recent prizes plus availability	X	
	Navigation "on top"	X	
	Information services like recipe, "how to use"		X
	Animations to illustrate "how to use"		X
IT	Collection of all information on the consumer	X	
	Call Centre Connection to Warehouse and Ordering System	X	
	Database connection to the supplier/ manufacturer to provide the newest products (and their description)	X	
	Information on every step	X	
	Centralized order management, which routes the incoming orders to the decentralized picking locations nearest to the consumer	(X)	
IA	Multi channel to reach the consumer		X
	Lead the consumer through the shopping process	X	
Access	Conventional communication (telephone, fax etc.)	X	
	Internet	X	
	Mobile devices (M-m-Commerce)		X
Authorization	Cookie based	X	
	Username and Password	X	
	Certificate		X
	Smart Card		X
	Biometric Scanning		X
Security	Payment after delivery		X
	Invoice or debit	X	
	Credit or debit card	X	
	Electronic coins, digital money		X
	Payment over mobile phone		X
	Conventional media for transfer	X	
	SSL	X	
	SET		X

Beyond the Web Shop: Home Replenishment

Using a web shop to stimulate consumer demands is state of the art in Consumer Direct Logistics. But what is beyond the web shop? Are there other more sophisticated solutions?

A brief look into industry shows that especially manufacturers of household appliances try to develop new solutions. For example there are microwave ovens and fridges that are equipped with touchscreens where you can re-order consumed food without using your personal computer. Some companies experiment with rubbish bins that are supplemented with barcode scanners. The consumer scans the barcode on the packaging before it is thrown away. An e-mail is automatically generated and sent to a home delivery service provider who is responsible for restocking.

Not only industry but also research institutions are working on replenishment solutions for households and small offices. Fraunhofer Nuremberg for example uses Handheld devices with barcode and GSM modules as interfaces between consumers and service provider. The following list shows the main steps in a typical replenishment process:

- The consumers choose replenishment products from a web or printed catalogue and fix the maximum and minimum number of stocked items. The order list is then sent to the CDL provider.
- After consumption the consumers identify the products

by scanning the bar coded article number on the packaging. Automatically a message is generated, sent to the CDL provider and saved in a replenishment database.

- Each day a software algorithm checks the replenishment database for critical stock situations regarding special restrictions and initializes necessary deliveries.
- The consumers are informed by SMS messages before a delivery is carried out by the own fleet or by a logistics service provider. Due to the fact that the consumer has no influence on the delivery time the unattended delivery concept has to be used.

The advantages and disadvantages of home replenishment are quite clear.

The CDL provider wins because he decides at what time which consumer is supplied with a set of products. He is able to "level" the physical flows and to use his resources to capacity. Besides, if he does not allow a consumer to go out of stock he will have very loyal customers. The consumer, on the other side, is relieved of boring shopping trips. There is in fact no fun in buying cat food and tetra packs of milk and juice.

Unfortunately the replenishment concept does not work for every type of product. Apart from that there are many practical problems that have to be solved before the concept could gain broad acceptance in the market.

5.2 DUE TO ATTENDED VS. UNATTENDED DELIVERY - PICKPOINTS AND RETURNS

Retailers have begun to focus on the "last mile" by means of delivery services many years ago – before Internet was even talked about. In the U.S and Great Britain milkmen were the first to deliver fresh food directly to consumers. It is understood that these examples are not on a one to one basis comparable to today's challenges of nearly "unlimited" order possibilities via Internet. However, it demonstrates that home delivery was accepted and demanded long before times of E-Commerce.

In order to solve the delivery problems, the mail-order business created so-called "Sammelbesteller." The "Sammelbesteller" collects orders from several households and passes them on to the mail-order retailer as one order. Due to the fact of a sole recipient, the Drop-Factor (amount of delivered packages) was increased and the stopping-time for each parcel reduced. The consumer behaviour was incentivised by special discounts.

Small neighbourhood stores in Japan (Konibi) pursue a similar approach by placing orders through an agent. The actual recipient can then pick-up his order round-the-clock at these outlets. Backed by 30,000 of these stores this concept ensures complete E-Commerce-Supply coverage.

Only the rapid increase of orders placed via Internet in Germany, Europe and the U.S brought this into focus. Reason being the long stopping-times, that originate in the b2b-delivery. While in a b2b- business-situation several

packages are delivered to one recipient, households mostly receive only one package.

The process of delivery takes approximately the same time in both cases – if delivery was successful the first try. However, there is a high probability that the consumer of the shipment is not always in a position to accept the delivery and another attempt of delivery has to be undertaken. Therefore KEP-companies strive for alternatives to a personal hand-over of the goods. These span from a simple "neighbourhood-store-solution" up to a high-tech-delivery box with IT.

Accordingly innovative ideas were developed in the U.S. The company Streamline was the first E-Commerce delivery service to optimise delivery by offering delivery boxes with various temperature zones installed in every consumer's household. Favoured by this particular solution (and by the fact of only one delivery per week) one could optimise delivery routes similar to b2b, because there was no need for the consumer to be present at the time of delivery. Brivo as a supplier developed a box, which not only protects from unlawful access, but also informs the owner by E-Mail or SMS when and what delivery was made.

The different unattended delivery concepts can be categorized as follows :

1. "Depot solution" near a regional central point, at which the deliveries can be picked up.

2. "Neighbourhood solution" with a local pick up point at an existing retail outlet with long opening hours, like stations and video rentals.
3. "Inhouse solution" in which one or several houses install box system solutions.
4. "Front door solution" in which every household installs its own delivery box near the door or entrance.

Regarding the depot solution an intermediary storing possibility at a central point like a traffic knot is installed. The most popular concept in Germany is the "Tower 24". Here a tower-like storing system with three different temperature zones is installed for example at a park & ride location. Service providers like home delivery services have the possibility to place orders there and the consumers can pick them up any time they want. This concept is still in development. The advantage of it is that fresh and frozen food can also be stored. With the bundling of deliveries advantages for CEP-service providers arise as they do for the next two concepts.

Regarding the "neighbourhood solution" retail outlets like gas stations or video rentals take the orders as an intermediary. The consumer can therefore pick up his orders outside regular opening hours for example at the post office. PickPoint, a company of D.Logistics, already offers this service in 1,700 places all over Germany and also in Austria, the UK and Switzerland. The possi-

bility to deliver fresh or even frozen food does not exist.

Regarding the third concept a box system is installed for more households in for example the entrance area. One popular company – the Shopping Box GmbH – has already installed a system in the TRIANON skyscraper in Frankfurt. There the employees have the possibility to let their orders be delivered to those "lockers". Because of different temperature zones it is also capable of storing fresh and frozen food.

Regarding the "front door" concept every household gets its own delivery box. This solution is predestined for one family houses or homes with a separate front door. Here it is possible to install the high-tech solution as described above or a low-tech solution. Using the latter only mail-order products can be stored, because it does not have any isolating or cooling devices.

Each of these described concepts has advantages and disadvantages. Is the investment for the "neighbourhood model" low, because it can be reverted to an existing infrastructure, the consumer has to eventually go to an outlet and cannot order fresh food. Regarding the "front door model" it is very convenient for the consumer because he picks up his deliveries near his letterbox, but this solution is very expensive. However, it does not have the biggest disadvantage of the other three models: every CEP-Service accepts the delivery to this box. Regarding the others only a few delivery companies serve them.

Illustration 43: Attended vs. Unattended delivery
Source: ECR Europe Consumer Direct Logistics Study 2002

	Plus	Minus
Standard attended delivery	very low cost	few possibilities to optimise delivery tour
Sealed delivery boxes	low costs, tour optimisation possible	insecure, short time to hold temperature
Pickpoints	low costs, tour optimisation possible, secure, unattended	not practicable for groceries, central pickup
Locked delivery boxes, not isolated	low cost, tour optimisation possible, secure, unattended	short time to hold temperature
Locked delivery boxes, isolated	tour optimisation possible, secure, cold chain, unattended	very high costs
Locked delivery boxes, isolated, with IT	tour optimisation possible, secure, cold chain, track&trace, unattended	very high costs

The absolute number of **returns** increases with Internet retailing – but with a smaller percentage compared to traditional mail-order retailing. It is well known that the share of returns increases with the time it takes to deliver. Studies in the US have shown that an increase of the delivery time from 3 to 7 days resulted in the increase of the share of returns from 7% to 25%. This figure differs from sector to sector (clothing might sum up to 60 %). Other studies show that the most important thing doesn't seem to be the speed but the accuracy at which the promised date and time for delivery is met. As said it seems

that those results depend significantly on the kind of products being ordered.

In the first years of online shopping and Consumer Direct most of the retailers tried to handle the returns on their own – and generated immense costs (see below). The reason in most cases was, that the online retailers were – and still are – too small. The handling of returns can not be automated. In the last few years special companies built up competences solely regarding the handling of those re-sent products. Therefore small companies can also afford high quality regarding the handling of returns.

	Must have	Nice to have
Acceptance of items with refundable deposit	X	
Alliance with brick&mortar store		X
Return label of parcel service	(X)	
Acceptance of recyclable packaging		X
Handling returns insourced		X

But what do Consumer Direct retailers have to consider regarding reverse logistics? First – in case of offering – the retailer and/or the delivery service has to accept emptied packaging with refundable deposit. Why should a consumer buy via Internet and let for example bottles be delivered if he has to bring back the emptied bottles to a retail outlet to get back the deposit? One solution can be not to offer such articles. This would mean, that the ecological aspects are ignored and only products with one-way packaging are offered.

Regarding these one-way packaged products, a consumer direct retailer does not have to take back recyclable packaging, because in those countries, in which people are sensitive on that, there are special bins or services provided. Otherwise it is not necessary.

The other aspect of returns eyes on products, which the consumer wants to return to the retailer because either he doesn't like it or it is defective. In this case the return process should be as easy as can be. One possibility is to build an alliance with a

brick & mortar shop retailer who accepts the products to be returned and handles the reverse logistics himself. The other possibility is offered by some CEP-service providers. Special return labels are placed inside every delivery. These labels just have to be placed on the parcel which are to be returned to the retailer. With these labels it is easier for the retailer to handle the returns. Also – in many cases – the return labels are already prepaid. Therefore the consumer does not have any additional costs making it very convenient. Additionally outsourcing of the reverse logistics process should be kept in mind. Professional service providers as return.com have the core competence to handle the re-sent products. The costs include transportation, verification, new packaging, re-storing, clearing and administration.

Other aspects as the assortment (only branded articles), good availability of product information, low lead times, secure packaging and high quality regarding pick & pack should also be considered to decrease the share of returns.

5.3 PACKAGING AND THE COLD CHAIN

Packaging

For Consumer Direct, robust packaging of articles is essential. Regarding shipping and packaging, it should be considered that deliveries may fall down from up to 90 cm and have to be able to resist temperatures between -15°C to $+50^{\circ}\text{C}$ during transportation.

But it is also possible to design the packaging of products individually. Advertisement and information for usage can be printed on it because the consumer sees the product when he

receives it. Therefore, the design of the packaging does not help to sell it (as it does in the brick-and-mortar-outlets), but may provide a benefit for the consumer. Also special packaging with customized advertisement can be realized. The retailer knows his consumers best, so he can use this knowledge about their shopping habits to offer advertisement designed or selected for this specific target group.

The Cold Chain

Besides other legal issues, the most crucial legal framework regarding the distribution of fresh and frozen food, is the one regarding the Cold Chain. The main problem keeping the specified temperature over the whole process from warehousing to delivery. Fresh food, such as meat, milk and cheese, has to be held at a temperature between $+4^{\circ}\text{C}$ and $+10^{\circ}\text{C}$ (depending on the type of food). Frozen food has to be stored at temperatures between -18°C and -15°C .

As it is no problem to store food in warehouses at the right temperature, it is crucial to provide a closed Cold Chain until handing

the product over to the consumer. Two possibilities exist to cope with this issue: passive and active isolation.

Regarding passive isolation, certain materials such as styrofoam are used to hold the temperature inside a delivery box. Those boxes can keep $+7^{\circ}\text{C}$ for about 3,5 hours and $+10^{\circ}\text{C}$ for six hours on an average. Frozen food should not be delivered.

The better and more expensive solution, is an active Cold Chain. Vans and vehicles are equipped with three different temperature zones to store warm, fresh and frozen food separately.

5.4 COMMUNICATIONS – STANDARDS – SECURITY – TECHNOLOGY

Authorization

First **cookies** are used to identify the consumer who visits the web site – and “authorize” him to look at “his” content. A cookie is a coded piece of information,

stored on a computer, that identifies it during the current and subsequent visits to a web site.

A much more secure method of preventing unauthorized access

to personal data is to use **certificate** based authorization. In this case the consumer and the retailer (client and server) have certificates (like a key and a key-hole) that have to match in order to authorize the client's access. These certificates are located on the computer itself.

The next step is to use **smart cards**, on which the "key" to a certain web site is stored. This

Security

The leading security protocol on the Internet is the Secure Sockets Layer (**SSL**). When an SSL session is started, the server sends its public key to the browser, which the browser uses to send a randomly generated secret key back to the server in order to have a secret key exchange for that session. Developed by Netscape, SSL has been merged with other protocols and authentication methods by the IETF into a new protocol known as Transport Layer Security (TLS). See TLS, security protocol and public key cryptography.

The next step to a more secure way of transmission is the Secure Electronic Transaction (**SET**). This is a standard protocol from MasterCard and Visa for securing online credit card payments via the Internet. It is a three-way transaction: the user, merchant and bank must use the SET protocols. Credit card data and a digital certificate (for authentication) are stored in a plug-in to the user's Web browser. The or-

could for example be a mobile phone card. A disadvantage is that additional hardware is needed. Also this technology is not yet established.

The **biometric scan** of the retina or a fingerprint is the most innovative way to identify a user. Whether this technology will be established in Consumer Direct is questionable.

der is received by a SET-enabled merchant server that passes encrypted payment information to the bank. Approval is electronically sent to the merchant. Payment methods include:

Digital coins are electronic money used on the Internet. This payment method was developed to provide complete and secure order fulfilment over the Internet. Digital money is comparable to traveller's checks. It is either downloaded as "digital coins" from a participating bank into the user's personal computer, or a digital money account is set up within the bank. Either the digital coins or the transactions that debit the account are transmitted to the merchant for payment. All transactions are encrypted for security.

The possibility to **pay by using a mobile phone** is one of the most secure methods. In this case payment transactions only take place over the mobile phone infrastructure. This method seems to be very secure.

Mobile Communication

GSM is the acronym of Global System for mobile communica-

tions. With this mobile communication technique the bit rate is

9,6 kBit/s – compared to 64 kBit/s of a normal ISDN-connection. GSM is a worldwide standard with over 400 mil. users (in Europe 285 mil. users). To realize M-Commerce with this rather slow connection, the Wireless Application Protocol (**WAP**) was developed.

GPRS (General Packet Radio Service) is the next generation of mobile data (!) communication. This transmission method – as well as HSCSD (see below) uses the GSM infrastructure. It bundles several channels to achieve a bit rate of about 100 kBit/s.

As GPRS, the standard **HSCSD** (High Speed Circuit Switched Data) uses the GSM infrastructure which bundles four GSM channels to achieve a bit rate of 57,6 kBit/s.

The third generation of mobile communication is **UMTS** (Universal Mobile Telecommunications Service). With this technique, M-Commerce is expected to be established and to generate a huge amount of online sales. It enables a bit rate of 2 MBit/s. This technology is expected to be installed in early 2003. Whether the expectations regarding M-Commerce will be fulfilled is questionable. But with this new technology it would be possible to offer new services to the consumers.

6 IMPLICATIONS AND OPEN ENDS

The still omitted Implications along the Supply Chain

In the preceding chapters a number of Business Models of Consumer Direct were introduced, three basic scenarios characterized and key challenges as well as Smart Practices in doing Consumer Direct Logistics were elaborated, evaluated and introduced. As it showed in the study and also shows in practice, the application of modern technology and the creation of market shares supported by intense marketing efforts, does not solely guarantee success in the new environment of Consumer Direct Business. The environment of this still young business approach implies some new problems, unknown before to most of the players, which need to be solved in repetitive, time consuming improvement processes. Successful companies took huge efforts upon themselves to improve their elementary logistics processes to create robust, standardized and efficient processes.

So far it also showed that Consumer Direct is basically a business in the sole focus of retailers and some "pure players" in the field. Implications on the Back-End of the Supply Chain, i.e. the manufacturers or even the suppliers of the manufacturers are hardly addressed. Of course there are links to manufacturers like the one concerning the updating of the product catalogues, the joint optimisation of assortments or avoiding out-of-stock situations - which seems even more important in an envi-

ronment of Consumer Direct than it has already been in the "classical" on shelf business - but it is still hard to find related approaches of collaboration along the supply chain in practice.

As mentioned before, Consumer Direct Business is a young business. Taking this into account, the smart practices and the other approaches discussed in this study to meet the challenges may only be seen as a first, but fundamental, step on the way to the exploration of the new opportunities. It will not work to just copy the practices discussed in this report to secure success. But it will also not work to do business without doing at least most of these basic things.

For the future it can be expected that with maturing businesses, more advanced methods and technologies will be used by the successful pioneering companies. Here again we predict that it will not work to just copy the methods and techniques of the classical business to the new environment. Each business - the old as the new - is related to a number of visible or hidden rules. To exploit the opportunities promised by innovative technology and new business ideas, some old rules have to be rethought, adopted, and maybe some new rules have to be developed to meet the special requirements of the new environment with all its new constraints.

Collaboration and ECR Principles - Open Ends in Consumer Direct Business

While thus the established methods of ECR may not fit perfectly to the Consumer Direct Business, the basic principles behind them do. Ideas of Cross Docking and Transshipment for example may be applied to increase the limited assortments available when picking from warehouses instead of stores. Supply Chain Software may increase transparency upstream the chain helping to avoid out-of-stock situations instead of handling them. Manufacturers get by Consumer Direct opportunities to learn about consumers. By building up alliances with Consumer Direct companies, information can be used to either optimise the assortment, identify

new trends or examine the acceptance of new introduced products as well as to customize products and packaging for specific target groups or new handling requirements. With new IT and direct access to consumers preferences it is possible to use consumer's data more precisely and comprehensively. Specific target group analysis will be easier to perform. Illustration 42 provides some more examples linking them to the ECR Global Scorecard. Bottom line to succeed in all of these outlined efforts, collaboration and partnering between the players in the extended Consumer Direct Supply Chain is key. **Never loose this basic enabler out of sight.**

Illustration 45: Examples of Links between CDL and the ECR Global Scorecard
Source: ECR Europe Consumer Direct Logistics Study 2002

Basic Issue	Manufacturer	Retailer	Consumer
Optimise Product Integration (e.g. Packaging)	Packaging Design Impact on primary and secondary packaging shapes and composition	Totes/Crates etc. for frozen and chilled products Tertiary packaging "Bag in Box"; Empty returns	
Optimize Assortment	Category Management	Micro Information on Consumers from Web Shop	
Collaborative POS Forecasts	Efficient Replenishment Replenishment frequencies	Information of consumer Preferences; Demand patterns	
Database Maintenance	Article Numbering, Standardization	Updating of Product catalogues	
Responsive Production Process Retail availability	Capability to promise to avoid Out of Stock situations	Availability to promise	
Product Flow	Cross Docking & Transshipment	Picking of small handling units; Merge in Transit, Bundling	
Reliable Delivery		Tracking & Tracing; Meeting Delivery Windows	
Efficient Receiving		Unattended delivery, (e.g. shopping boxes; other devices)	
Automated (Store) Ordering	Automated Store Ordering	Automated Replenishment Intelligent Demand Recognition	

7 GLOSSARY AND COMMENTS ON THE BOX OF ALTERNATIVES

Active customer stimulation

The consumer direct provider pushes information about new products, new promotion events and so on. Example Amazon.com: every time the consumer locks on the homepage special offers, tailored to his special needs are generated by the consumer's profile.

Adaptation of customer profiles

The collected information about the customer (age, order volume, ordered items) are compared with existing customers. Then a profile is generated (e.g. Vegetarian, family with baby).

Address Verification

Process used by a credit card processor or other party to verify that a consumer's ordering address matches their previous records.

At local representative

Merging of deliveries is fulfilled by a local person on behalf of a logistics service provider.

Authorization

The process of checking the validity and available balance of a consumer's credit card before the transaction can be accepted.

Automatic replenishment

This replenishment process is carried out fully automatically using a 'Don't run out list'. The products are scanned with electronic devices, like PDA, and transmitting to a logistics service provider.

Check of availability

Automatic check if the ordered products are available in the picking area (either store or warehouse), if not the next possible warehouse is checked and the products are ordered from the warehouse.

Check of plausibility

Checks if the order is plausible, e.g. do the ordered products and the amount match roughly with previous orders.

Generation of additional offers

Process of advising consumers that other products relate to his current product like ingredients for a meal etc. Example: Amazon generates additional offers due to the hint „customer who bought this item also bought ...“

Intermediate locations

These are petrol stations, delivery boxes at train stations or main roads. These points are frequently passed by peoples and so the collection of goods is easy.

Last mile

The part of the Supply Chain from the consumer direct provider to the consumer is difficult to design as the demands of the consumers are very high.

Merging at store / distribution centre

Partial deliveries from different suppliers like bakery or butcher are merged in store or distribution centre.

Merging by Logistics Service Provider (LSP) in transit

Partial deliveries from different suppliers are merged by a logistics service provider during transport or at the consumer's door step.

Merge of partial deliveries

Process of merging products from different parties like bakery, butcher, florist in order to avoid, that the consumer has to deal with several suppliers.

Passive customer stimulation

The consumer has to pull information about new products, or promotion activities which could be interesting for him.

Picking & Packing

Process of fulfilling a customer's order in a warehouse and finally packing the order so that it can be delivered safely to the customer.

Point of Use-Service

Instructions provided by the consumer direct company or manufacturer in order to prepare something (meals) install devices or to build up e.g. furniture.

Return label inside shipment

The return label provided by the company contains the return address, a free payment of the parcel and is stuck by the consumer on the parcel.

Settlement

Once the goods have been shipped to the consumer, the merchant can key a transaction for settlement at which time the consumer's credit card is charged for the transaction and the proceeds are deposited into the merchant account.

Shipping Confirmation

A message either by email or SMS that notifies the consumer that an order has been fulfilled and shipped.

Store room "pantry"

The order is delivered directly into the consumer's household and stored so that the consumer does not need to touch the products.

Synchronised delivery

Orders from different suppliers are delivered at one time in order to avoid uncoordinated delivery.

Uncoordinated delivery

Customer receives several partial deliveries of his order due to a lack of coordination between different suppliers or out-of-stock situations.