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MARKET POWER AND INTERORGANIZATIONAL CONTROL IN THE FASHION INDUSTRY: THE ROLE OF TRACEABILITY*

Summary (English)

Traceability is a very complex concept which regards the sharing of knowledge on product information and production processes along the supply chain in btb networks until the consumers in the final market. It has undoubtedly an important impact on the relationships between actors along the supply chain, especially in the fashion industry, where traceability has an increasing role due to the strong integration between industrial and retail functions and the relevance of changes in the organization of production networks (global shift of production to new industrialized countries and emerging markets). The paper aims to analyse

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the relation between traceability and buyer-seller relationship. Empirically, it presents findings from a case analysis process of five actors in the fashion industry, which show how different traceability concepts adopted by the dominant actor in the network affect buyer-seller relationships, emerging from how the necessity for traceability has changed the way the specific company does its business.

Summary (Italian)

Il concetto di tracciabilità è molto complesso ed in linea generale riguarda la condivisione di conoscenza sul prodotto e sul processo produttivo tra gli attori della filiera, fino al consumatore finale del prodotto. Tale concetto ha sicuramente un impatto sulle relazioni acquirente-fornitore, in particolare nel sistema moda dove la tracciabilità ha un ruolo crescente data la forte integrazione tra funzioni di natura industriale e commerciale e la rilevanza dei cambiamenti nell'organizzazione dei network produttivi (spostamento globale delle produzioni verso paesi di nuova industrializzazione). Il paper ha come obiettivo quello di analizzare il rapporto tra tracciabilità e relazioni acquirente-fornitore. Dal punto di vista empirico, vengono presentati i risultati di un processo di case analysis con cinque attori del sistema moda. La ricerca evidenzia come i differenti concetti di tracciabilità adottati ed i principali obiettivi perseguiti dall'attore dominante nel network influenzano le relazioni acquirente-fornitore in ogni specifico caso.

Introduction

Traceability is a complex concept which meaning depends on, first of all, the way in which different actors interpret it. By traceability, in this paper we refer to the problem of the generation of information on products and production processes, examining the way this information is shared among the different actors on the market.

This is an issue that has assumed increasing importance in a number of industries. For example, in some sectors of the food industry (eg. beef, fowl) its importance was underscored in the 1990s during the various health scares that were of great concern to public opinion in Europe and other parts of the world. In other industries (pharmaceuticals, health care, fashion, toys) the issue has arisen at different times and for other reasons, but it is no less relevant today (Banathy 1996) (table 1).

The concept of traceability has undoubtedly an important impact on the relationships between actors along the supply chain, in particular in the fashion industry where there is an even more strong integration between industrial and retail functions. In the textile-clothing pipeline, traceability has in fact an increasing relevance due to the changes in the organization of production networks, especially considering the global shift of production to new industrialized countries and emerging markets (low cost of factors). In fact, while in the past decades production networks localized in specific territories (as in the industrial district in Italy) were competitive with respect to global production networks, more recently the non recognition (e.g. in terms of the willingness to pay a higher price) of the final market to the value of local base production lead actors more and more to extend their supply base globally. In this context, traceability is supposed to be a competitive leverage which can contribute to grant extra-value to local production networks in the competition with global production networks.

Empirically, the paper uses a multimethodological approach, integrating concepts from the academic and technical literature with data collected by database and firm's annual reports, with findings emerging from a case analysis process. Different actors are considered and different traceability concepts emerge. More specifically five cases are presented and commented. The case analysis shows how different traceability concepts adopted by the dominant actor in the network affect buyer-seller relationships, looking at how the necessity for traceability has changed the way the specific company does its business. The paper ends with some final remarks on the managerial implications of the adoption of the concept of traceability in the fashion supply chain.

Table 1. The increasing importance of traceability in different industries

Industry	Issues and cases
Drugs	Trade in counterfeit drugs is widespread and affects both developing and developed countries and it is expanding since the 90's. WHM claims that 7% of drugs sold in the world are counterfeit (30% in Brasil and 60% in some african countries) with active ingredients mainly produced in Turkey, Cyprus, Lebanon, India, China, Pakistan and ex-URSS. All medicines are subject to counterfeiting, both branded and generic. Counterfeit drugs are found under different forms, including: products with the correct ingredients but with incorrect quantities of active ingredients, or time-expired active ingredients, creating an increased risk of drug resistance; products relabelled, which can lead to allergic reactions and harmful interactions with other drugs; products with the wrong ingredients possibly toxic and therefore directly harmful to patients; products without active ingredient, leaving patients at risk as their disease is left without treatment. Because the public health risk of counterfeit medicines recognizes no national boundaries, companies have created the Pharmaceutical Security Institute (PSI) and developed global security strategies to ensure public safety and rules respect.
Grocery (beef)	The bovine spongiform encephalopathy (BSE; mad cow disease) crisis started during the 80s but arose as a world problem at the end of the 90's. The U.K. has experienced the largest epidemic of BSE. The crisis BSE provides an example of a serious emerging disease moving into new areas by means of trade flows of contaminated meat and bone meal. However since the end of the 90's several countries instituted and enforced rules to prevent contaminated cattle from entering the human food chain through identification and recall systems

Grocery (fowl)	The continuing outbreaks of highly pathogenic avian influenza (HPAI) in several Southeast Asian countries that begun in late 2003 and early 2004 have been disastrous to the poultry industry in the region and have raised serious global public health concerns. Over 150 million domestic poultry have either died or been destroyed and over a hundred people have contracted the infection, of which close to 60 have died since May 2005. Despite control measures worldwide the disease continues in causing economic losses and threatening the livelihood of hundreds of millions of farmers, smallholder entrepreneurship and commercial poultry production, seriously impeding regional and international trade and market opportunities.
Health care	The health care and oral care industry is affected by safety problems due to counterfeit products. Recently (june 2007) Colgate-Palmolive Co., a worldwide leader in oral, personal and home care, recalled what it claimed to be falsely packaged "Colgate" toothpaste, after diethylene glycol (DEG) contamination was found in routine testing by the Federal Drug Administration in some 5 ounce tubes of "Colgate". Colgate-Palmolive said it does not use, nor has ever used, diethylene glycol as an ingredient in its toothpaste anywhere in the world. The chemical, known as DEG and sometimes illegally used as an inexpensive sweetener and thickening agent, is commonly found in solvents and antifreeze. The Colgate-Palmolive announcement comes less than two weeks after the US Food and Drug Administration warned consumers to avoid any toothpaste made in China after inspectors found DEG in tubes sold at two stores.
Toys	The toys industry has experienced strictly rules since it is involved in the safety of children. Recently a crisis in confidence affecting China's toy industry began in june 2007, when New York-based RC2 recalled 1.5m Thomas the Tank Engine products made in Guangdong (the world's largest toy manufacturing centre with exports valued at €3.64bn in 2006). Even Mattel issued a similar recall of Fisher Price brand toys manufactured in Guangdong. Mattel, Inc., the worldwide leader in the design, manufacture and marketing of toys and family products, recalled 19 millions toys worldwide due to lead poisoning hazard. The toys were licensed character toys made in China. Surface paints on the toys could contain excessive levels of lead. Lead is toxic if ingested by young children and can cause adverse health effects. The voluntary recall results from Mattel's thorough investigation of vendor-sourced toys. Mattel has also globally implemented a strengthened, three-point check system to test toys throughout the manufacturing process.

(*) The table has been elaborated on the basis of information collected in both institutional and firm's soucers: Food and Agriculture Organization of the United Nations, World Health Organization, International Federation of Pharmaceutical Manufacturers & Association, Toys Industry Association, Mattel Inc., Colgate-Palmolive Company.

Concepts of traceability and buyer-seller relations

The sharing of information on products and production processes plays a role in the buyer-seller relation as a result of the flows (physical, financial and also information-related) that characterize interaction among organizations and persons. In this context, addressing the issue of traceability means adopting a non generic framework to deal with the problem of information sharing, by defining standards for at least the following points:

(1) the contents of any information that is coded and shared;
(2) how information is coded and transferred and the technology involved;
(3) which actors will gain access to the information.

On the first point, the contents of the information may concern aspects related to the product and/or production processes (Van Dorp 2003). For example, there may be information on the country of origin of the product and the processes involved (Jaffé and Nebenzahl 1989), either taken as a whole or focusing on individual aspects (design, assembly, manufacture, etc.). Other information may include details on the characteristics of certain processes considered to be of notable importance (materials utilized, provenance of such

materials, processing techniques and procedures, firms or other actors involved, etc.), any certification that may be connected to the product, and compliance with rules (ethical and/or legal rules, the latter being local, national, or supra-national, etc.).

On the second point, the manner in which firms encode information on products and processes may include mature technology (manual cataloging and databases, labeling, recognition codes) that has long been in use (Cheng, Simmons 1994) in various sectors. But information coding and transfer is not limited to the technological aspect, as it may also concern organizational aspects and relations among firms. In these areas technological development is an important driver of change, as shown by the increasingly widespread use of RFID (Radio Frequency IDentification) technology (Smith 2005, Meyer 2004, Atkinson 2004) and the various approaches to management of processes which are linked to new technology (Trappey et al. 2004).

With regard to the third point, the actors who can gain access to the information can consist both of direct and indirect customers, whether these are other firms or consumers. The information could also be made available to public bodies in charge of inspections and control, or to other public agencies (specialized media, associations etc.) that have the power to perform tests on products in order to ascertain compliance with regulations (for instance to detect counterfeiting, Chow 2003). Suppliers may likewise be interested in accessing the information, as the possibility of acquiring greater knowledge on the manner of use of their own products may be of importance for development of strategic marketing. Such knowledge may also be important in terms of the responsibility that arises from information sharing, as the concept of traceability effectively heightens awareness of responsibility (Douglas 1999).

These three points, proposed as the distinctive features of the traceability process, are not only interlinked but they are also closely connected to a number of other aspects.

Firstly, the answers to these points depend on which actor is activating the process, and therefore on the aims pursued by the given actor, since they can affect the way the traceability process is set up; Furthermore, the aims are themselves influenced by the characteristics of the individual actor (size, technology adopted) and by the buyer-seller relations in which the actor is involved (power relations, atmosphere), as well as by the network within which these interactions take place (extension, density of connections, etc.). Network size becomes relevant when the buyer-supplier relation – which forms the major focus of this paper – takes into account other actors who may, by virtue of traceability, gain access to the information. However, the buyer-supplier interaction still maintains its significance as a framework where information coding can take shape and where the first

stage of information sharing can arise, thus setting in motion the availability of information to other nodes in the network (Petit 2002).

Another important consideration is that the process of traceability is connected to the definition of the actors who will be able to utilize the result of the process. Such actors do not necessarily coincide with those who come to have access to the information. There may be actors who can have access to information on processes and products but who are not the intended recipients of the traceability process. Alternatively, there may be a concept of traceability whose results are utilized by certain actors without the latter actually having access (at least not directly) to the information that endows the process with content (Prater et al. 2005).

On the basis of these and other elements, the theme of traceability can be regarded as now having become rather complex, so that more than one concept of traceability can be identified. In particular, a glance at the aims underlying the activation of the traceability process shows that at least two concepts of traceability can be recognized, namely:

(a) as a tool for inter-organizational control;

(b) as a tool for market power.

In both cases traceability is accompanied by "traces" left on the product; the traces are readable but in different ways by different actors and above all according to the different aims pursued by the actor who activates the process.

With regard to concept (a), the main aim of traceability as a tool of interorganizational control is that of reconstructing the history of a product by identifying the various material activities and operators who have contributed to its creation through their role or their participation in the various phases of the process. Traceability allows this information to become available through identification and documentation of the various stages the product passes through. It thus fulfils the purpose of reconstructing the technical process and the contribution of the different actors. The actor that utilizes the results of the process is generally the firm that takes on a central role in the network of interorganizational relations, playing the role of leader in the supply chain.

Let us consider the case of distribution enterprises that seek to establish control over their supply chains and which effectively become the leader of these chains (Jones et al. 2004). Here the concept of traceability can be viewed as a tool that makes it possible to trace elements of information present along the pipeline, working "from downstream to upstream". With the aid of this tool, a product can be withdrawn from the market if this becomes necessary on account of its particular provenance, or if it has gone through process stages or

treatment considered to be dangerous for the final customers and/or for the firm's reputation (Haisley 2002). Traceability also facilitates the supply chain leader's search for greater efficiency in supply management, by exploiting the potential implicit in the availability of information (Kärkkäinen 2003).

Turning now to concept (b), traceability is a market power tool when it operates as an element of the information process, enabling the final customer (consumer), together with or in some cases through other actors who may be involved, to acquire knowledge on the origin and the "states" of realization of the product. This concept of traceability may, for instance, be helpful as a response to the need to link the product to a certain supplier (for example, a parts manufacturer), or a technical procedure, or a specific local area or country of origin. Consider the example of an industrial producer from a country that has a strong image in a certain product sector: the visibility of this attribute through the brand name and other traces left on the product may in some cases bring advantage over competitors, if the recognizable signs are percolated "from upstream to downstream". For instance, recognition of the provenance attribute may generate perceptions due to stereotypes that the consumer associates with a specific country of origin of a product (Chao 1993). Brand names may likewise communicate the country and the associated quality (Usunier 1993). The image of the country of provenance represents an important element on product evaluation because of the association that may be present in the consumer's mind (or in that of a customer) between a given country and a product category (Nebenzahl et al. 1997). An example comes from the sphere of luxury products, in which it is known that there is a persistently elevated concentration of the major brands in no more than a few countries of origin (Jackson 2004). This factor is by no means casual: rather, it is symptomatic of the fact that luxury is identified with certain countries and certain cities, at least in the consumer's imagination. The country of origin effect has long been observed on a number of markets, sometimes associated with "nationalism" in the consumer's purchasing behavior. This is particularly true for some specific products in national sectors and contexts that are being increasingly and adversely affected by international competition. So-called "premium prices" linked to the same phenomenon have also been observed, as shown by a 1980s study on the US automobile market, which demonstrated that consumers were aware that a "made in USA" carried a premium price equivalent to roughly 30%, other things being equal (Johansson and Nebenzahl 1986).

There two concepts of traceability described above can come into play in the buyer-supplier relation in a number of different ways. They could become an element of opposition or a factor of further integration between the buyer's organization and that of the seller.

Adoption of one or the other concept could represent an element affecting the behavior of one or the other or indeed both of the actors involved in the relation. For example, one could imagine a case where only the buyer - or only the seller – might espouse a particular concept of traceability, in the absence of any specific interest by the other party. There might be other cases where the buyer's concept of traceability could prove to be different from that adopted by the seller, and this could be linked to or revealed by their pursuit of different aims (interorganizational control or market power). This might lead the two parties to adopt different positions (Mouzas, 2006) with regard to the way traceability should be implemented on the plane of information content, the technologies adopted and the actors who should be allowed access to the information (for example, inclusion or exclusion of final customers among those who have access). Thus the concept of traceability adopted in the framework of the interaction could be biased towards the aim of market power (eg. as an aim pursued by the seller) or of interorganizational control (eg. as an aim pursued by the buyer). Another possibility is that the two concepts of traceability could correspond to two programs pursued separately by the two actors involved in the interaction, without either position interfering with the other. Finally, there could be a search for a form of integration between the requirements underlying the two concepts of traceability, and this could be of relevance both as regards interaction between the two actors and also their position within the network of relations that defines their market.

Traceability and supply chains in the fashion industry

In the fashion industry, the theme of traceability is growing in importance due to the momentous changes that have recently characterized this industry. Such changes concern organization of the processes adopted in the individual firms but also, and even more so, the networks of organizations of that have taken shape around them.

In particular, traceability is of particular importance in the relation between organizational networks localized in specific areas and geographically dispersed networks. Both forms of network continue to be of considerable importance, but recent years have seen a notable increase in geographic diversification of the supply chains of the dominant industries in this industry. Such a tendency is associated with the progressive shift of production towards recently industrialized countries (Gereffi 1994; Taplin and Winterton

1997), and thus is a phenomenon which to a greater or lesser extent affects all fashion system sectors, in particular textiles and apparel (Jones 2002; Singleton 1997).

The fashion system supply chains have been described as "commodity chains", an expression that is taken to refer "to the whole range of activities involved in the design, production, and marketing of a product" (Gereffi 1999, 38). Use of the term "commodity" to describe the concept of "product chain" is not neutral within marketing language, as it evokes the concept of an undifferentiated product that is typical of the "commodity approach". The latter approach was the hallmark of one of the schools of marketing studies (the others being the "institutional approach" and the "functional approach") that was widely accepted prior to the great evolution of the discipline that took place in the 1950s and 1960s (Converse 1959). Therefore this term tends to be associated more with product "genericity", massified on the plane of the production process and massifying when seen in the consumer's perspective, rather than with elements of specificity and brand personality.

"Commodity chains" are distinguished into "producer driver" and "buyer driver" depending on the nature of the actor that assumes a leadership position (Gereffi 1999). "Producer driver" chains are dominated by firms that are often large and transnational, acting as operators endowed with manufacturing investments and playing a central role in coordinating production networks, both upstream (relations with suppliers) and downstream (relations with distribution). "Buyer driver" chains, on the other hand, are dominated by actors that do not concentrate heavy investments in the field of manufacturing: instead of focusing on internal production, they play a pivotal role in setting up production networks in a variety of exporting countries, which in the overwhelming majority of cases are characterized by low labor and production process costs. In general, buyer driver chains have as their leader one of the following types of actors:

(a) actors that control chains of fashion system retailers;

(b) actors involved in product marketing but who also develop their own branding policy and are thus branded marketers;

(c) actors that are primarily branded manufacturers.

While retailers and branded marketers rely on "full-package" supply networks, whereby they purchase already produced apparel from suppliers in a global context, branded manufacturers frequently create production networks that engage in apparel assembly using imported inputs. Thus "full-package" supply networks are generally global, but branded manufacturers' production networks take on a predominantly regional network (Gereffi 1999, 65). And although network localization is not necessarily influenced by the profile of the

leading actor, the "buyer driver" chain often features a correspondence between type of buyer, localization of the network (global or regional) and supply typology ("full package" or "assembly of imported input"), as shown in the chart below.

Table 2. Leading actor of the chain, localization of the network and supply typology

Actor	Network localization	Supply typology
Retailers, Branded marketers	Global network	"Full-package"
Branded manufacturers	Regional network	"Imported input" assembly

The development of "buyer driver" supply chains where the leader is a retailing firm has prompted increasing interest in the concept of integrating design and retail in product innovation processes. It is worth noting that according to recent studies, design and retailing integration in the apparel industry stands in a positive relation with increased performance of a new product (Abecassis- Moedes 2006, 424-425).

The three figures of actors corresponding to the retailer, the branded marketers and the branded manufacturers are associated with potentially different and novel positions as far as the themes of brand and traceability are concerned. In the past, above all in the field of apparel, retailers were the main customers of manufacturers, whereas today they are increasingly in competition with the manufacturers. Many retailers compete directly with the national brands of apparel manufacturers and with the other marketers by developing their own "private label" sources, i.e. through the tool of the commercial brand. Private label programs have led a rising number of operators to take on entrepreneurial functions that would normally characterize the apparel producer, such as product design, semifinished product selection and sourcing, and quality control of apparel (Dickerson 1995).

Since the mid 1970s the phenomenon of branded marketers has also become widespread. This term, familiar from specialized English language literature, describes important commercial actors who have developed well known brands yet without setting up any manufacturing plants. These operators, who have been defined as "manufacturers without factories", were from their very beginning established as global enterprises, in terms both of resource seeking and market seeking, as their supply processes were set up at origin with an external orientation and external markets. For these actors the requirements of control and safeguarding of their brand rapidly led to the need for traceability, which was to be

implemented mainly as a tool for interorganizational control through the sharing of product and process information (Chazen 1996).

As regards manufacturers in developed countries, they found themselves crushed between the low prices of their competitors who had acquired supply chains "overseas", and the heavy cost of resources in the country of origin. But the option of delocalization was at first to some extent discouraged by the presence of their investment in production infrastructures that were available in high factor cost countries, and by the implications (or feared implications) that delocalization would have for their brand policy.

Thus the actors endowed with production infrastructures in high factor cost countries have had to face increasing competition, in a situation where there is a lack of policies forging a rational link-up with final consumption that would provide support for higher prices in recognition of certain attributes characterizing their products. This has in some cases given rise to an interpretation of traceability as leverage for market power.

But some of these actors have progressively reduced the central role of production activities within their corporate strategy, in favor of building up their own marketing operations by capitalizing on their history and their competencies in terms of their brand and retail distribution. Thus while production has been de-verticalized, these actors have engaged in re-verticalization of the brands and the sales outlets (Jones 2002).

Furthermore, in newly industrialized countries a series of firms underwent a change in the 1990s and later: from being mere executors of productions carried out according to specifications defined by their customers in the developed countries – which were OEM (Original Equipment Manufacturing) – they became transformed into independent producers with own brands, assuming the profile of OBM (Original Brand Name Manufacturing). This signals an upgrading of the supplier, which can be summarized as recognition of a considerable capacity for learning in the countries in question (Gereffi 1999, 53).

Methodology and cases analysed

In this paper we make use of a multimethodological approach (Mingers and Gills 1999), integrating data collected by database and firm's annual reports, with findings emerging from a case analysis process (Yin 1994). The case analysis, referring to five firms operating in the fashion industry (Gruppo Coin, Benetton, Metro Italia Cash and Carry, Safilo Group, Centopercento Italiano), highlights some important aspects with regard to traceability,

especially considering either the interest in or the projects developed by each firm empirically investigated. The cases studied have been selected through a secondary research process aimed to find best practices in the field of traceability. The secondary research have considered mainly national and international academic journals, conferences proceedings on RFID technology, previous publications on cases of traceability, contacts with national and international opinion leaders. The case studies have been realized through in-depth interviews with managers responsible for different functions in the firms (sourcing function, quality function, external development department, marketing department).

In this paragraph, we propose a brief description of the firms involved in the case analysis process, with particular reference to business models and internationalization in terms of resource seeking (location of production facilities, internal production/outsourcing and sourcing strategies) and market seeking (integration of retailing functions and final market served). Afterwards, in the next paragraph, we propose some insights on the traceability concepts adopted by each actor. We focus on a comparison of the different implications (on a network perspective) emerging from each case analysed with regard to the relations with the other relevant actors in each specific supply network.

Gruppo Coin is a leading specialty retailer in Italy, in which it operates under the "Oviesse" and "Coin" brands. Each brand has its own positioning: Oviesse, in the medium-low-end market, Coin in the medium-high-end market. In particular, Oviesse offers mainly private label through "every day low price" strategies. Roughly 40% of the turnover in Oviesse is represented by women apparel. Coin brand operates predominantly with the retail format of the department store (either flagships stores or middle and small department stores), in which it proposes an assortment composed by own brands and well known fashion brand. Roughly 57% of the turnover in Coin is represented by apparel (women and men), while the remaining is represented by perfumes (12%), home textile (17%), accessories (13%). As of the end of 2006, Gruppo Coin operated with more than 300 stores (68 Coin, 276 Oviesse), the majority owns directly by the firm and a minor part in affiliation. The total turnover of the firms amount to 1.057,6 million euros, 68% of which generated by merchandise sold by Oviesse and 32% sold by Coin. For both brands, the Group sources garments from suppliers located either in Italy or overseas, mainly in South-East Asia.

Benetton is a global leading retailer in the clothing market. It is present in 120 countries with more than 5.000 stores and produces roughly 130 million garments every year. In 2006, 52% of revenues were earned abroad from Italy (which represents 48% of the total sales), of which 36% in Europe, 12% in Asia and 4% in the Americas. The fastest growing

markets were the Mediterranean Area, Eastern Europe, China and India. Benetton Group owns 55 firms, 40 of which abroad. The Group operates in each phase of the textile-clothing pipeline from raw material to garment production. In particular, the group, directly or through outsourcing, operates in: (a) the yarning and weaving phases (finishing, dying, ect..); the manufacturing phases (cutting, sewing, ironing, packaging, ect..); the distribution phases (wholesaling and retailing). Benetton decided to maintain direct control of the logistics activities and has invested heavily in automating logistics processes in order to achieve total integration within the production cycle, from customer orders to packing and delivery. The Group's new industrial set-up is based on a logical sequence of activities for minimizing costs and for a more rapid response to the changing markets. In order to reach these aims the group has proposed a rethinking in the planning of the activities of R&D, product design, production and sales.

Metro Italia Cash and Carry is a leading self-service wholesaler. It is part of the Metro Cash and Carry AG Group, one of the largest and most international retailing companies in the world, in which operates in 150 countries with around 2.400 stores. The brands of the group, besides Metro Cash and Carry, include Real Hypermarkets (329 hypermarkets in 5 countries), Extra Supermarkets (262 supermarkets in Germany), Media Markt (421 stores in 12 countries) and Saturns (162 stores in 8 countries), both Europe's leader in consumer electronic retailing, and Galeria Kaufhof, operating in the department store business. Metro Cash & Carry is the global market leader in self-service wholesale and at the same time also the most international retail brand with the highest sales volume at the Metro Group. It has 584 stores worldwide in 28 countries (47 in Italy) with total sales of 29.9 billion € and merchandise sold of roughly 20.000 articles of food assortment and roughly 30.000 articles of non-food assortment (including apparel). The business of Metro Cash & Carry aims at professional commercial customers such as hotel, restaurant and kiosk operators, caterers and small food retailers, hospitals, authorities, and to an increasing extent also service providers. Cash & carry means that the customers pick the goods themselves, pay cash and transport them with their own vehicles. The advantage as compared with conventional wholesale lies in the more favourable price-performance ratio, the scope of the food and non-food assortment, the immediate availability of the merchandise and the customer-oriented opening hours.

Safilo Group is a branded manufacturer. It is the second operator worldwide, in terms of revenues, development, production and wholesale distribution of products on the eyewear market (such as optical frames, sunglasses and sporting articles, among which ski and motocross goggles and technical glasses for other sports). The Group is world leader in the

high-end market (more than 100€ selling price) and manages a brand portfolio of own (Safilo, Oxydo, Carrera, Smith and Blue Bay) and licensed (Armani, Gucci, Liz Claiborne, Valentino, Dior, ect..) brands, selected based on the criteria of competitive positioning and international prestige. The Group has progressively expanded its brand portfolio to include licensed brands of the luxury and fashion world, establishing long-term partnerships with its licensors through contracts lasting 5 to 8 years, most of which are repeatedly renewed over the years. The Group directly controls the following activities: research and design of the product, production phases, quality control of internal production and products/components purchased from third parties, distribution (wholesaling) and logistics. The production is carried out in five factories owned by the Group, four of them located in Italy and one in Slovenia. The Safilo Group is present in approximately 130 countries, of which 30 through its direct sales branches, while in the remaining countries the distribution is carried out through over 170 independent distributors. Each branch coordinates a consolidated network of local sales representatives, which operate mainly in exclusivity, reaching over 130,000 retail outlets, including opticians, optometrists, ophthalmologists, retail chain stores, department stores and other specialised outlets.

Centopercento Italiano is a local consortium. Centopercento Italiano (Hundred Per Cent Italian) differs from the other cases either for its nature of a local consortium or for the minor dimensions in terms of financial and technological resources. The consortium comprises more than 50 producers located nearby Florence and around 2.500 workers. It is an interesting case for the impact of traceability in the network. From a local consortium of leather producers, mainly sub-contractors of luxury brand producers, during the last years it became a consortium which owns a brand (Centopercento Italiano) whose competitive advantage is based on the offer of a product fully “made in Italy”. In this case, the implementation of traceability and its communication to the final market, granted the integration of the distribution phases with the opening of a store of the consortium (named “I-place” where I stands for Italian) and the integration of the research and design of the collections (the design of the product and the research and development of new materials, technologies and manufacturing processes and instruments/machinery).

Table 3 shows a summary outline of the case studies presented for this paper proposing some insights with regard to sourcing strategies, production policies and markets served for each specific case.

Table 3. A summary of key elements of the cases proposed

Firm	Type of actor	Sourcing	Production	Market
Gruppo Coin	Pure specialty retailer	Global Sourcing	-	National market
Benetton Group	Industrial retailer	Global Sourcing	Global Production (internal and outsourcing)	Global market
Metro Italia (Metro Group)	Pure self-service wholesaler	Global Sourcing	-	National market (Global market)
Safilo Group	Branded Manufacturer	Mainly Local Sourcing	Mainly Local Production (mainly internal)	Global market
Centopercento Italiano	Consortium	Local Sourcing	Local Production (totally internal)	National market

The impact of traceability in the cases analysed

In this paragraph we propose some evidences on the impact of traceability in the cases analysed. In particular, we focus on two main issues:

- the concept of traceability adopted in each case, looking at the main topics in its implementation;

- the impact of traceability for the other actors in each specific firm's network, emerging from how the necessity for traceability has changed the way the specific company does its business.

In the cases analysed different concepts of traceability emerge, depending on the actor interpreting it. In particular, considering the cases, the two different concepts described previously emerge (table 4):

- traceability as a tool for inter-organizational control in the cases of Gruppo Coin, Benetton, Metro and Safilo;

- traceability as a tool for market power in the cases of Safilo and Centopercento Italiano.

Although these two concepts tend to prevail, each specific case differs from the other for the main topics (quality control, logistic efficiency, supply chain management, branding policies, etc..) which have led to the implementation of traceability mechanisms and rules. These topics shown in table 4, are described in the following part of the paragraph in order to find some trends and implications in terms of relations in the network.

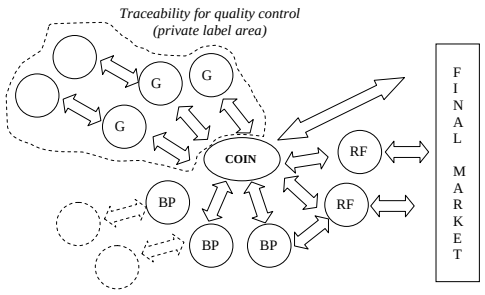
Table 4. Different concepts of traceability in the cases analysed

Name	Traceability concept assumed	Main topics
Gruppo Coin	Traceability as a tool for inter-organizational control	Quality control, Safety, Ethics, Biocompatibility
Benetton Group	Traceability as a tool for inter-organizational control	Logistic efficiency and supply chain management
Metro Italia	Traceability as a tool for inter-organizational control	Quality control, logistic efficiency, Product recall
Safilo Group	Traceability as a tool for inter-organizational control/traceability as a tool for market power	Quality control, Anti-counterfeit
Centopercento Italiano	Traceability as a tool for market power	Branding policies "made in Italy" Ethics quality

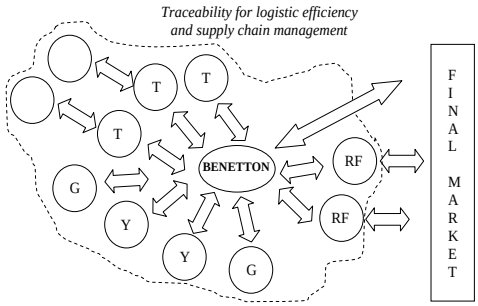
The possible implications in the network are shown in figure 1. In particular for each case the relevant actors in the specific business model according to the managers interviewed are presented. The outlined area in figure 1 delineates where in the firm's network the implementation of traceability generates a change in the relations with other actors. The grey outlined area is analogous, but it differs from the other because delineates traceability policies visible to the final market. This means that information on product and production processes reach the final market, granting the consumers a sharing of quite complete knowledge on the supply chain of the product. While in the first area we are in presence of a traceability concept as a tool for inter-organizational control, in the second area the traceability concept as a tool for market power emerges. In each case studies conducted we can deeply analyse which are the main implications for the actors in the network, exploring the different topics which have led to the implementation of traceability.

Figure 1. The impact of traceability: a network view

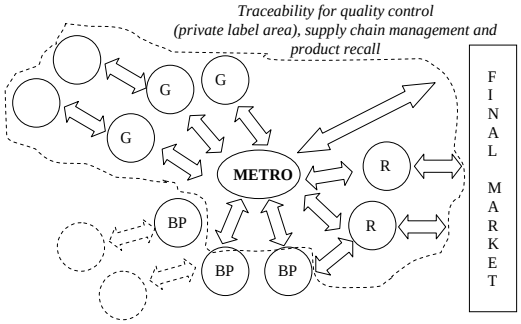
(A) Gruppo Coin



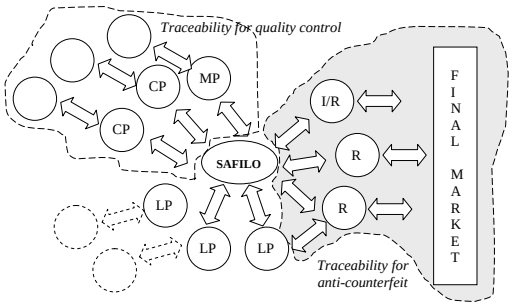
(B) Benetton Group



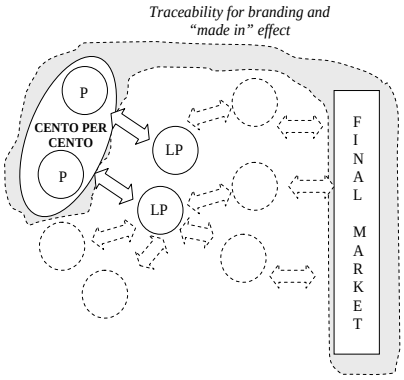
(C) Metro Italia



(D) Safilo Group



(E) Centopercento Italiano



G=Garment maker (manufacturing services for the firm)
BP= Fashion brand producer
F=Fabric supplier/producer
Y=Yarn supplier/producer
CP= Components supplier/producer
MP=Finished product supplier/producer
LP= Luxury brand producer
R= Independent retailer
RF= Franchisee (retailing)
I/R=Importer/Retailer
P=Producer

With regard to Gruppo Coin (Figure 1-A), the managers interviewed highlight that "…we need to know the history of the product…..all the information regarding raw materials, manufacturing phases…and the path of the product from production, to distribution to final market… of all the products which will be proposed in the assortment". This is particularly true for garments which will be labelled with the brand of the retailer (Oviesse, Coin). Clearly, these needs affect in particular the relation between Coin and the garment makers (G in figure 1-A) and it is well understandable if one considers the role of the private label in terms of guarantee to the final market and the buyer's role in the supply network of the own brand area. If we turn to consider the relations between Coin and fashion brand producers (national and international actors shown as BP in figure 1-A), one can argue a more balanced

situation (symmetrical power between the actors). In these cases, the fashion brand (instead of the retailer) guarantees the final market in terms of quality of the product. Consequently, in the Coin case the implementation of traceability have a more important impact on the relations between the retailer and its suppliers of garment labelled with the private label, especially in terms of stronger standards to follow in the manufacturing processes. In particular, in this case traceability is implemented as a way to preserve the quality of the garments and the need for safety, ethics and biocompatibility which are more and more requested by the final market. The term biocompatibility refers to either the impact of the production phases on the environment (for instance in terms of waste) or the safer use of the product by consumers (for instance reducing the risk of allergies).

Regarding to the Benetton case (figure 1-B) we have to highlight that the actor has a very complex structure in terms of supply chain due to its strong vertical integration in all the stages of the textile-clothing pipeline. In the last ten years, an heavy shift of sourcing from the national market to global markets has occurred, either for the purchasing of semi finished goods (yarn –Y - and textile - T - in figure) or for the request of manufacturing services (garment manufacturing – G in figure). More precisely, in the Benetton case the internationalization in terms of final markets has led to internationalization in terms of sourcing markets. The current dimension of the business model calls for an automating logistics process in order to achieve total integration within the production cycle and in order to grant the reliability of the entire process (from production to distribution). Consequently, in this case, traceability has been implemented to manage all the information regarding the products in real time, allowing the distributor to have fully control of the entire supply chain. Nevertheless, one can consider a different topic to be reached with traceability in the case of sourcing of garments produced by third parties (subsequently labelled with the brand of the retailer) with respect to garments produced (internally/outsourcing) by the retailer. Benetton purchases garments from third parties to adjust with more rapid response the assortment to the changing needs of the final markets (sourcing of “pronto moda” garments). This part of assortment, although minor, is growing more and more. For this merchandise the retailer necessitates to know the “history of the product” which will be labelled with its own brand in order to grant quality and others aspects as ethics, safety and biocompatibility (as in the Coin case). In the Benetton case, traceability has a strong impact for all the actor of the firm’s network, considering the need of the retailer to maintain an high level of control of the entire process.

With regard to Metro (figure 1-C) the managers interviewed emphasize how the firm has fully implemented the concept of traceability. This is testified by the "product recall system" which allows the retailer to recall products, just contacting the single customer in case for instance of imperfection of one of the product in the assortment. Traceability of the product and traceability of the customer are possible considering the nature of Metro. So together with the traceability of the product, Metro has a traceability system of the customer (allowed by the correct use of administrative data as invoices). In case of imperfection of a garment, the firm can immediately contacts the customer who bought it, substituting or refunding (avoiding mass communication and negative impact on the image). At the same time, Metro has the possibility to trace the "history of the product" in the case of a complaint, identifying the supplier who manufactures a private label product (G in figure) or the suppliers of an industrial product (BP in figure). However, the firm does not communicate to the market its "product recall system", but uses it only when problems emerge. The managers interviewed believe that solving specific problems is more effective than communicating by mass media that one can mistake. Besides product recall, traceability is implemented to preserve quality of garments as in the Benetton and Coin cases.

Safilo (figure 1-D) produces own products and licensed brands products (through relations with luxury firms LP in figure). Both are manufactured mainly in the five factories owned by the firm, where besides the manufacturing of single parts, components sourced by suppliers (CP in figure) are assembled. Only for a minor part of the production, Safilo purchases products from suppliers located nationally (for the high-end market) and in the Far-East (for the medium-end market) (both indicated with MP in figure 1-D). Traceability in the Safilo case has been implemented regarding two main topics: traceability as a way to fight against counterfeit, traceability as a way to preserve quality. The former is a theme particularly felt by luxury brands (LP) which ask Safilo for a major control in the retailing phase, either to avoid parallel markets (activated by retailers or importers) or to preserve image. Consequently, the firm asks for stronger standards (even formalized in contracts) to its importer/retailers (IR and R in figure). Furthermore, Safilo has its own interests in preventing counterfeit, especially for house brands which are launched in the market in order to test models and shapes to extend globally (especially through the luxury brand products). Protection of innovation is one of the main aims searched with the implementation of traceability. The managers interviewed underline that this is an important premise in order to maintain contracts with luxury and fashion brands. According to this perspective, traceability becomes a tool for market power, as it is more and more visible to the final market (outlined

grey area in figure 1-D). Even in this case, traceability aims to protect quality in a wide sense (as in the previous cases); so stronger standards are required to producers of components (CP) and to suppliers of finished product (MP).

Centopercento Italiano (figure 1-E) is a peculiar case, considering the role of traceability in changing the nature of the consortium. In particular, through traceability the Consortium has developed a brand, which has been proposed to the final market. Traceability has been implemented with internal guaranteed standard of "fully made in Italy" to take advantage of the so-called made in effect which is believed to be particularly appreciated by consumers (especially for Italian products). Currently, in the only outlet of the consortium each producer proposes a selection of its collection and contributes to the total sales of the consortium. In this case, traceability had a role in exploiting the specific abilities and competencies emerging from the relations with luxury brand producers. In the next years Centopercento Italiano wants to extend its retailing presence either nationally or internationally.

Table 5 proposes a summary of the main implications for the actors' relations in the case studies realized. In each specific network, traceability has different implications depending on the firm interpreting it and on the main aims reached.

Table 5. Main implications for actors' relations in the case analysis

Case	Main implications
Gruppo Coin	Stronger standards for suppliers in the private label area, in particular in terms of quality, ethics, biocompatibility
Benetton	Stronger standards in terms of logistic efficiency, supply chain management and quality control for all the actors in the supply network
Metro Italia	Stronger standards in terms of logistic efficiency and quality control for all the actor in the network, especially for the private label
Safilo	Stronger standards for suppliers of components and suppliers of finished products in terms of quality; Traceability asked by Luxury Brand for anti-counterfeit generates stronger standards for retailers/importers
Centopercento Italiano	Brand creation (internal guaranteed standard for "made in") and store opening generate more power in traditional relations with luxury brand producers

Final remarks

The theoretical and managerial implications emerging from the paper are connected to the evolution of buyer-seller relationship related to the new central role of traceability. In particular:

(a) Traceability's impact on buyer-seller relationships depends on a wide set of factors (e.g. contents of the shared information, coding and sharing technologies, actors involved in conducting and sharing processes). On the basis of case analysis of fashion firms proposed in this paper, the evolution of buyer-seller relationship results especially depending on the actors which gain access to the information and the aims underlying the activation of the traceability.

(b) The five cases analysed proposes a differentiated set of traceability strategies, but the aims of the traceability emerged as a relevant factor. More precisely, in a number of cases traceability can be recognized as a tool of inter-organisational control in buyer driven supply chain where retailers or branded marketers can share information improving efficient sourcing processes. In those cases final customer and more precisely the consumers can be excluded from information sharing when sourcing alternatives are not differentiated in the firm strategy. The concept of traceability as a tool for market power is linked to sharing information with consumers. In the cases analysed this can help branded manufacturers to generate more power in relations with their traditional customer.

(c) Traceability concept adopted results connected to the supply chain typology (global/local), while for global network traceability could be linked with supply chain management and logistic efficiency for local networks it could be linked to the building of a brand, as the so called "made in" effect, or to protect brands against anticounterfeit. Our data seems to provide evidence that the current supposed correspondence between market power/local supply chain and interorganizational control/global network does not necessarily remain unchanged over time. Rather, the present status of these alternatives seems to be the outcome of the current situation.

Moreover, even if the main aim of this paper was to develop a framework to evaluate the impact of the implementation of the traceability process on buyer-seller relationships along the supply chain, case analysis seems to highlight that buyer-seller relationships can have an impact on the traceability concept adopted: it does not seem a one way cause-effect link. Buyer-seller relationships can have a role in changing the way the dominant actor interprets traceability and its contribution to value creation. Considering this, in our view, further research should study the perspective to integrate the two concepts of traceability through a more cooperative way, by emphasising the role of the buyer-seller interaction and how it shapes the concept of traceability. Empirically, future research should include findings emerging from the firms' partners in each specific network.

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