

# Logistics and Supply Chain Management Investigation: A Case Study

Ngoc Hong Tam Dao<sup>1</sup>, Jay Daniel<sup>2,\*</sup>, Stephen Hutchinson<sup>3</sup>, Mohsen Naderpour<sup>4</sup>

<sup>1</sup> International College of Management  
151 Darley Road, Manly NSW 2095, Australia

<sup>2</sup> Derby Business School, The University of Derby, Derby, UK  
Kedleston Rd, Derby DE22 1GB, UK  
J.Daniel@derby.ac.uk

<sup>3</sup> Ubisoft Australia  
14 Mountain Street, Ultimo, NSW 2007, Australia  
Stephen.Hutchinson@ubisoft.com

<sup>4</sup> Faculty of Engineering and IT, University of Technology Sydney  
15 Broadway, Ultimo, NSW 2007, Australia  
Mohsen.Naderpour@uts.edu.au

**Abstract.** This paper investigates several aspects of logistics and supply chain management such as advantages of a full model of logistics and supply chain management. In addition, it also details a series of challenges in logistics and supply chain management in general and in the computer and video game industry in particular. It also focuses on some popular models and the common trend in logistics and supply chain management. Especially, it analyses the logistics and supply chain model of Ubisoft Australia – a computer and video game publisher. By conducting interviews and observations together with gathering company internal records, it points out some potential problems of Ubisoft Australia with the software system, communication and information flow in inbound logistic and non-conforming returns. Finally, several recommendations are made for future improvements.

**Keywords:** Reverse Logistics, Supply Chain Management, Video and Game Industry.

## 1 Introduction

Recently, globalization has widely spread out all over the world and brought many benefits for international business. Although global expansion offers a huge number of opportunities, it is undeniable that there are also several disadvantages. Among those challenges, fierce competition is of most concern for all business owners. Consequently, the effective logistics and supply chain management that provides the best customer services, high quality of products and cost-effectiveness has become

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\* Corresponding Author

the key factor that directly affects the survival of an organization [1]. For the computer and video game industry, according to [2] and [3], it is an extremely competitive industry that evolves rapidly, which features a new generation of consoles, where technologies and new companies can appear or disappear at each generation. As a result, in order to remain profitable and competitive it is essential to have an agile, adaptable and efficient supply chain. In other words, this industry requires a dynamic logistics and supply chain management providing the right services and products to the right location at the right time with the right quantity and quality for a competitive price [3].

Having realized the increasing importance of logistics and supply chain management as an effective and efficient process to maximize profitability as well as minimize the cost, Ubisoft Australia has been developing this process since the business was expanded to Australia in 2001. However, a recent review of logistics and supply chain management activities identified a number of potential problems due to several factors such as higher level of customer service requirements together with the fierce competition from rivals [23,24]. This study aims to review the logistic and supply chain management mechanism at Ubisoft Australia, to identify the challenges, to make recommendation to reduce the limitations, and to propose suggestions for future developments. To achieve this, a combinatorial methodology is proposed and implemented in the case study environment.

The rest of the paper is organized as follows. Section 2 represents the literature review related to this study. Section 3 describes the research methodology. Section 4 provides the results and a brief discussion. Finally, Section 5 concludes the paper and presents some further research directions.

## **2. Literature review**

Logistics and supply chain process is described as a flow of activities involved, directly or indirectly, from materials sourcing to the distribution of finished products to customers [4]. In details, this process includes all parties such as material sourcing, material purchasing, inbound logistics, operations and outbound logistics to ensure that the customer's requests are received and fulfilled [5]. According to Khalili-Damghani et al (2015), this process is mainly known as the flow of traditional logistics or the process of forward logistics. Forward logistics is divided into two phases: inbound logistics and outbound logistics. Inbound logistics includes all aspects of material sourcing, material purchasing, transporting to factories. Meanwhile, outbound logistics handles the rest of the process such as the transportation of the finished goods to warehouses or distribution centers, then from the warehouses or distribution centers to customers. In general, forward logistics has been considered as an essential fundamental of an organization operations to ensure the input and output of products or services [6].

Customer service and satisfaction are crucial for staying in the business and competing in the marketplace as well as fulfilling regulatory obligations in countries such as Australia. For this to happen, logistics and supply chain process is not limited to the forward logistic. It has expanded to the process of dealing with faulty stock

which is called reverse logistics that consists of all parties involved such as faulty stock collecting, sorting, repairing, re-manufacturing and recycling [7].

Reverse logistics has been more and more popular because it has been considered as one of the effective solutions that help the companies improve customer service level and reduce the negative impacts of faulty stock on the environment [8]. Therefore, it plays an important role in gaining competitive advantages, increasing the corporate social responsibilities as well as the reputation of the companies [25]. A full model of logistics and supply chain process that integrates both forward and reverse logistics are shown in Fig. 1. It is definitely important to have a logistics model that is operational and cost effective in both forward and reverse logistics [9].

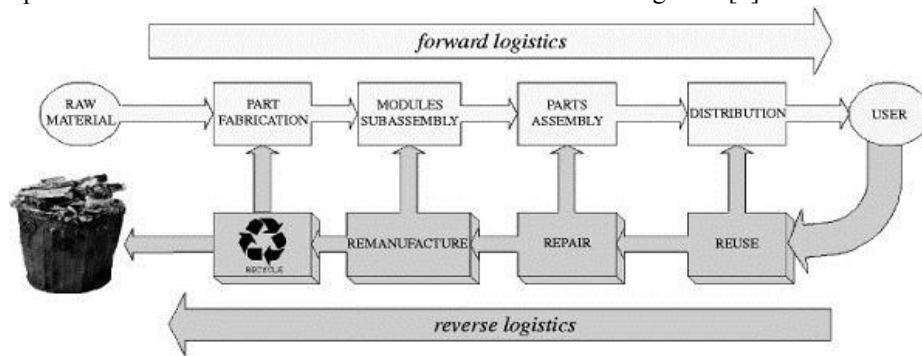


Fig. 1. Integrated forward and reverse logistics process [8].

## 2.1 Logistics and Supply Chain Management Challenges

The integrated model of logistics and supply chain process is a complex system that gives not only a certain number of opportunities but plenty of challenges also. Im and Deek (2011) claimed that software integration is one of the most challenging elements in the process of logistics and supply chain management [10]. It is undeniable that software integration has brought many advantages to effective control and operations of purchasing, transportation, manufacturing, inventory, and payment [11]. However, due to the integration of many functions with the involvement of many parties (the company itself, material suppliers, manufacturers and even customers), software integration has become complicated and difficult for the company's operations. Likewise, the researches of Enriquez et al (2015) and Gambetti and Giovanardi (2013) also point out the challenges in logistics and supply chain management [12, 13]. However, they focus on other aspects that are called communication flow and information flow in global logistics and supply chain management. Poor communication leads to different problems in the supply chain such as sending wrong products and quantities to customers, missing or late deliveries which impact on delivery in full on time (DIFOT).

Another challenge in logistics and supply chain management that has been more and more of concern is faulty stock returns or reverse logistics [7]. Reverse logistics process is to deal with the collecting, handling and returning of faulty stock which

increases time and cost in the supply chain. Besides the above challenges, demand forecast, network relationship building, transportation, inventory and green logistics and supply chain, in general, are also considerable problems in logistics and supply chain management in general [14].

In the computer and video game industry, the logistics and supply chain management has not been limited only to these challenges but also to some other typical challenges such as embargo issues and digital – physical distribution [15, 16]. It is usual within the video games industry to have a strict global launch date for a new product. Failure to control access to a new product can have repercussions in territories beyond our own country. Product may be destined for store, end-user customers or journalists who are reviewing the product and it is important that strict delivery guidelines are adhered to. Distributors such as Ubisoft must have a calculated and extensive control over all areas of the supply chain to ensure that street dates are adhered to. Embargos are placed on stores preventing them from selling any stock early. Attention is paid to delivery schedules to avoid having stock delivered too early thus reducing the risk of street dates being breached [17].

Another challenge that has been of concern to all game publishers in recent times is the increase in digital distribution. Although the increase of digital distribution has brought many advantages, there is a very large number of obstacles which have implied negative impacts on a retail chain, or which could even lead to the disappearance of retail outlets in the future [15]. However, it is argued that physical distribution has its own strengths which help this form of distribution continue running in the video game industry, especially the “hands-on experience” at retail outlets that the digital distribution can never have. Therefore, in the future, although the physical distribution has declined, dual distribution channels will be maintained.

## **2.2 Popular Logistics and Supply Chain Management Models**

A 3PL model is a form of outsourcing activities that are related to logistics and distribution. The benefits that a 3PL provider can offer are a vast resource network, expertise, scalability and flexibility, continuous optimization, time and money saving. Obviously, with a 3PL provider, the company does not spend time to take care of the behind-the-scenes tasks; therefore, the company can focus on other tasks such as sales, marketing and business development [18].

Drop shipping is another method in logistics and supply chain management in which the goods are directly delivered to customers without passing through the distribution centers or warehouses. Therefore, the sellers can save time and costs for warehouse, stocks, inventory, shipping and administration fees.

In contrast with the drop shipping model, the “hub and spokes” model is enhanced with a distribution center (“hub”) when the goods are consolidated before delivering to customers (“spokes”). Strategically the hub is usually at a good location that is more convenient for the product transportations from suppliers/manufacturers to the “hub” than from the “hub” to the “spokes” [5].

Under the pressure of fierce competition in the global market, companies are forced to change or think of new methods to improve their process, customer satisfaction and stay ahead in the game with their rivals. In recent times, anticipatory

shipping technique has been considered as the latest approach in logistics and supply chain management patented by Amazon. This method is mainly based on Big Data and predictive analysis. In detail, based on the “previous browsing behaviors” and buying decisions of customers, Amazon can predict which items and the quantity their customers would like to buy in the near future; then they will arrange delivery to an Amazon hub in the geographically related region before their customers officially purchase these items. The key strengths of this method are faster delivery and additional sales. Although this method still has much debate about its pros and cons, it has still been considered as an innovation in logistics and supply chain management [19].

### **2.3 Ubisoft Australia Logistics and Supply Chain Model**

Ubisoft is a world leader in creating, publishing and distributing of interactive entertainment and services, especially computer and video games. As per game revenues ranking, Ubisoft Group has become one of the top 10 public companies with a rich portfolio of world-renowned brands [20]. Through its worldwide network of business offices and studios, Ubisoft provides memorable gaming experiences across all popular platforms [21]. Ubisoft Australia is a branch of the global Ubisoft group. It is a business office with around 30 staff allocated in four teams - Marketing, Sales, Finance and Operations. The business sells products not only to retailers in Australia and New Zealand but also to online games stores.

The logistics and supply chain model of Ubisoft Australia has been considered as a typically full model with forward logistics, reverse logistics and 3PL with the combination of drop shipping and “hub and spokes” logistics model as presented in Fig. 2. The inbound flow from production is managed in conjunction with the head office team to draw stock from local factories as well as manufacturers in other parts of the world. Depending on demand volumes orders can be shipped directly from manufacturers to the retail/wholesale distribution centre or channeled through the 3PL warehouse. Stock can be cross-docked through the 3PL for urgently required orders; or stored at the warehouse until required. Utilizing the 3PLs courier partnerships, stock is transported to its required destination based on the needs of Ubisoft's customers. The orders are transported to the courier's main distribution centres before being redirected to regional DC's and depots. Finally, they are delivered to the store docks either by the courier or sub-contractors. In some cases, the orders then become inducted into the retailer's supply chain for distribution to their own store network. In circumstances where customers need to return stock to Ubisoft, an authorization is sought by the customer. Once this request has been approved, goods are collected from either the store or their reverse logistic warehouse using the 3PL's carrier. Once returned to the warehouse the goods are checked for conformity before reworking or destruction.

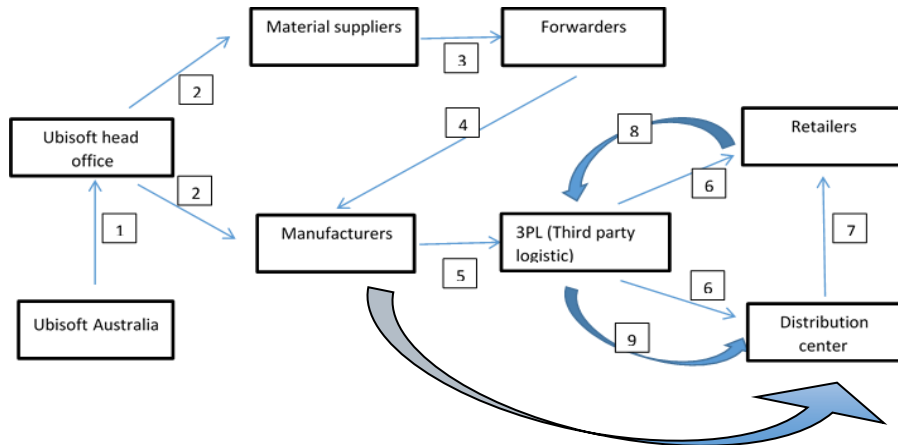


Fig. 2. Flow chart of Ubisoft supply chain.

### 3. Methodology

The proposed methodology is a general research methodology that can be used in other domains as well as in the computer and video game industry. The methodology is organized in three phases: 1) Data collection, 2) Data analysis and 3) Suggestions that are detailed in the following sub-sections.

Table 1. Interview questions.

Question	Description
Q1	Which aspects of Ubisoft's supply chain are you most concerned about? Please can you explain your concerns?
Q2	As a 3PL of Ubisoft, could you please let us know the advantages and disadvantages you have met when processing Ubisoft orders?
Q3	Could you please tell me more details about the stock returns and stock destruction?
Q4	How can we know that the stock destruction process was completed?

#### 3.1 Data Collection

The research focuses on both qualitative and quantitative data. The qualitative data includes in-depth structured interviews and personally structured observations. This also paves the way for the quantitative data collection.

- **Qualitative Data**

The first in-depth interview is conducted with Ubisoft Australia operations team (one Operation Director and two Operation Coordinators) with open-ended questions

regarding the aspects of logistics and supply chain system of Ubisoft Australia with more concerns and their reasons. The second in-depth interview is conducted with 3PL warehouse supervisor with open-ended questions about the advantages and disadvantages when processing Ubisoft orders and how they dealt with the stock returns.

Another source of data is structured observations about the communication and information flow of inbound logistics of Ubisoft Australia.

- **Quantitative Data**

The following quantitative data is collected:

- Stock return quantity in 2014 and 2015.
- Ubisoft terms and conditions of stock returns.
- Pictures of stock return reasons.
- Competitors' activities about stock returns.

## **2.2 Data Analysis**

In the data analysis stage, a thematic analysis is conducted to look across all the data to identify the common issues that recur, and identify the main themes that summarizes all the views collected. This is the most common method for descriptive qualitative projects. The key stages in a thematic analysis are to:

1. Read and annotate transcripts.
2. Identify themes.
3. Develop a coding scheme.
4. Code the data.

## **2.3 Suggestions**

This phase follows immediately behind data analysis to provide some suggestions for improvements. Suggestion is a creative process during which new concepts, models and functions of artifacts are demonstrated.

# **4. Results**

## **4.1 Interviews**

The results of interviews with Ubisoft Operation team and 3PL warehouse supervisor are summarized as follows:

- Q1. According to Operation Coordinator 1, the software system that has been used at Ubisoft for nearly one year is very complicated and slow. It takes more time to handle the works in comparison with the old one. The software problem is also confirmed by Operation Coordinator 2 when he claimed that sometimes, the

errors occurred and caused the interruption of the daily workflow. There was no choice to input the records into the system manually in order to keep the workflow running smoothly, which takes time to raise SOS-tickets to IT team at head office in France for checking and giving further instructions.

- Q2. Another issue which was raised by Operation Coordinator 1 is the return authorization. At present, although Ubisoft does not have many stock returns, if this issue is not managed well, it will become an issue in the future. As a result, the increase of non-conforming returns is implied. Same as Operation Coordinator 1, Operation Director also worried about non-conforming returns and its consequences on how to maintain good customer service but not increase costs. Finally, another concern is related to embargo commitment. It is a feature of the computer and video game industry. So far, Ubisoft Australia has never had the problem with retailers about embargo commitments. According to 3PL Supervisor, her company and Ubisoft have had a long time working together so the advantages are that they have a good relationship and they are familiar with all requested procedures and documents as well as commitments with Ubisoft. With regard to disadvantage, stock returns have become a matter of most concern.
- Q3. 3PL Supervisor claimed that there are several difficulties. The first issue is related to the receipt of stock returns. Some retailers, such as retailer 1, retailer 4 and retailer 5, have consolidation of stock return so it does not take a lot of time to receive the returns. However, retailer 2 is another case because its stores make independent claims and returns; therefore, it takes more time to handle the receipt of stock returns. Another issue is about the time consumed in sorting because there are many stock returns without labelling. The last issue that is also related to time-consuming is non-conforming stock returns. With these returns, it really takes time to separate, check, and report to Ubisoft the quantity in details and wait for the instructions from Ubisoft. It is related to not only time-consumption but extra cost also.
- Q4. The process of stock returns and stock destruction is completed when a certificate of destruction that clearly mentions the destruction quantity is issued to Ubisoft right after the stock return destruction finishing, stated by 3PL Supervisor.

## **4.2 Observations**

The observations show the typical flow of communication and information of Ubisoft Australia inbound logistics has seven stages as below as well as presented in Fig.3:

1. Ubisoft Australia places a demand to Ubisoft head office in France.
2. Ubisoft head office places orders to Material/Component Suppliers and Local Manufacturers, and contacts Forwarder companies.
3. If there is no problem about materials/components, Local Manufacturers will go ahead with production.
4. If not, Local Manufacturers will contact Ubisoft head office and Ubisoft Australia.
5. Ubisoft Australia comes back to Ubisoft head office.
6. Ubisoft head office checks with Material/Component Suppliers.



7. Then Ubisoft head office updates the information to all parties (Ubisoft Australia, Forwarder companies and Local Manufacturers).

From the above communication and information flow, it is clear that Ubisoft head office has controlled all information and played the main role in communication with all parties.

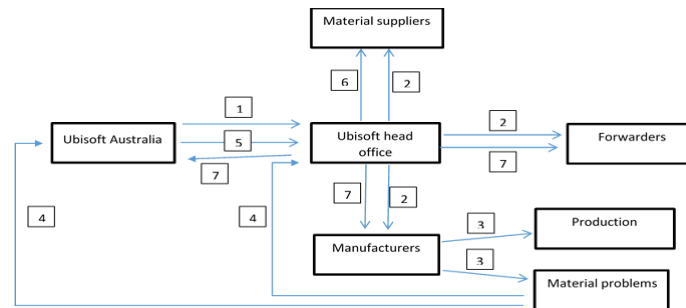


Fig. 3. Flow chart of communication in inbound logistic.

#### 4.3 Quantitative Data

- Stock return quantity in 2014 and 2015: As per internal reports of Ubisoft Australia, total stock return quantity in 2014 was 5,352 units; meanwhile, the total stock return quantity in 2015 was 14,976 units. It means the stock return quantity was nearly triple in the period from 2014 to 2015 (Fig. 4).

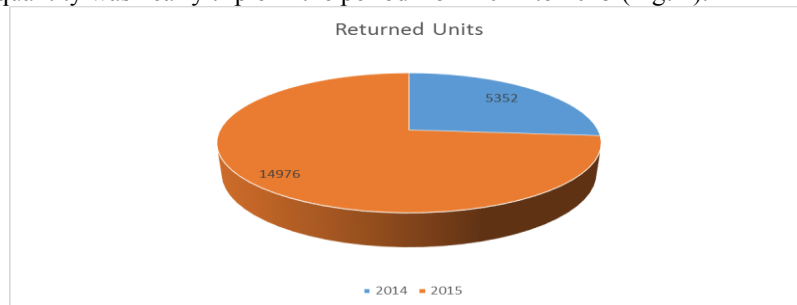


Fig. 4. Stock return quantity [22].

- Ubisoft terms and conditions of stock returns: As per terms and conditions of stock returns, Ubisoft Australia only accepts the returns of the stock with the below conditions:
  - The stock is faulty and
  - The stock is purchased from Ubisoft Australia directly, and
  - The stock carries the valid return authorization from Ubisoft Australia, and

- All authorized returns must be sent back within 30 days of receiving the return authorization

Overall, these terms and conditions of stock returns aim to prevent the returns of non-conforming stock.

- Stock return nonconformity evidence: Some evidence of stock returns that were collected while Ubisoft Operation team had a random check of the stock returns before destruction show some reasons for return such as “Didn’t like it” or “Seven-day return”. Actually “Didn’t like it” return and “Seven-day return” are not promotion programs of Ubisoft Australia, but for some retailers to attract their customers. These reasons are obviously out of Ubisoft Australia terms and conditions for stock returns. In other words, it shows that the retailers do not strictly implement the Ubisoft Australia terms and conditions of stock return.
- Competitors’ activities about stock returns: Through competitors’ activities, all competitors have used ullage agreements with their retailers and each competitor has its own terms and conditions to deal with the problem of stock returns. In general, these terms and conditions are almost the same and they aim to limit the cost and quantity of stock returns, especially non-conforming returns. However, at present, stock returns and non-conforming returns are unavoidable.

#### **4.4 Challenges Identified**

From the data analysis, three main potential problems related to Ubisoft Australia logistics and supply chain management are determined:

- Ubisoft recently implemented a global Enterprise Resource Planning (ERP) system in the Australian subsidiary. Switching from a bespoke localized system to one designed to manage a multi-site global enterprise has impacted flows within the supply chain due to inflexibility. The reliance on technical support facilities in other countries and other time zones has led to a less responsive process of error correction and bug fixing. There have also been issues with the change management process as a result of this implementation. As is typical in new system integrations, it can take many months for the users to be comfortable with the new tool.
- Ubisoft uses the resources and buying power of its head office to drive competitive costs and service levels from major manufacturing partners. At the same time the local Ubisoft team is able to use their geographic proximity and logistics skills to coordinate reactive and personalized procedures to facilitate the efficient manufacture and delivery of goods. Sometimes there are ambiguities in the roles of the centralized office acting as both a supply partner and a head-office. Obviously, Ubisoft Australia have not shared all necessary information and not been involved in whole communication loop with all related parties to support the local manufacturers promptly, especially whenever the local manufacturers have problems with their input. Therefore, there is a very large potential of delays in production.
- Based on the current returns policy, volumes of product returned under a faulty status will inevitably increase in direct proportion to the number of units sold into retail. It is clear from examining random samples of returned goods that many of

these products would fall under a category of non-conformance. In other words, Ubisoft should not be obligated to facilitate the return of these products or issue a subsequent credit.

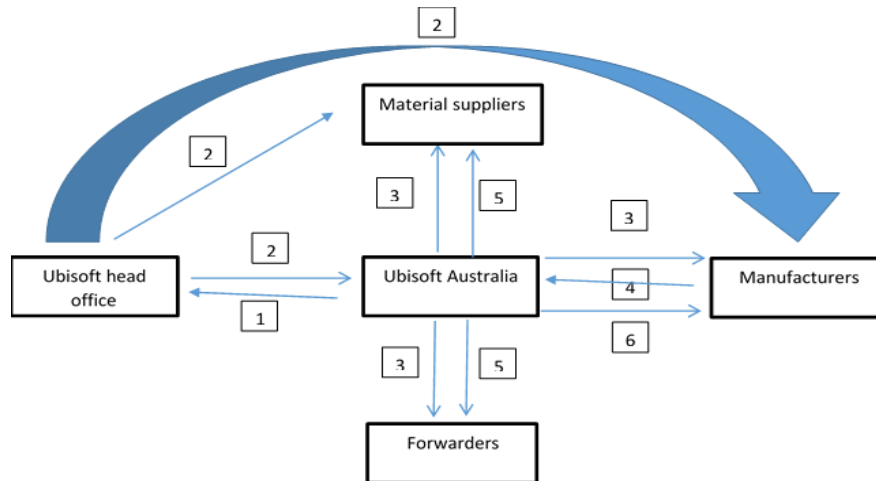
#### **4.5 Recommendations**

Recommendation 1: It is clear that supply could be improved and obstacles more easily overcome with a greater sharing of information by the central office. Similarly offering the local office more autonomy in the decision making whilst still exercising the purchasing power over suppliers would lead to a more versatile logistics flow.

Recommendation 2: Regarding communication and information flow in inbound logistics, to avoid potential delays for production, Ubisoft Australia should be more active and involved in material delivery management as well as production control. In detail, the communication and information flow should be changed as represented in Fig. 5.

1. Ubisoft Australia sends the demand request to Ubisoft head office in France
2. Ubisoft head office places the material orders to material suppliers, bulk orders to local manufacturers then shares information about BOM (Bill of Materials), specifying which material items are placed at which suppliers and delivery schedule of all materials with Ubisoft Australia
3. Ubisoft Australia will follow up the rest of the process. For example, they will directly contact material suppliers to remind them of the shipment schedule to ensure the materials are shipped on-time, then they should contact forwarder company for shipment arrangement, and they should closely work with local manufacturers to update the shipment schedule of all materials/components so that the local manufacturers can arrange their production plan accordingly.
4. In case the local manufacturers have problems with material/components delays or material quality, they will contact Ubisoft Australia.
5. Ubisoft Australia has to double check with material suppliers and freight forwarder company.
6. Ubisoft Australia then updates local manufacturers with required information from material suppliers and forwarder companies.

This communication and information flow helps Ubisoft Australia work closely with all related parties and proactively solve the problems in inbound logistics instead of relying on head office in France. Therefore, the potential delays in local production can be considerably avoided.



**Fig. 5.** Suggested information flow in inbound logistics.

**Recommendation 3:** With the stock returns problem, there are several ways to deal with this problem

- Instead of random checking, a suitable sampling system of returns quantity should be used to find out which ones are really defective and authorize returns. It is better to keep a regular record and reporting made of non-conforming product and that this information be shared with relevant parties including the retailers who have returned the goods.
- Refuse credit for non-conforming returns or challenge non-conforming returns (reverse credits).
- Change the model of return by return collection – repair – resale the good ones and destroy the unrepaired ones instead of destroying all returns. In some circumstances it may be possible to refurbish returned products for resale (as is the practice in the video industry) thus reducing production costs and the impact on the environment due to over-production.
- There may be opportunities to establish an ullage agreement with some retailers which would see them managing their own faulty/damaged items without returning the goods. This would see them receiving extended rebate terms as an off-set for absorbing the costs of faulty returns from their own customers. The issue with this is that the distributor never has the ability to check or derive proof of any faults in their games. On the other had it dramatically reduces the costs of the reverse logistic function.

#### 4.6 Implications for Practice

- Software system: The software system was designed not only for Ubisoft Australia and supply chain management but for the worldwide system and other purposes also, for example, accounting and financial control. Moreover, this

software system has been run for nearly one year; that is long enough to know which problems or which difficulties have been caused. Therefore, it is really necessary and urgent to re-design and upgrade the software system so that it is significantly more convenient for all related stakeholders.

- Inbound logistics: Potentials of material delays that affect bulk production can be totally avoided with a better communication and information flow. In other words, Ubisoft Australia Operation Coordinator might spend more time following all material delivery schedules, working closely with material suppliers and forwarder companies as well as local manufacturers.
- The effects of stock return on sales volume: Although the stock return was suddenly increased (5,352 units in 2014 - 14,976 units in 2015) and Ubisoft Australia has found some non-conforming returns by random checks, as per Ubisoft terms and conditions of stock return, they could refuse credit for non-conforming returns or challenge non-conforming returns (reverse credits) but they did not do this because they have been totally aware of the negative impacts on sales volume and the importance of the good relationship building with retailers. In other words, they have accepted this cost of non-conforming returns as the “cost of doing business” [22].
- Consequences of non-conforming returns: There are two kinds of non-conforming returns. The first one is faulty but returned without authorization from Ubisoft. The other one is not faulty but has implied the sales returns. At present, Ubisoft and all rivals in computer and video game industry are trying to deal with the non-conforming returns smoothly to avoid the conflicts and the negative impacts on their business relationship with the retailers. However, the solutions that they have applied cannot solve this problem thoroughly.
- For future development: To maintain the sustainable development and stay ahead in the game with their rivals, Ubisoft Australia is forced to change or think of new methods to improve their processes for cost saving and customer satisfaction.
- Software integration with retailers: Currently, Ubisoft Australia software is only integrated with local manufacturers. However, a better collaboration with retailers via software integration might avoid the sales return. Information integration such as sell-through data and stock in store currently exists between Ubisoft and some of its retailers. There is also some use of vendor managed inventory at store which is managed via a third party. With the emergence of new supply-chain focused retailers into the Australian market customer satisfaction will be improved by finding greater synergies with the retailer’s supply models. It can help Ubisoft Australia to control the available stock at retailers’ stores and adjust their supply. A good example of this method is the cooperation between P&G and Amazon that helps both P&G and Amazon save cost, allocate and control the stock and inventory well. This solution has also contributed to the limit of sales returns because both Ubisoft Australia and retailers have a better collaboration in demand forecasts and stock allocation as well as inventory.
- Logistics and supply chain model: At present, Ubisoft Australia uses a typically full model with forward logistics, reverse logistics and 3PL with the combination of drop shipping and “hub and spokes” logistics model. To save the cost of distribution center operations and utilize the advantages of the new trend in

logistics and supply chain management, Ubisoft can consider the logistics and supply chain model with forward logistics, reverse logistics and 3PL with the combination of drop shipping and anticipatory shipping instead of “hub and spokes” logistics. This new logistics and supply chain model allows Ubisoft not only to cut cost for distribution center administration fees but to enhance a higher level of customer services also with anticipatory shipping method as the stock will be delivered faster than the old way. However, due to the embargo commitments with retailers – a key feature in the computer and video game industry – anticipatory shipping should be applied for re-orders. For the new releases, Ubisoft Australia just needs the drop shipping.

## **5. Conclusion and Future Work**

The paper reviews several aspects of logistics and supply chain management in general and in the computer and video game industry in particular. In addition, it analyses the logistics and supply chain model of Ubisoft Australia – a computer and video game publisher. The results highlight the problems of Ubisoft Australia in the software system and communication and information flow in inbound logistic and non-conforming return areas. Finally, several recommendations are proposed to cease the problems.

This research offers several directions for future research such as the disadvantages of drop shipping, anticipatory shipping, software system integration between publishers and retailers/customers, as well as the difficulties related to a higher level of demand forecasts in the computer and video game industry in general and in Ubisoft Group - Ubisoft Australia in particular.

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