GS1 ®

Case study : Traceability in Fresh Foods
Implementing traceability for fresh poultry - Arrivé (France)

Contents

1- Introduction

This case study presents a real life implementation of the GS1 Global Traceability Standard and related GS1 standards.

This case study aims at helping other companies to implement traceability with GS1 standards and the right tools to do so.

2 – Company background

Created in 1950 in Vendée (France), the Arrivé group employs 3000 people, with a turnover of more than €500 million.

It ranks third in the French fresh poultry products market.

Arrivé's upstream partners	
Main regions	Breeding surface
Vendée and neighbouring area (Standards, certification, labels) 32 million head	480,000 m^2
Landes (Labels) 12 million head	250,000 m^2
Auvergne (Standards, labels) 12 million head	180,000 m^2

Arrivé is one of the poultry leaders on the French market, with a global supply and production chain, starting from raw materials and feed factories through consumer packaged products (fresh and frozen).

Within 13 different factories in 3 regions of France, Arrivé leads the French value-added poultry market with top brands such as Maître Coq, Volailles des Landes and St Sever.

- C.A. Volailles Classiques
- C.A. Volailles Élaborées
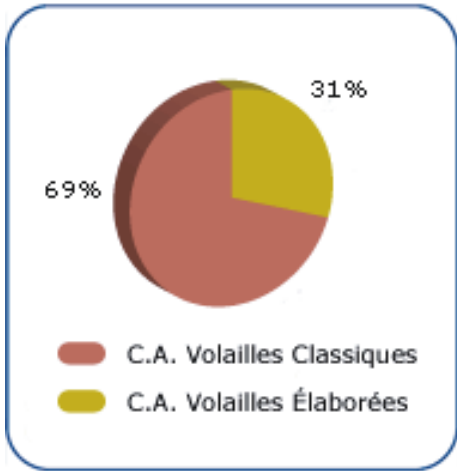
The Arrivé catalogue is based on a wide range of products (whole poultry and cuts, roasted, cooked, stuffed, etc.) and animals (chicken, turkey, guinea fowls, rabbits, etc.).

From the beginning, Arrivé has been an actor in the French high quality poultry market called Label Rouge.

Label Rouge poultry must comply with a very high set of quality requirements as well as a complete traceability process management, which explains why traceability and safety belong to Arrivé's culture right from the start.

3 – Company challenge

a – Poultry production chain: long & complex

The everyday challenge of a company such as Arrivé seems quite simple: to insure the highest food quality and safety standards throughout a complex production chain.

To achieve this goal, Arrivé has, from the beginning, based its strategy on strong partnerships with farmers and its main European customers (wholesalers, food industrialists, retailers, food services, etc.) and of course consumers. In this area, Arrivé has been among the first French poultry companies to launch its brand (Maître Coq) aimed at creating a relationship of real confidence with consumers as well as fulfilling their expectations with a number of innovative and often awarded poultry products.

Furthermore, since 1966 Arrivé has had to comply with French food regulations, especially meat production with the specific requirements of the French Label Rouge.

But the longer the production chain, the more companies need to set up a quality and safety management system at each point of this chain to insure that any product coming up to market complies with quality and safety requirements.

Critical points:
- within a poultry chain, traceability is not only a matter of "one up   -one down"
- *it is a matter of many steps and many partners*
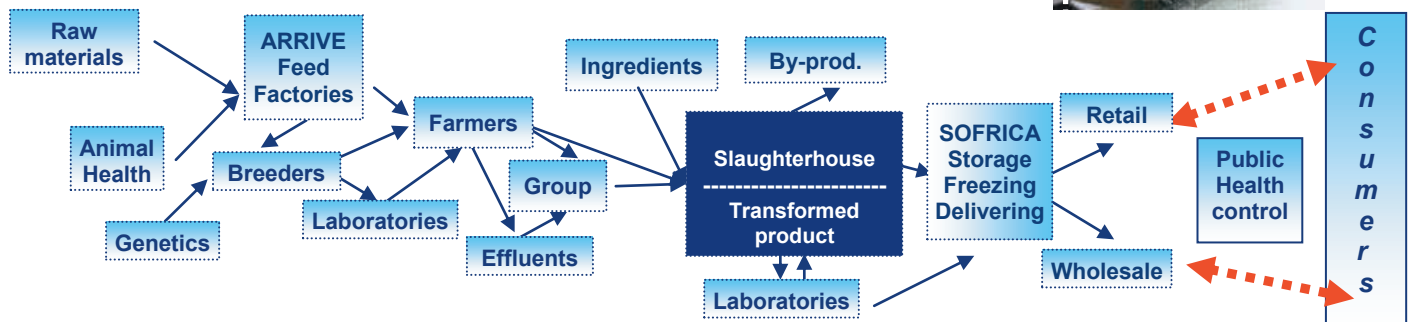- *it is a matter of global quality and safety management*

b – The late 90's: the beginning of food crises

Like many others, Arrivé was confronted with several crises in the standard poultry field
- 1996   BSE disease,
- 1998   the first dioxin crisis
- 2003   a second dioxin crisis
- 2004   the beginning of the avian flu in Southeast Asia
- 2006   the spread of avian flu in Europe

Arrivé has been able to "learn" from each of these crises and to anticipate future events by devising a complete traceability management system, which had to cover the whole production chain:
- from raw materials (involved in dioxin issues)
- to feed factories (involved in salmonella issues)
- to livestock (involved in avian flu issues)
- to final products (involved in recall and withdrawal issues)

The most critical incident occurred when, at one point of one production chain, a contaminated product was let through to the point of sale and was sold to consumers. Then control and health agencies intervened and required every product similar to the suspected ones to be recalled and/or withdrawn.

In this typical crisis case, the time a company spends to identify every incoming and outgoing item within its own chain and the time it takes to furnish proof to health control agencies (even if there was absolutely no problem with those products) are very expensive.

Therefore Arrivé made the decision, even before the new European Food law (EC 178-2002) was applied in 2005, to set up a different IT system able to achieve global traceability.

Critical points:
- *food safety crises making main customers very particular about traceability*
- *need for lowering logistical time response*
- *inability of paper-based quality management to fulfil these expectations*

## c – The late 90's: arrival of the IT system

To fulfil this objective, Arrivé began setting up an IT system at each step of the process where an IT system could manage the quality and safety process faster and cheaper than a paper-based one. Like many companies in this field, Arrivé was obliged to install the "new" system on top of its existing technologies. They came up with a global process covering different IT systems. Each of these IT systems has its own history, its own flexibility (or lack thereof!) and its own added value based, on its users' initial needs.
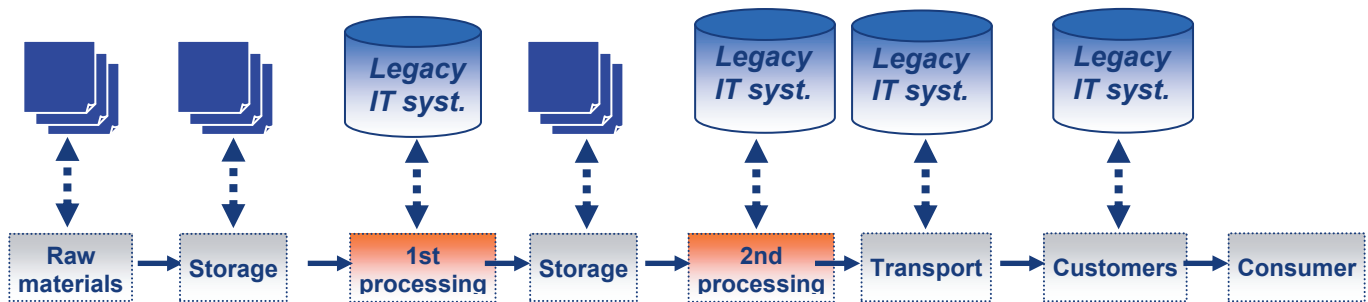
This means that to successfully carry out the process of installing an IT system, a company must build upon its legacy system, rather than change it, because the implementation costs and resulting loss of productivity of a complete changeover would be impossible to bear.

So Arrivé decided to set up a new IT data exchange process to efficiently manage its partnerships. Due to the very long and complex production chain to be addressed, Arrivé chose to "split" its project into two main sub-projects:

- one dedicated to upstream, and therefore mainly focused on feed industry issues and livestock management
- one dedicated to downstream, and therefore "logistic" oriented.
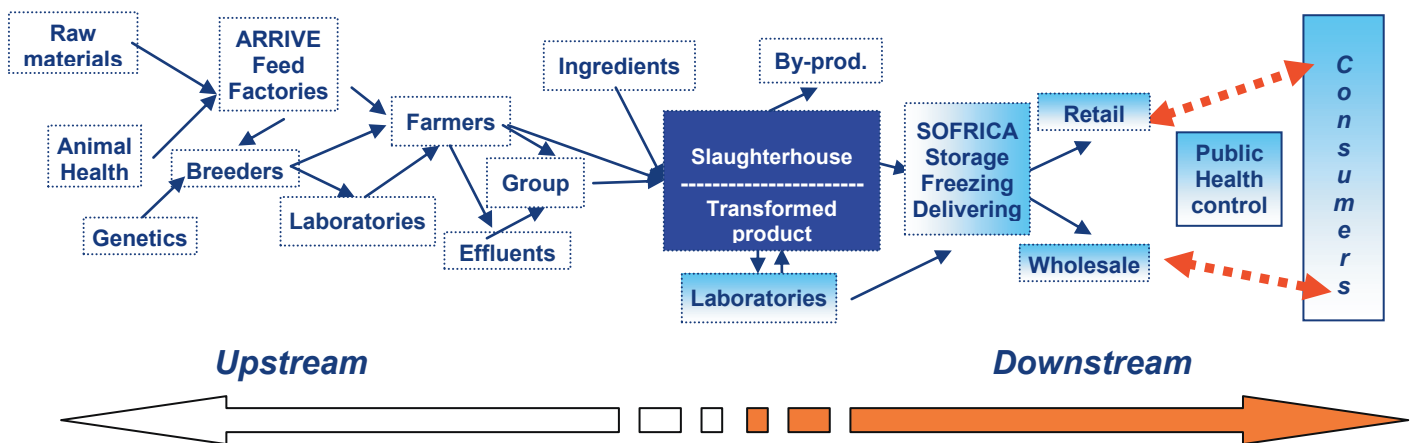
Critical points:

- *within the food industry, one never starts from a blank sheet*
- *global performance comes from addition of each individual user's performance*
- *it is less a matter of replacing an old IT system by a new one, than a matter of making these legacy systems able to exchange between themselves*
- *nothing is possible without data exchange standards*

d – 2005: beginning of European Food Law and Global Traceability Standard (GTS)

GS1 Global Traceability Standards (GTS) has been developed to help companies find a better way of improving their external traceability performance while taking into account their legacy systems and internal traceability processes.

Since 1994, within its poultry chain, Arrivé has focused the first step of the global traceability process on two main points:
- product identification
- batch number identification

At the same time, many of Arrivé's customers, such as retailers or wholesalers, were asking for more deliveries in a shorter timeframe and with lower logistical costs.

For this reason, within GS1 data exchange standards, Arrivé chose:
- GS1 128 for encoding product IDs and batch numbers in an internal traceability process
- EDI messages for exchanging information with its main logistic partners (such has SOFRICA) or retailers (with DESADV) in an external process

In the original application, these tools were partially designed internally. This explains why they did not fully respect standards in this first step. Full standards compliance in this field is complex path and this is still an on-going process, including keeping paper-based steps in place when there is no cheaper way of achieving it.

Critical points:
- *a standardisation process cannot be achieved in one shot*
- *companies have to set up a global plan to make it achievable within a pre-defined timeframe*
- *partners can temporarily maintain paper-based steps if they are they enable the process*

e – 2008: GS1 Global Traceability Standard (GTS) and beyond…

Like many other food companies, Arrivé has a global traceability process not only for traceability, but also, and maybe even more so, for global quality management. This process started long ago and will never finish only improve again and again.

This means that, beyond the ability to trace and track any product at any time and any point of the chain, Arrivé wants to achieve a global quality management shared with each of its partners throughout the global production chain.

After taking steps dedicated to GS1 128 implementation internally and externally, Arrivé started to set up new traceability standards, such as SSCC:
- on carton identification
- on pallet identification level
- on EDI messages with customers, such as DESADV

In 2005, Arrivé joined a new global quality & safety food network project, named REGAT, with Internet-based technology. This new IT network will fully respect legacy systems and will fully integrate GTS specifications.
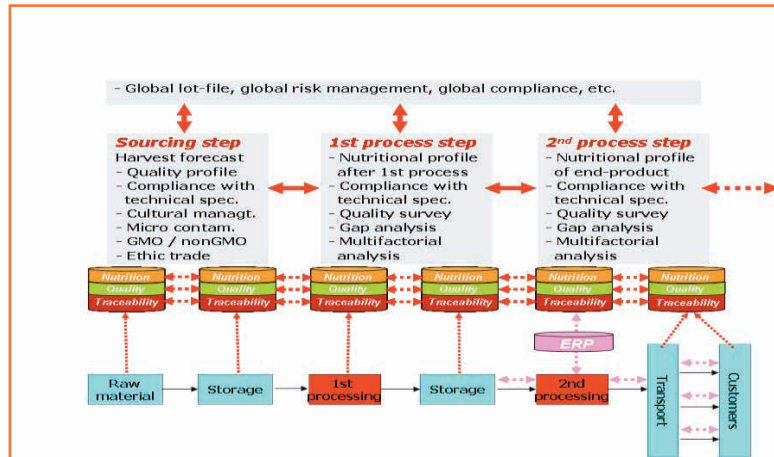
4 – Scope of the Arrivé case study

Over several decades, the Arrivé group has built a strong partnership with SOFRICA, one of the French leaders in transport and storage of frozen products (based in Vendée – France)

Arrivé wanted SOFRICA to handle its frozen products from poultry slaughterhouses to customers (third party supplier)
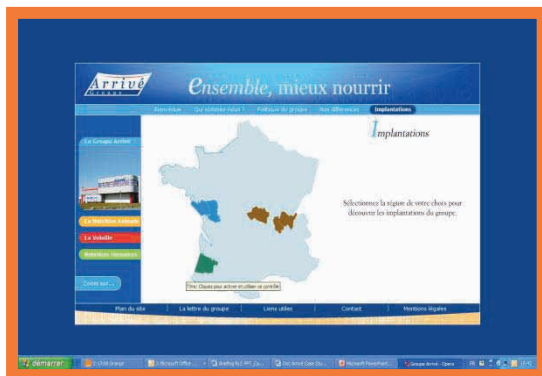
Arrivé Plants

SOFRICA Plants

Arrivé had previously set up a data exchange process between its factories and SOFRICA storehouses, but this paper-based process became too slow and expensive as soon as exchanges increased. But on the other hand, Arrivé needed to keep close to SOFRICA as its main logistic and freezing partner while improving its reliability and security with its main customers.

Specifications of this new process were:
- manage each of its products with the same level of quality and efficiency wherever the product was and whoever handled it.
- receive customer's orders by EDI
- send dispatch notice to its customer by EDI

SOFRICA is responsible for handling the product and information flow between their own company and Arrivé.

During the whole process, Arrivé must manage traceability from a farmer's batch number until the final product's batch number (internal traceability).

It means that SOFRICA must handle its own part of the process without any lack of information, especially in traceability (internal traceability) allowing Arrivé to guarantee its customers its ability to recall and/or withdraw any product at any time if needed, wherever the product is (external traceability).

Picture extracted from the Global Traceability Standard
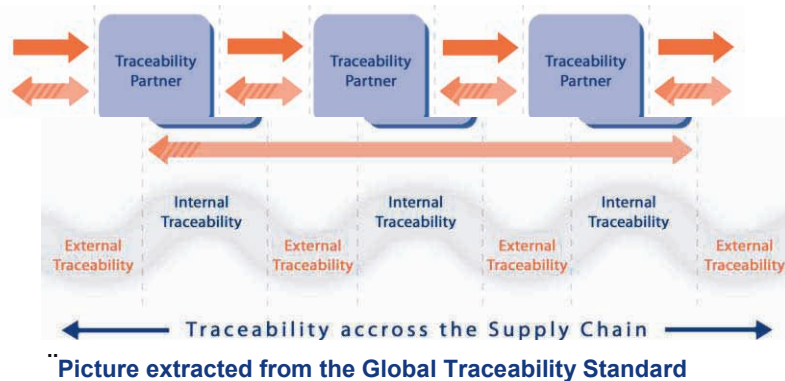
In the same time, Arrivé has to deliver fresh products straight to its customers and must comply with their expectations:
- order sent by EDI/EANCOM
- carton and pallets bearing GS1 standards stickers
- carton and pallets uniquely identified by SSCC
- deliveries followed by DESADV, (including SSCC)
- DESADV sent by EDI/EANCOM

Partners | **Physical flow** | **Arrivé data** | **SOFRICA/Customer data**

Farmer delivery

Slaughter. reception

Slaughter. delivery

Storage reception

Storage delivery

Customer reception

Live Poultry

Poultry Cuts

Cartons

Pallets

Pallets

Pallets

Pallets

Fig.1 - Screenshot of Reception

Fig.2 - Screenshot of Slaughterhouse incoming

Fig.3 - Trolley barcode sticker:

Fig.4 - Screenshot of Slaughtering outgoing:

Fig.5 & 6 - Screenshot of Order

Fig.8 - Pallet SSCC sticker

Fig.12 – Screenshot of Internal EDI message

Fig.13 - Screenshot of Order in traceability IT system

Fig.7 – Screenshot of Internal EDI message

Fig.9 – Screenshot internal EDI message

Fig.10 & 11 - Screenshot of stock

Fig.13-2 - Screenshot of Picking and updated stock

Fig.14 - Screenshot of Dispatch notice

Fig.15 – GS1 Eancom DESADV files for Customer

5 – Traceability physical flow documentation

From Arrivé slaughterhouse to SOFRICA (the storage partner)

Supply chain link	Operation	Data exchange process	Document examples *(see section 6)*
Slaughterhouse	Animal batch from Farmer	Transport arriving	
		Unloading	
		Data reception	Screenshot Reception *(Fig.1)*
		Batch number acquisition & Batch quantity	Screenshot Slaughterhouse incoming *(Fig.2)*
	Slaughtering	Slaughtering	
		Weight checking	
		Trolley identification by barcodes	Trolley barcode sticker *(Fig.3)*
		Traceability data acquisition	Screenshot Slaughtering outgoing *(Fig.4)*
		Order reception by storage partner	Screenshot Order *(Fig.5 & 6)*
		Delivery order by EDI	EDI message *(Fig.7)*
		Pallet identification by SSCC	Pallet SSCC sticker *(Fig.8)*
	Shipment	Pallet shipment	
		EDI message reception	
		Physical good reception	
		Incoming SSCC checking	
Storage partner	Reception	EDI message as recorded delivery	EDI message *(Fig.9)*
		Freeze storage	
		EDI message from storage partner	
		SSCC in updating stock management	Screenshot of stocks *(Fig.10 & 11)*

From SOFRICA to Arrivé's Customer

	Order coming from Arrivé for SOFRICA to manage and deliver		
Supply chain link	**Operation**	**Data exchange process**	**Document examples** *(see section 6)*
Slaughterhouse	Order receiving from Arrivé's customer	Order reception	
		Stock checking within SOFRICA and picking preparation	
		Order sent to SOFRICA by EDI to be fulfilled	EDI message *(Fig.12)*
Storage partner	Order management	Order reception by EDI	
		Picking and order preparation	Screenshot of Picking and updated stock *(Fig.13-2)*
		Shipping to customer	
		EDI Despatch notice (EANCOM DESADV)	Screenshot of Despatch notice *(Fig.14)*
			Screenshot of Order in traceability IT system *(Fig.13)*
Customer	End of processing	Despatch notice reception	DESADV files for Customer *(Fig.15)*
		Stock updated in Storage partner	
		Invoice to Customer	

6 – Global Traceability Standard (GTS) and Arrivé

Once the global traceability plan is defined and ready to be set up, the GS1 Global Traceability Standard (GTS) helps its implementation. In this respect, the GTS can be considered as a framework, as well as a guide to see a global project such as Arrivé's through to the end.

Picture extracted from the Global Traceability Standard

As described in the GTS, (*p. 29 -* "use case *actor matrix*"), the GTS divides the traceability process in five main parts; each must be fulfilled before going further.

This section shows each step Arrivé followed to implement its program, accompanied by each related document

Plan and Organise

Step 1: Determine how to assign, collect, share and keep traceability data

- At each step of the global process, Arrivé identified available data within each IT or paper-based system.

- A difference had to be made between "digital data" available in IT systems and other physical data unable to be automatically managed, because of the time needed to gather it and of the risk of mistakes due to typewriting.

- This task was the responsibility of each IT manager throughout the chain, link by link, and IT system by IT system.

- In Arrivé's case, as well as in many others in the food industry, this step was a critical one, because it determined the quality and the reliability of the whole process to follow.

Step 2: **Determine how to manage links between inputs, internal processes and outputs**

- Once a complete set of data had been identified, the IT manager at each level of the chain had to identify common data to be used in the exchange with his partners upstream and downstream.

- This common data is the link between each step of the whole process which determines the future capability of tracing and tracking from one partner to another (see chapter 3.7).

Align master data

Step 3: **Assign identification to the party** (related Business Requirements: BR1)

Step 4: **Assign identification to physical location** (related Business Requirement : BR1, BR3)

Step 5: **Assign identification to assets as appropriate**

Step 6: **Assign identification to trade items** (related Business Requirements: BR3)

Step 7: **Exchange master data** (related Business Requirements: BR2)

These steps are considered as pre-requisite to manage traceability during the physical flow of goods. Arrivé uses GLN to identify parties and locations and GTIN to identify trade items.

Record traceability data

Step 8: **Assign identification to trade item when it is created** (related Business Requirements: BR5, BR7, BR12)

Step 9: **Apply the identification to the identification carrier on the traceable item or in an accompanying document when a transformation takes place** (related Business Requirements: BR6, BR8, BR9, BR12)

Step 10: **Capture the identification of the traceable item or the asset containing it from the identification carrier when despatching and receiving the traceable item** (related Business Requirements: BR8, BR9, BR12)

Arrivé has received a live poultry batch from a Farmer, corresponding to one of the farmer's **production halls.**

To fulfil traceability requirements:
- ✓ Arrivé must identify each lot upon arrival and must create a batch number which will be linked to the Farmer's batch number in the IT system (see next document).

- ✓ Processing location is also identified, as well as production area.

Processing location →
Poultry batch →
Production area →
Poultry batch →

```
MODE:E ACTION:          CREATLOT Criation/Modification de lots  17/01/2008 01

Diptt/Emplac: 0141 HALL RECEPTION P.VOL. VIVANTES 9999 Creation dynamique

Lecture.....:
Article/Tr. : 03000010.GROS POULET VEGETAL BL          .de          `
Lot.........: 850030500000. Rectifier Quantiti


Commentaire : GAEC LA ROUSSIERE LA PETITE RO

Localisation: FR   FRANCE              Pays: FR. Dipt: 85  Code postal: 85170
Orig.Prod   : A.   Abattage

Date 1      : A.   15/01/2008    Lot : 8500305          D.L.U.: 18/01/2008 23:59
Estampille  : 85.215.01
Etat du lot : NOR
Qualiti     : D.   Qualiti D

En stock....:                  UN              KG
Rectifier...:          6432,00 UN       25152,00 KG   Nb itiq.: █
```

Fig.1 - Screenshot of Reception

- ✓ Arrivé creates a new poultry batch number in its IT system. This number is related to the former one.
- ✓ Arrivé must also create a process number to feed its own process IT management system

Process number →
Batch number →

```
        D E S T O C K A G E   M A T I E R E      17/01/2008   15:45:15
OF.: 801107498264 ABA GROS POULET STD VEGETAL BL Lig.: AP01 Dispo.: 15/01  9:21
                              Priconisi

Diptt 0141/9999 DLU 18/01/2008
0,00/6413,00 UN

Reste 6413,00 UN (environ 23 CONT)
03000010                                P
GROS POULET VEGETAL BL
                              Lot choisi
  Code Barre......:                    COMMENTAIRE
  Article..: 03000010    Tranche..:              Plus Petite DLU
  Lot.....: 850030500000  DLU......: 18/01/2008  Quantiti lot....: 6432,00 UN
  Qti lue/saisie.........:        6432,00 UN  Etat NOR    Qualiti D
  Qti distockie brute....:        6432,00 UN            25152,00 KG
                                      PCB.: 288/CONT  Choix: .█
```

Technical specifications →

Fig. 2 - Screenshot of Slaughterhouse incoming

- ✓ Arrivé must also describe the technical specifications of this poultry batch.
- ✓ All this information will follow this poultry batch throughout the whole slaughtering and cutting process.

- ✓ Each of these actions must be centralised to make each item unique, which is one of the most critical points of this process.

✓ Once slaughtered, the poultry batch has to be stored before the cutting process. Each trolley carrying a part of the poultry batch must be identified in order not to mix this batch with the previous or next ones.

Fig.3 – Chariot internal barcode sticker

This sticker is part of the Arrivé internal traceability process.

To avoid any mistakes and save a great deal of time, each trolley has its own identifying number written in barcode symbology.

In this case, dynamic data has been recorded:
- batch number
- item identification
- date of process
- process number

As seen in the previous document, this data allows the two IT systems to link each poultry batch from the reception step to the slaughtering step. This information is also optically readable to help operators identify and check each batch by themselves if needed.

Within the same period of time, the following steps are also managed:

Fig.4 - Screenshot of Slaughtering outgoing

Fig.5 - Screenshot of Order (1)
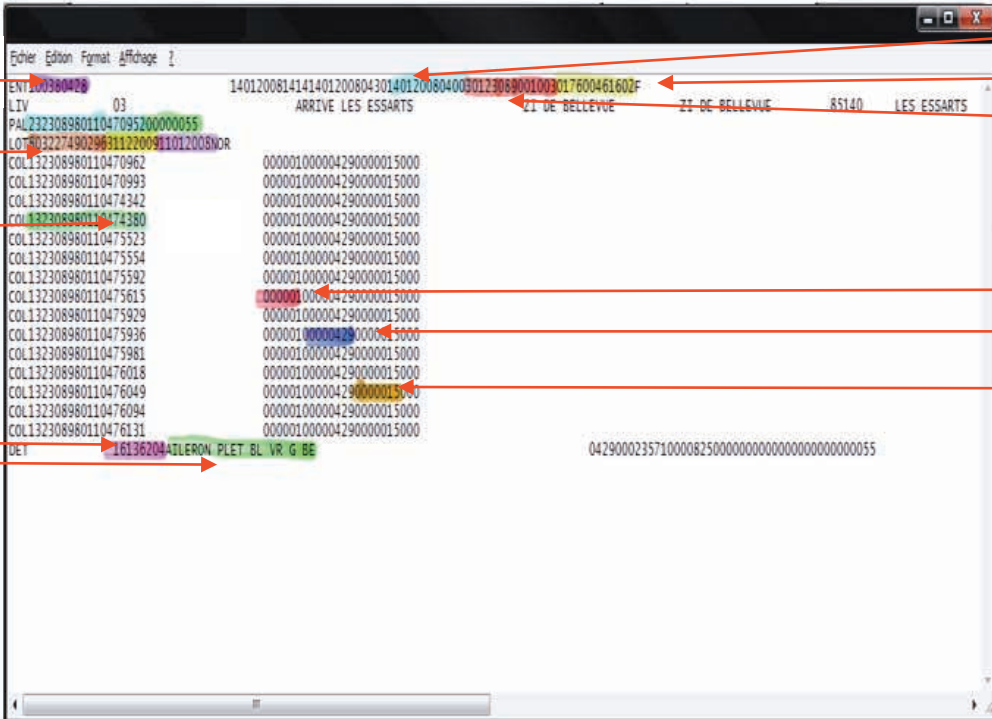

Fig.6 - Screenshot of Order (2)

These steps are strictly related to the internal process, but still use the same identification figures.

Once products have been slaughtered, cut and packed, they are ready to fill orders arriving from Arrivé customers.

Step 11: **Collect all other data including traceability information from internal and external sources by any method** (related Business Requirements: BR2, BR11, BR12, BR16)

Orders are received by internal EDI and automatically integrated in the IT processing and sales system (see following documents).

Fig.7 – Screenshot of EDI message to SOFRICA

Step 12: **Share relevant traceability data** (send information by any method) (related Business Requirements: BR2, BR12, BR13, BR15, BR16, BR17)

Step 13: **Store traceability data** (related Business Requirements: BR12, BR13, BR14, BR16, BR20)

> **At this point, Arrivé has finished its process and is ready for delivery to its customer. The following document (Fig.8 – Pallet SSCC sticker) fulfils GS1 standard and therefore will be automatically read by the customer once delivered.**

Expediteur (From)
Arrivé SA
01 Rue du stade
85250 Saint Fulgent

FR85250

Test II Prepa Commandes
85250 Saint Flugent

ARRIVE VOLAILLES   **1TE.00**

0007   CUIS DIND VEG SOS APE PARE VR

SSCC
0070323089389217200 4

GTIN
93230891700073

Poids Net (Net Weight) (gr)   Date d'expiration (Expiration Date)
584892   16.10.2008

(01) 9 32 30891 70007 3 (3103) 584892 (17) 081016

(00) 7 0323089 389217200 4

SKU ID
Pallet weight
SKU ID
SSCC carton

Fig.8 – Pallet SSCC sticker

In the following document, Arrivé sends information about a delivery to one of its freezing and storing partners SOFRICA to allow it to update its stock data.

This EDI screenshot document comes from an internal IT system set up between Arrivé and SOFRICA.

Order Nb   Time/date   from   To

Carton Nb
SSCC pallet

ENT2   00377264   9422614012008075614012008075   30176004616023012308900101
PAL232308973513785600   104
PAL232308980080142378   96
PAL232308980090289568   104
PAL232308980090290045   104
PAL232308980110413508   96
PAL232308980110422340   96
PAL232308980110426911   96
PAL232308980110429004   96
PAL232308980110435630   96
PAL232308980110440245   96

Fig.9 - Screenshot of EDI acknowledgement of receipt

These screenshot documents come from the Arrivé internal IT system and show how Arrivé gets information back from SOFRICA allowing it to update its packed frozen product stock management.

Fig.10 - Screenshot of stock (1)   *Fig.11 - Screenshot of stock (2)*

Arrivé can ask SOFRICA to prepare and deliver another order coming from another customer.

✓   Arrivé sends an internal EDI message to SOFRICA…

Fig.12 - Screenshot of EDI message about an order to be prepared by SOFRICA

✓ and receives information back about the delivery, allowing its own IT stock system management to be updated automatically.
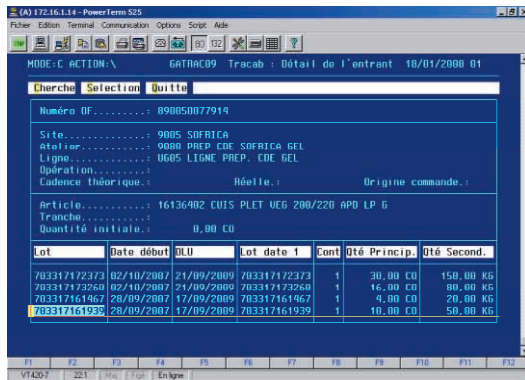
Fig. 13 - Screenshot or order in traceability IT system stock

Fig. 13-2 – Screenshot of picking and updated

14 - Screenshot of Dispatch notice:

At the end of the process, Arrivé has sent two different orders:

- **one from a customer for frozen product**
  o the order has been put together by SOFRICA on behalf of Arrivé
  o the order has been transmitted to SOFRICA by an internal EDI
  o SOFRICA has delivered the order to the customer
  o SOFRICA has sent back to Arrivé information about:
    ▪ The delivery and its GS1 Eancom DESADV
    ▪ The stock updating

- **a second order from a customer for fresh product**
  - o the order has been put together by Arrivé
  - o it has been delivered by Arrivé
  - o Arrivé has sent to its customer:
    - ▪ The delivery and its DESADV (see following Fig.16 document)
    - ▪ The stock updating

```
UNB+UNOA:3+801230089001          DTM+36:20080131:102'            GIN+BJ+8323089802400002         GIN+BX+805903645
00:14+302109300803:14            LIN+0003++3230890005732         29'                             985'
+080124:1033+080572-             :EN'                            CPS+0016+0015'                  PCI+38E'
0001'                            QTY+12:00072:PCE'               PAC+0000009++CT'                LIN+0013++325622
UNH+0001+DESADV:D:96A:           CPS+0008+0001'                  MEA+PD+AAA+KGM:00017.06         5013012:EN'
UN:EAN008'                       PAC+1++X1::9'                   '                               QTY+12:00060:PCE
BGM+351+80240035+9'              PCI+33E'                        QTY+59:006:PCE'                 '
DTM+137:20080124:102'            GIN+BJ+8323089802400001         PCI+36E'                        CPS+0025+0001'
DTM+11:2008012411033:20          06'                             GIN+BX+801650753883'            PAC+1++X1::9'
3'                               CPS+0009+0008'                  PCI+38E'                        PCI+33E'
DTM+17:2008012423300:20          PAC+0000019++CT'                DTM+36:20080130:102'            GIN+BJ+832308980
3'                               MEA+PD+AAA+KGM:00063.89         LIN+0009++3230890009969         240000311'
RFF+ON:00458951'                 '                               :EN'                            CPS+0026+0025'
DTM+171:20080123:102'            QTY+59:006:PCE'                 QTY+12:00054:PCE'               PAC+0000013++CT'
RFF+DQ:126198'                   PCI+36E'                        CPS+0017+0001'                  MEA+PD+AAA+KGM:0
DTM+171:20080124:102'            GIN+BX+805903645991'            PAC+1++X1::9'                   0079.65'
NAD+SU+3012308900100::           PCI+38E'                        PCI+33E'                        QTY+59:004:PCE'
9'                               DTM+36:20080131:102'            GIN+BJ+8323089802400002         PCI+36E'
NAD+SH+3012308900100::           LIN+0004++3256225014453         36'                             GIN+BX+805903645
9'                               :EN'                            CPS+0018+0017'                  984'
NAD+BY+3021093000000::           QTY+12:00114:PCE'               PAC+0000017++CT'                PCI+38E'
9'                               CPS+0010+0001'                  MEA+PD+AAA+KGM:00021.88         DTM+36:20080130:
NAD+DP+3021093000600::           PAC+1++X1::9'                   '                               102'
9'                               PCI+33E'                        QTY+59:006:PCE'                 LIN+0014++315958
CPS+1'                           GIN+BJ+8323089802400001         PCI+36E'                        0001062:EN'
PAC+040++X1::9'                  13'                             GIN+BX+801650753882'            QTY+12:00052:PCE
MEA+PD+AAD+KGM:02075.3           CPS+0011+0010'                  PCI+38E'                        '
7'                               PAC+0000005++CT'                DTM+36:20080130:102'            CPS+0027+0001'
CPS+0002+0001'                   QTY+59:006:PCE'                 LIN+0010++3230890009907         PAC+1++X1::9'
PAC+1++X1::9'                    PCI+36E'                        :EN'                            PCI+33E'
PCI+33E'                         GIN+BX+805800753867'            QTY+12:00102:PCE'               GIN+BJ+832308980
GIN+BJ+83230898024 0000          PCI+38E'                        CPS+0019+0001'                  240000328'
076'                             DTM+36:20080206:102'            PAC+1++X1::9'                   CPS+0028+0027'
CPS+0003+0002'                   LIN+0005++3230890030727         PCI+33E'                        PAC+0000014++CT'
PAC+0000013++CT'                 :EN'                            GIN+BJ+8323089802400002         MEA+PD+AAA+KGM:0
MEA+PD+AAA+KGM:00037.9           QTY+12:00030:PCE'               43'                             0015.04'
8'                               CPS+0012+0010'                  CPS+0020+0019'                  QTY+59:006:PCE'
QTY+59:006:PCE'                  PAC+0000005++CT'                PAC+0000008++CT'                PCI+36E'
PCI+36E'                         MEA+PD+AAA+KGM:00009.22         MEA+PD+AAA+KGM:00005.33         GIN+BX+805900753
GIN+BX+805900753865'             '                               '                               863'
PCI+38E'                         QTY+59:004:PCE'                 QTY+59:006:PCE'                 PCI+38E'
DTM+36:20080201:102'             PCI+36E'                        PCI+36E'                        DTM+36:20080223:
LIN+0001++323089000327           GIN+BX+805900753846'            GIN+BX+801650753881'            102'
1:EN'                            PCI+38E'                        PCI+38E'                        LIN+0015++323089
QTY+12:00078:PCE'                DTM+36:20080201:102'            DTM+36:20080130:102'            0007798:EN'
CPS+0004+0001'                   LIN+0006++3159580003325         LIN+0011++3230890009983         QTY+12:00084:PCE
PAC+1++X1::9'                    :EN'                            :EN'                            '
PCI+33E'                         QTY+12:00020:PCE'               QTY+12:00048:PCE'               CPS+0029+0001'
GIN+BJ+83230898024 0000          CPS+0013+0010'                  CPS+0021+0001'                  PAC+1++X1::9'
083'                             PAC+0000002++CT'                PAC+1++X1::9'                   PCI+33E'
CPS+0005+0004'                   MEA+PD+AAA+KGM:00007.42         PCI+33E'                        GIN+BJ+832308980
PAC+0000009++CT'                 '                               GIN+BJ+8323089802400002         240000342'
MEA+PD+AAA+KGM:00015.5           QTY+59:006:PCE'                 50'                             CPS+0030+0029'
6'                               PCI+36E'                        CPS+0022+0021'                  PAC+0000008++CT'
QTY+59:006:PCE'                  GIN+BX+805900753847'            PAC+0000022++CT'                MEA+PD+AAA+KGM:0
PCI+36E'                         PCI+38E'                        MEA+PD+AAA+KGM:00048.73         0039.94'
GIN+BX+805900753864'             DTM+36:20080130:102'            '                               QTY+59:004:PCE'
PCI+38E'                         LIN+0007++3230890009785         QTY+59:006:PCE'                 PCI+36E'
DTM+36:20080201:102'             :EN'                            PCI+36E'                        GIN+BX+805900753
LIN+0002++323089000326           QTY+12:00012:PCE'               GIN+BX+805903645992'            888'
4:EN'                            CPS+0014+0010'                  PCI+38E'                        PCI+38E'
QTY+12:00054:PCE'                PAC+0000003++CT'                DTM+36:20080131:102'            DTM+36:20080204:
CPS+0006+0001'                   MEA+PD+AAA+KGM:00008.07         LIN+0012++3256225014439         102'
PAC+1++X1::9'                    '                               :EN'                            LIN+0016++323089
PCI+33E'                         QTY+59:006:PCE'                 QTY+12:00132:PCE'               0000157:EN'
GIN+BJ+83230898024 0000          PCI+36E'                        CPS+0023+0001'                  QTY+12:00032:PCE
090'                             GIN+BX+805900753848'            PAC+1++X1::9'                   '
CPS+0007+0006'                   PCI+38E'                        PCI+33E'                        CPS+0031+0001'
PAC+0000012++CT'                 DTM+36:20080202:102'            GIN+BJ+8323089802400003         PAC+1++X1::9'
MEA+PD+AAA+KGM:00021.5           LIN+0008++3159580004704         04'                             PCI+33E'
9'                               :EN'                            CPS+0024+0023'                  GIN+BJ+832308980
QTY+59:006:PCE'                  QTY+12:00018:PCE'               PAC+0000015++CT'                240000397'
PCI+36E'                         CPS+0015+0001'                  MEA+PD+AAA+KGM:00079.44         CPS+0032+0031'
GIN+BX+805900753866'             PAC+1++X1::9'                   '                               PAC+0000034++CT'
PCI+38E'                         PCI+33E'                        QTY+59:004:PCE'                 Etc...
                                                                 PCI+36E'
```

Fig.15 – DESADV files for Customer

Request trace

Step 14: Initiate the trace request *(related Business Requirements: BR2, BR10, BR17, BR18, BR19)*

As an example, let's consider a retailer's quality manager taking samples throughout his stock for his analysis plan.

This quality manager takes a product from a shelf and goes back to his office to phone to the corresponding supplier (ex.: Arrivé).

He wants to know everything about this product, and also wants to compare analysis coming from his supplier to analysis coming from his own laboratory.

Step 15: Receive the trace request *(related Business Requirement: BR18, BR19)*

So he provides Arrivé's quality manager with:
- Identification item:
  - "chicken wings Mexican taste x6"
  - GTIN
  - Batch number
  - Best before date

He will expect Arrivé to send to him sample analyses related to the same batch number:
- Analysis on final fresh product
- Analysis on intermediate product
- Analysis on corresponding poultry batch before slaughtering

Step 16: Send a response *(related Business Requirement: BR19)*

Starting from Identification item, Arrivé will have to check:
- The related batch number, DESADV, processing number and poultry batch
- The related sample number linked to the poultry batch

Step 17: Receive a response *(related Business Requirements: BR19)*

Once this information is sent to the retailer's quality manager, Arrivé will receive corresponding analysis back from the quality manager

To comply with the usual customer expectations, this request must be handled in less than a half day.

Use information
Step 18: Take action

7 – Traceability at Arrivé: key learnings

By creating a global traceability program, Arrivé has been able to appraise the constraints and benefits of such an implementation.

Constraints

Arrivé would not have been able to achieve such a program without dedicating specific human resources. So the company launched this plan 4 years ago with steering and technical committees built with internal resources and expertise.

But it appeared quite quickly that many technical options required time as well as specific knowledge, so it was decided 3 years ago to look for a dedicated specialist. Arrivé took the option to hire a student with a degree in traceability (Ecole Centrale Paris) and proposed he follow a parallel PhD program (CIFRE contract) on the same subject.

Organising a global traceability program within such a complex chain means time has to be spent in-house, as well as with each partner who is to be involved.

Benefits

Once a company starts to look deeply at its IT system and processes, it tends to improve them along the way and identify each weakness or missing link.

Traceability is very close to material accounts, which means, from a process point of view, that a first economical benefit comes from better efficiency in the industrial process.

Traceability is also a matter of physical flow management, which also means that a second economical benefit comes from better dynamic knowledge of internal flow allowing significant improvement.

Moreover, traceability is a matter of partner relationship coordination, which means, as in the previous argument, a better efficiency of external flows.

Traceability helps a company to strengthen its relationships with its customers, due to its better capability of managing recall and/or withdrawal situations.

Last, traceability helps a company to build a fruitful relationship with consumers through its ability to provide products and brands with a stronger commitment of safety as well as an effective capability of providing information related to any traceable item if needed.

> **For a company such as Arrivé, traceability has become an efficient way of improving its global processes as well as a sort of** "pre -requisite" for an efficient and stronger **relationship with its customers and consumers.**