PORT COMMUNITY SYSTEMS

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Abstract

Ports are natural bottlenecks in the transport chain, yet they are logical places to carry out customs controls. Port Community Systems have played a major role in facilitating the more efficient movement of goods while allowing Customs and other government departments to maintain effective controls. This article traces the history of one such system from the early days of planning through to the current day, in order to provide an insight into the benefits that can be achieved by both Government and the trade, transport and logistics communities. In so doing, the role that such systems can play in terms of implementing a comprehensive Single Window is highlighted.

Introduction

The development and implementation of Port Community Systems (PCS) have been significant contributing factors to the more efficient movement of cargo across international borders. These systems vary in both technical and functional design and operation and in coverage in terms of users and locations. Some are effectively message switches, others incorporate messaging with a database, some are designed for specific ports and others try to offer a generic solution. It is interesting to note that, in recent years, they have been held up as examples of Single Windows and in many respects, this is true. The most effective PCS also provide services which most government Single Windows do not, that is, Business-to-Business information exchange.

The Felixstowe Port Community System

January 2009, the time of writing this article is, by coincidence, the 25th Anniversary of the implementation of the PCS in Felixstowe, the United Kingdom's (UK) premier container port and the first in the country to introduce such a system. Maritime Cargo Processing Plc is the community-owned company established to manage and market the system.

Planning for the system, which started its life as FCP80 (Felixstowe Cargo Processing for the 80s) began in 1981 when the East Coast port was facing a time of crisis in terms of throughput which had reached over half a million TEU (Twenty Foot Equivalent Units). Ports are obvious potential bottlenecks for international trade and transport, and the explosive growth of Felixstowe meant that it had reached the stage where it needed to find a way of streamlining the processes and procedures that were causing delays to the movement of goods or it would not be able to continue to expand.

The reason for this approach, rather than just seeking to expand the operational area of the port, was quite simple. Senior management recognised that if they did not tackle the bottlenecks that were occurring because of the cumbersome documentary processes and procedures associated with the clearance and movement of the cargo, this problem would not be resolved even if the port itself was extended. An increase in physical capacity and throughput would only lead to an increase in documentation, all of which would require the same onerous manual processing. In fact, the situation would worsen, because the

primary documentary requirements, the manifest and the Customs Declaration, relied on the availability of personnel (particularly Customs) to process them and in the late 1970s and early 1980s, one of the main aims of the UK Government was to reduce the number of Civil Servants.

The decision was therefore taken to develop and implement a PCS with the whole emphasis being to eliminate, as far as possible, the number of paper documents, often in multiple copies, that were carried around the port. Shipping lines and agents, forwarders and brokers, customs and other government authorities, transport operators and the ports/terminal operators are reliant on information from each other to perform their functions effectively. Activity in each sector has an impact on the others. It was clear that if information could be passed between them in an accurate and speedy manner and without paper, there was the potential for the whole operation to improve its efficiency and this would allow throughput to continue to rise through faster movement of goods, thus also making the physical expansion a more attractive proposition.

In order to ensure that the system would be a success, or at least mitigate against possible failure, the various sectors of the Felixstowe port community were engaged in the design process and a Steering Committee, project team and various sub-groups were established. HM Customs & Excise (now HM Revenue & Customs) played a key role in this by setting up a dedicated local team as well as providing technical and policy support from Headquarters. It has often been stated that one of the major reasons for the overwhelming success of the system is that it was 'designed for the users, by the users', a philosophy which has continued for the past 25 years.

It was identified at an early stage that one of the main causes of delay was the processing of customs declarations. Average clearance times were between four and five days and figures showed that one in three declarations received by Customs contained errors. At this time, maritime declarations were prepared on paper by Freight Forwarding Agents/Customs Brokers and presented to Customs, where the details were entered into the central customs declaration processing system by data processors employed by the Department. Validation of the declaration data by the Customs system often resulted in the identification of errors and then a process of notification, amendment, re-submission and re-keying of the data followed. It was this which largely contributed to the lengthy average clearance times.

The Customs system was, however, capable of handling declarations in a Direct Trader Input (DTI) environment and indeed, the larger UK airports were already utilising DTI. The Steering Committee therefore decided to implement the PCS in two phases. The first phase would see the introduction of DTI to the port and as this was largely a technical issue, the design of Phase 2, which would achieve the full objectives of the PCS, was to take place in parallel. An Invitation to Tender was issued in 1981 and the contract awarded. By January 1982 the necessary resources were in place and design of the PCS functionality began. The intention from the beginning was for the eventual users of the system to dictate exactly how the system would function and the responsibility of the contractor was to ensure that their requirements were met.

Included in the constraints placed on the project team was that the PCS should only deal with major operational processes; it must not duplicate those functions where efficient systems already existed and it must, from the very beginning, provide for the electronic exchange of data, including manifest information. The reason for this is simple and obvious – the Port of Felixstowe and many of its major customers, the carriers and shipping lines, already had systems of their own in which they had invested heavily and they did not want to jeopardise that investment.

Phased approach

Phase 1 was implemented on 28 January 1984 and essentially provided Freight Forwarders in the Felixstowe port community access to the Customs central declaration processing system through a

single gateway, the PCS. Could this eventually provide a single gateway to a Government International Single Window?

Using DTI, declarations prepared off-line using application packages developed by specialist software houses working with the Freight Forwarding industry, are sent by Electronic Data Interchange (EDI) message to the customs system through the forwarders link to the PCS, where they are processed on a real-time, interactive, basis. Any validation errors are reported directly back to the forwarder's system, by EDI, via the PCS gateway where they can be corrected and the data re-submitted in a single operation. The forwarder is therefore effectively fulfilling the role previously undertaken by Customs personnel, freeing them to concentrate on more productive activities. The introduction of DTI alone led to a dramatic improvement in clearance times, from the previous four to five days to around six hours. Developments since 1984, together with the impact of Phase 2 implementation, have reduced clearance times to zero in the majority of cases. In other words immediate release is notified to the PCS by the customs declaration processing system on acceptance of the declaration. Only those declarations requiring further documentary or physical checks to be carried out do not receive immediate release.

Phase 2 (also known as Inventory Control) development continued and implementation took place some 18 months later. The time lag between the two phases was sufficient for the completion of the functional specifications, development of the application itself by the contractor and for full testing to take place by volunteers from the community enlisted to the project team and its various sub-groups. The basic concept of Phase 2 is to capture data relating to every import, export and transhipment container/consignment on every vessel, to store that data and to use it to allow the various sectors of the port to carry out their physical operations without having to resort to paper documents.

Phase 2 consists of several modules and in the years since its original implementation there have been substantial changes, additions and improvements made. The concept of the system however, to replace paper documentation with electronic equivalents, has not changed. The following list represents the majority of documents that have been replaced through use of the PCS:

- Manifests and associated amendments
- Customs release notes
- Ship's out-turn/discharge reports and amendments
- Bonded removal documents (for example, inter port, ICD, CFS, etc.)
- Local transhipment documentation
- Lines' commercial release
- Acceptance of rent/storage charges
- Delivery instructions to transport operators (road/rail)
- Export delivery advice
- Export arrivals
- Export load list
- Loading reports
- Customs scanning/examination/sealing requirements
- Port health/quarantine and other government departments' activities
- Requests to out-turn in sheds/warehouses (devanning)
- Shed/warehouse out-turn reports and amendments
- Customs declarations for exports
- Ship planning notifications and amendments
- Dangerous/hazardous goods reporting

The most significant of these in terms of Customs are probably the first three, as they previously represented the most labour-intensive in terms of manual processing, after the customs declaration itself. Almost 100% of manifests are now received electronically into the PCS, predominantly using the UN/EDIFACT CUSCAR message.[1] Indeed, the first manifest received in 1985 was actually electronic (using a proprietary message) and replaced the seven copies that were previously circulated around the port on paper! A screen input facility is available for the very few companies that do not have the capability to send data electronically. The manifests submitted to the PCS are used by Customs for all fiscal control purposes and manifests submitted to the system in CUSCAR format are forwarded to the central customs anti-smuggling system, for profiling purposes. An extract of the manifest is also sent to the port operator's own computer system, for operational purposes. The manifest is also made available to other government departments, such as quarantine, veterinary and agriculture that also use the system. No paper manifests are required to be produced to Customs, to the port operator, or to other government departments using the system. The manifest data is stored on the PCS database and amendments can be made by the carriers without the need to obtain prior approval, with notification of sensitive amendments being immediately notified to Customs.

Each item on the manifest is allocated a unique reference number by the PCS and because this number is included in the associated customs declaration, this allows automatic 'writing-off' to take place. As clearance messages are received from the customs declaration processing system, the PCS sends a message to the appropriate Forwarding Agent/Broker and to the port, thus eliminating the paper customs release note. During discharge of the vessels, the port operator's own computer system sends messages to the PCS as each container (or Bill of Lading for general cargo) is landed and the PCS in turn sends messages to the carrier's in-house system and records the status on its database. On completion of discharge, the PCS compares the data received from the port operator with that held against the original manifest and issues 'discrepancy lists' to Customs and the carriers detailing short- and over-landed containers or general cargo items which may need further investigation or action.

Customs practitioners in particular will recognise the benefits of the electronic processing described in these examples when compared to the previous manual experience. Similar explanations could be recounted for the other documents listed.

It is not only in the Business-to-Customs and Customs-to-Business areas, however, that the PCS has made an impact in the cross-border environment, although these are often the most documented and are certainly how most PCS providers like to promote their systems. It is true that they have helped to reduce clearance times and reduced paper documents but, perhaps more importantly, they have encouraged data transfer and the single submission of data for multiple use in the Business-to-Business area of port operations. The concept of single submission is held up as one of the major benefits of International Trade Single Windows. Governments intending to develop Single Windows would therefore do well to look at the experiences of PCS providers when doing so, or they run the risk of providing systems that do not fully meet the needs of their 'customers'.

Conclusions

To summarise, the experience at many ports worldwide has shown the significant gains to be made by developing port community systems. Such systems reduce the overall amount of clerical work by providing a means of capturing information once and allowing controlled access by all appropriate members of the port community. Wasted effort is avoided because duplication of entry and storage of data is reduced to a minimum. The time required to release cargoes is reduced because the necessary information is instantly available to those who need it.

Overall, the ports offering such systems are easier to use and therefore, more attractive to existing and potential users. Benefits accrue to all members of the port community, which has an effect on the future of the port. It cannot be overstated, however, that the fundamental prerequisite for such port community systems is the sense of 'community'. It is essential that all the major members of the community agree their common interests and accept a common action plan to achieve the required development. One must not lose sight of the fact that the community system must be designed by the users for the users.

The system used in Felixstowe, originally FCP80, changed its name in 1990 to FCPS (the Felixstowe Cargo Processing System). By 2002, the FCPS Community system was processing some 70%-plus of containerised trade through UK ports and a significant proportion of the country's general cargo. Although very efficient and effective, FCPS was based on technology that was being rapidly overtaken. In late 2002, the decision was taken to undertake a complete re-write of the system onto a modern technical platform and this commenced in December of that year. The replacement system, Destin8, was successfully implemented after more than five years of development and testing, being rolled out to approximately 650 customers and 3200 users overnight on 13 May 2007. The system is now in operation in Felixstowe, Harwich, Ipswich, Immingham, Hull, Teesport, Tyne, Grangemouth, Aberdeen, Glasgow, Liverpool, Bristol, Thamesport, the Medway Ports and Tilbury as well as approximately 70 inland clearance locations (Container Freight Stations).

Endnotes

1   United Nations/Electronic Data Interchange For Administration, Commerce and Transport Customs cargo report message.

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