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1. Purpose of this Review

Background

According to the Telecom Submission (16th Dec 2004 App A paras 15-17) Telecom are planning to implement electronic ordering for its commercial UBS service in its recently developed electronic ordering (eOR) system, as part of their Operational Support Systems (OSS) platform. Telecom has recognised some of the limitations of the eOR system and has signalled future enhancements. However, no specific time lines or details for any enhancement have been made available to date.

TelstraClear has concerns about the available functionality of eOR and in particular the lack of electronic systems integration between the two carriers. If eOR were adopted in its current form, then TelstraClear believes this would have an adverse impact on their ability to compete effectively with regard to the provision of wholesale bitstream services.

Objective

In response to this concern, the aim of this review was to carry out an independent assessment of OSS and the eOR solution being developed by Telecom New Zealand for inter-operator processes for wholesale telecommunications services.

Deloitte was asked to provide an independent business process expert perspective on the OSS functionality being developed by Telecom and offered to wholesale customers, such as TelstraClear. In particular, Deloitte was asked to carry out an impact assessment of eOR on TelstraClear, if the proposed OSS eOR platform was adopted for the wholesale bitstream service.

Since TelstraClear is not currently using the proposed OSS eOR platform, this review focused on identifying what the current equivalent processes are within TelstraClear, and what impact adopting eOR would have on these processes. The review identified differences in processes and their resultant impact on productivity and costs for TelstraClear, if the Telecom OSS platform was adopted in its current form.

Scope

There are clearly a number of upstream processes (e.g. marketing and sales) as well as downstream processes (fault repair and maintenance) that would also be indirectly impacted by different forms of implementing a system such as eOR. However, the scope of this review is limited to the core OSS processes relevant for the wholesale bitstream services under determination by the Commission. The core processes this review focused on include:

Capture Order Information	Process of capture and validation of order information and submitting information to Telecom (e.g. customers calling TelstraClear and requesting a new bitstream connection)
Perform Order Registration	Process by which Telecom confirms or rejects an order registration and updates TelstraClear of this status (e.g. Bitstream connection not possible in specified location)
Support Service Installation Requests	Process of capturing service installation requirements and submitting information to Telecom
Receive and Handle Customer Enquiries	Process of receiving and investigating customer enquiries and resulting account adjustments (e.g. customers querying when their bitstream connection will become active)
Perform Order Completion	Process of completion of installation by Telecom and updating TelstraClear of status to close order (e.g. making the bitstream connection active)
Manage Faults	Process governing the management of customer trouble reports and outages (e.g. bitstream connection is supposed to be active but is not working)

The scope of this review is focused on TelstraClear's requirements and expectations of the Telecom inter-operator systems for wholesale bitstream services and does not reflect the requirements or expectations of other service providers for inter-operator services.

A summary diagram of these key business process flows is detailed below. The business processes description and the eOR business process impact analysis for each of these processes are outlined in detail in Appendix A of this document.

[

] **TCLRI**



Reference to additional transaction processing time due to impact of eOR

Detailed descriptions for each of the above processes are provided in the Appendices of this report. The remainder of this report discusses the approach taken to carrying out the independent analysis, as well as the major findings.

The quantitative analysis provided in this review is based on facts as presented by TelstraClear as well as previous documentation provided by Telecom and independent timing of key processes by Deloitte. The relevant assumptions and documents that have been relied upon are therefore highlighted throughout this report.

Report Content

The remainder of this report contains the following sections:

- **Chapter 1 Purpose of the Review** – this chapter sets the context for the review and outlines the key objectives for the review
- **Chapter 2 Approach Taken** – this chapter describes the approach taken to conducting the assessment and to collating the analysis
- **Chapter 3 Key Issues** – this chapter outlines the key issues from a TelstraClear perspective, around adopting eOR in its current form, as well as likely issues for Telecom
- **Chapter 4 Quantified process and system impacts** – this chapter seeks to quantify some of the key issues and their impact on TelstraClear, as well as their likely impact on Telecom
- **Chapter 5 Conclusions** – this chapter provides a summary of recommendations.

Appendices

- Appendix A Detailed Business Processes
- Appendix B System Usability
- Appendix C Telecom Wholesale Online Ordering and Tracing (eOR)

2. Approach Taken

The review sought to independently assess the impact of the proposed Telecom OSS on TelstraClear business processes. Therefore, the review had to first understand the available functionality of eOR. This was then used to understand the impact eOR would have on TelstraClear. Once the impact was understood, this was modelled to derive quantifiable metrics for productivity and costs.

Step 1 – Review of eOR functionality

To understand the key functionality that the Telecom inter-operator system offers, the project:

- Reviewed existing relevant documentation (e.g. Applications and supporting documentation to the Telecommunications Commission¹);
- Reviewed other available documentation of Telecom's system that has been previously provided to TelstraClear by Telecom²;
- Gathered TelstraClear's knowledge of the system by interviewing staff who had first-hand experience with the existing system and an understanding of eOR from information presented by Telecom; and
- Requested additional information from Telecom in the form of documentation or access to the system. Unfortunately, no information on the system or access to eOR was provided by Telecom.

¹ TelstraClear Bitstream Draft Determination - 21 April 2005
Cross Submission - Telecom, 31 January 2005
Cross Submission - TelstraClear, 28 January 2005
Submissions on the Application- Telecom, 16 December 2004
Submissions on the Application TelstraClear, 16 December 2004
Decision to Investigate the Application, 25 November 2004
Comments on the Application - Telecom, 18 November 2004
Comments on the Application - TelstraClear, 18 November 2004
TelstraClear Application for Determination, 4 November 2004

² Telecom Wholesale Online Ordering & Tracking (eOR)- Presentation to TelstraClear, August 2004

Step 2 - Process and System Mapping

To assess the process and system impact the inter-operator system proposed by Telecom would have on TelstraClear, Deloitte mapped expected wholesale bitstream business processes at TelstraClear, and then modelled equivalent processes if the proposed eOR system were adopted in its current form. The project:

- Reviewed 'best practice' processes for the expected processes under investigation, based on Deloitte's IndustryPrint™ tool. For more information on Deloitte's IndustryPrint™ tool please see Appendix 1;
- Mapped the expected processes (extrapolation of TelstraClear business processes for existing products and services) and how they should work for the wholesale bitstream service;
- Mapped the same processes again and how they appear to be impacted by Telecom's proposed eOR system; and
- Identified key issues around the proposed eOR system that might have an adverse impact on system TelstraClear Users.

Step 3 – Impact Analysis

Based on the identified issues, the impact analysis developed a model for different scenarios of volume flow and adoption rates for the wholesale bitstream service. The project:

- Extended the business process model by adding high-level volume and throughput metrics;
- Identified how key issues have an adverse impact on throughput metrics;
- Quantified the difference between expected processes (equivalent to existing in-house processes or processes aligned with ‘best practice’) per transaction;
- Developed a model that could derive productivity metrics and costs to quantify the adverse impact of the proposed system for each process, based on different volume flows; and
- Developed a summary model that could aggregate the adverse impact of the proposed system across all processes, and model a gradual uptake scenario.

3. Key Issues Found

Efficient inter-operator processes are desirable for all operators in the market. The closer the processes around OSS and eOR align with ‘best practice’ the more cost effective and fair the overall interactions between multiple carriers are likely to be.

The TelstraClear Bitstream Draft Determination³ requires equivalency of provisioning processes and in particular equivalency of Service Levels between the Wholesale operator and Telecom.

Although this review focuses on independently validating the concerns of TelstraClear it also highlights a number of areas that are likely to be of concern to Telecom.

The following lists the key issues that have been identified with regard to the proposed eOR system:

1. The lack of electronic systems integration functionality in relation to eOR means that TelstraClear has to re-key information into eOR manually. This manual entry and the associated increase in transaction times, as well as higher error and rejection rates, lead to increased transaction costs for TelstraClear.

The project had no visibility of transaction costs on the Telecom side of the system, and whether any re-keying of data out of eOR was required within Telecom. If such re-keying was indeed required, then this might also have an adverse impact on Telecom’s productivity and costs.

2. The eOR system and surrounding business processes do not provide for an efficient resolution in real-time of data errors or other issues that prevent a transaction from being successful on the first pass.

³ TelstraClear Bitstream Draft Determination - 21 April 2005, paras 275-276.

[

] **TCNZRI&TCLRI** This is compounded by the fact that there is presently no finite list of agreed rejection codes and interpretation of rejection reasons is often problematic.

Therefore under the proposed system several iterations are required for many transactions, involving a return to the customer for further information and manual resubmissions on the eOR system. The number of iterations is further increased not just by genuinely incorrect information (as captured from the customer) but also by data handling errors associated with the manual entry of information into eOR.

The need to go through several iterations has an adverse impact on TelstraClear productivity and can cause excessive delays to the customer. It is highly likely that errors and rejections cause a net productivity loss to Telecom as well. Therefore, aligning the system functionality and the rejection / error correction processes around eOR with ‘best practice’ would be of significant benefit to both carriers and support the principle of equivalency as outlined in the Draft Determination.

3. The current eOR system would not alert a TelstraClear user to a change in status around an existing transaction. Therefore, the user must check the system on a continuous basis to keep abreast of any updates.

This ‘trawling’ of the eOR system by the TelstraClear users has an adverse impact on TelstraClear productivity and costs, as users would need to repeatedly log onto the system to check up on the specific status of transactions

The project had no visibility of what business processes occur on the Telecom side of the eOR system. However, if any of the processes within Telecom relied on a timely response from TelstraClear, then the lack of end-user notification out of eOR might also have an adverse impact on Telecom.

4. During the review TelstraClear expressed a concern that Telecom’s side of eOR order processing would need to be adequately staffed. The project did not have sufficient information to assess the impact that a lack of processing personnel for eOR bitstream orders might have on the respective carriers.

However, if people are required to process the eOR orders on Telecom’s side, then this may require a different skill set than that which exists presently in the wholesale provisioning section in Telecom. This may raise issues in relation to workload for Telecom and turnaround times for TelstraClear and other carriers.

5. From the information available to the review, [

]

TCNZRI&TCLRI.

Based on the information available to the review, the system therefore does not enable ‘equivalency of service levels’ between the two carriers

[

] TCNZRI&TCLRI.

This means that the eOR system in its current form is unlikely to ensure compliance with the requirement for ‘no material difference in provisioning’ set out by the Commission in the Draft Determination.⁴

⁴ TelstraClear Bitstream Draft Determination - 21 April 2005, para 276.

6. At present eOR does not offer any fault management functionality to operators such as TelstraClear. This significantly limits TelstraClear's ability to deliver appropriate customer service or to deal with exceptions around specific transactions.

Telecom has stated that eOR will include fault functionality in its next version (TelstraClear UBS Workshop Transcript – 11 February 2005). Telecom has not provided any details on when this functionality might be made available and in what form.

The lack of fault functionality would have an adverse impact on TelstraClear's ability to provide timely customer service. It would also have an adverse impact on productivity and costs, since manual interventions are required.

Conversely, it is possible that a lack of fault functionality also puts Telecom at risk, since issues are not captured and communicated in a timely manner. However, the project did not have sufficient information available to assess the adverse impact this might have on the Telecom side of eOR.

7. From the material available in relation to eOR [

]

TCNZRI&TCLRI

[

] **TCNZRI** [

] **TCNZRI&TCLRI** the

TelstraClear system users would suffer from low productivity for re-keying, as well as increased rejection rates for transactions due to poor data quality.

[**TCNZRI&TCLRI** is likely to mainly affect TelstraClear productivity. However resultant data quality issues potentially could also have adverse impacts on Telecom, depending on internal systems and processes within Telecom.

4. Quantified Process and Systems Impacts

Using the detailed TelstraClear business process activity flows of the key business processes impacted by eOR, a cost impact model was developed. Each activity in the business process flows has a predicted duration based on prior TelstraClear experience of similar tasks within similar wholesale and retail processes.

These activity durations were entered into the cost impact model and multiplied with high-level transaction volume predictions. The resultant model was then be used to develop cost metrics where relevant, so that the impact of identified eOR constraints on TelstraClear business process flows could be quantified over a twelve month period.

Specific impacts in relation to each business process flow modelled are outlined in Appendix A. The high level results of the model are outlined here.

The volume estimates used were provided by TelstraClear based on prior experiences and market knowledge. They span a twelve month operations horizon and three separate scenarios:

1. Low: [] TCLRI Bit Stream Service Orders per Month
2. Medium: [] TCLRI Bit Stream Service Orders per Month
3. High: [] TCLRI Bit Stream Service Orders per Month

	Business Process	Number	Std Effort w/o eOR Minutes	Std Cost w/o eOR	Std Effort with eOR Minutes	Std Cost with eOR	
1	Capture Order Information	O-030	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI	
2	Perform Order Registration	S-010	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI	
3	Support Service Installation requests	O-060	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI	
4	Receive and Handle Customer Enquiries	R-050	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI	
5	Perform Order Completion	S-040	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI	
6	Faults	R-040	<i>Not Modelled as EOR has no functionality in this regard</i>				
			[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI	

[

] TCLRI

[

] TCLRI

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] TCLRI

Model Assumptions:

In developing the cost impact model, various assumptions were made about transaction volumes, activity durations, average number of iterations, etc. Where possible, assumptions have been tested for validity against TelstraClear's experience with customer service interactions and existing inter-operator processes with Telecom. The high level assumptions relevant to the model are as follows:

General Model Assumptions:

- Transaction duration output reflects activity time and not elapsed time – i.e. net staff time spent in carrying out activities
- A standard hourly labour rate of [] **TCLRI** was adopted for customer service support⁵
- Churn is not accounted for in the volume estimates
- The following uptake rates were applied to each of the Low, Medium and High order volume scenarios within the model:

Process	Mth 1	Mth 2	Mth 3	Mth 4	Mth 5
Capture Order Information	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI
Perform Order Registration	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI
Support Service Installation Requests	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI
Receive and Handle Customer Enquiries	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI
Perform Order Completion	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI
Manage Faults	Not modelled.				

(Month 5-12 are all at [] **TCLRI** of volume scenarios)

- Lost revenue and the adverse impact of poor customer service due to errors or delays caused by the OSS system have not been modelled.

⁵ Note that this is likely to understate the cost impacts as the rate does not include any overhead allocation.

- All customer and order updates, or customer queries are assumed to be carried out over the phone with the customer or Telecom support operator (unless specifically stated otherwise). Costs associated with alternative communication channels such as E-mail, letter, etc. are not modelled.
- The expected processes and activity durations modelled without the use of eOR are based on the current methods of electronic file transfer and interaction with Telecom wholesale support personnel.

Specific assumptions related to the use of eOR:

1. The current eOR system would not alert a TelstraClear user to a change in status around an existing transaction. Therefore the TelstraClear user must check the system on a continuous basis to keep abreast of any updates.

[] **TCLRI** minutes has been allowed per transaction for this “trawling” of the eOR system for order status and feedback. On average the system is expected to be checked twice a day and it is expected that eOR will be checked for four days around the due date, to monitor changes in order status.

Each check will take [] **TCLRI** minutes per transaction (navigating to the right screen and scrolling to the right order). After 8 system checks (checking twice a day for four days), [] **TCLRI** minutes of activity will have been added to the transaction duration. If an order remains in an incomplete status after four days, it is assumed that it will be escalated and managed outside eOR.

2. In the process “S-040 Perform Order Completion” the [] **TCLRI** minutes allocated to “Provide Customer Service“ and “Provide Customer Training” is based on information provided by TelstraClear. As there is no equivalent existing process there was no independent timing of this process. This has no net impact in the modelling of the adverse productivity impact for TelstraClear.

3. Additional time necessary to diagnose customer queries or problems has not been modelled.

4. Where response times and/or turnaround times have been predicted for Telecom activity or duration, these times are based on the current level of responsiveness experienced by TelstraClear for processing similar transactions with Telecom. It should be noted that these will impact overall elapsed time, but are not expected to affect the TelstraClear productivity costs in the model.

5. Where activities performed by Telecom have been mapped, these are based on the assumption that these activities align with the key processes as outlined in IndustryPrint™. In the absence of additional information being provided by Telecom, these processes are only indicative descriptions. They do not impact the TelstraClear productivity costs in the model.

6. In the process “O-030 Capture Order Information” the transaction time model does not include creating the customer profile for a brand new customer. The only time that has been included covers the time required to capture order information for an existing customer. Therefore there is an implicit assumption that the transactions will occur for existing customers, which makes the model more conservative in terms of durations. This has no net impact in the modelling of the adverse productivity impact for TelstraClear.

7. The eOR system and surrounding business processes do not provide for an efficient resolution in real-time of data errors or other issues that prevent a transaction from being successful on the first pass. As a result iterations may occur before a transaction is successful.

Where iterations in the business process flows are included in the calculations, the metrics of these iterations are based on TelstraClear experience in relation to the resale of Jetstream products.

In the real world some submissions will take considerably more than the number of iterations and durations modelled to be successful. However the model is based on the average expected number of iterations and duration of each iteration and has not been refined to this additional level of complexity.

Based on TelstraClear experience, the system entry time allocated to subsequent iterations, for both TelstraClear systems and eOR, assume a 50% reduction on the time taken during the first pass through the process.

These iterative cycles occur in relation to two business process flows:

- Process “O-030 Capture Order Information”
- Process “R -050 Receive and Handle Customer Enquiries”

The elements of the iterative cycle and the basis for the allocated iteration metrics are outlined in the tables below.

O-030 Capture Order Information – Iterative Cycle	
Without eOR:	With eOR
Input customer information into capture system – [] TCLRI minutes (50% of the system entry time as in specific assumptions)	Input customer information into capture system – [] TCLRI minutes (50% of the system entry time as in specific assumptions)
Receive accepted form and enter customer details into CRM System [] TCLRI minutes (50% of the system entry time as in specific assumptions)	Receive accepted form and enter customer details into CRM System [] TCLRI minutes (50% of the system entry time as in specific assumptions)
	Manually enter the individual order into eOR – [] TCLRI minutes (50% of the system entry time as in specific assumptions)
	Making manual Checks of eOR for Order status updates – [] TCLRI minutes
	View order status update on eOR – [] TCLRI minutes
Total = [] TCLRI minutes	Total = [] TCLRI minutes

R -050 Receive and Handle Customer Enquiries – Iterative Cycle	
Without eOR:	With eOR:
Investigate the customer issue – [] TCLRI minutes	Investigate the customer issue [] TCNZRI&TCLRI – [] TCLRI minutes
Refer the customer issue to Telecom – [] TCLRI minutes	Enter request on eOR – [] TCLRI minute (50% of the system entry time as in specific assumptions)
	Make manual checks on eOR for issue updates – [] TCLRI minutes
Total = [] TCLRI minutes	Total = [] TCLRI minutes

For more information on these process flows and iterative cycles please see the detailed process flow diagrams for these processes in Appendix A

5. Conclusions

Review Observations

Based on the review findings, the currently proposed solution of eOR for inter-operator processing of the wholesale bitstream service would have a significant adverse impact on TelstraClear productivity and costs.

Although the review was unable to gather information about the Telecom side of the eOR system, it appears likely that the system is also sub-optimal from a Telecom perspective.

The Commission in the Draft Determination has signalled an intent to drive 'equivalence of service'. This implies a requirement for Telecom to provide regular reporting on key service parameters to ensure consistency of service is achieved. Based on the review findings, the current implementation of eOR unfortunately does not appear to support such an intent.

Giving effect to the signalled intent of 'equivalence of service' is not a trivial undertaking. The path forward will require cooperation and collaboration between both TelstraClear and Telecom.

The carriers need to develop a pragmatic solution, whilst complying with the intent of the Commission's Draft Determination. Further guidance may be needed in the final Determination to assist future OSS development.

Electronic System Integration

This review demonstrates that eOR does not offer a robust enough Business-to-Business (B2B) platform that supports electronic systems integration for inter-operator provisioning of services. In situations such as a wholesale environment, more than one carrier is involved in the provision of services to the public. Under such circumstances, where any volume of interactions is likely to take place, a robust electronic platform becomes essential to manage orders.

Order Management is quite a complex process that requires the front-end (where orders are taken and managed) to be linked to a number of back-end systems. The application footprint for the system can vary in breadth and depth. If more information and functionality is required at the front-end, then the underlying application needs to be more robust and more interfaces to other back-end systems are required.

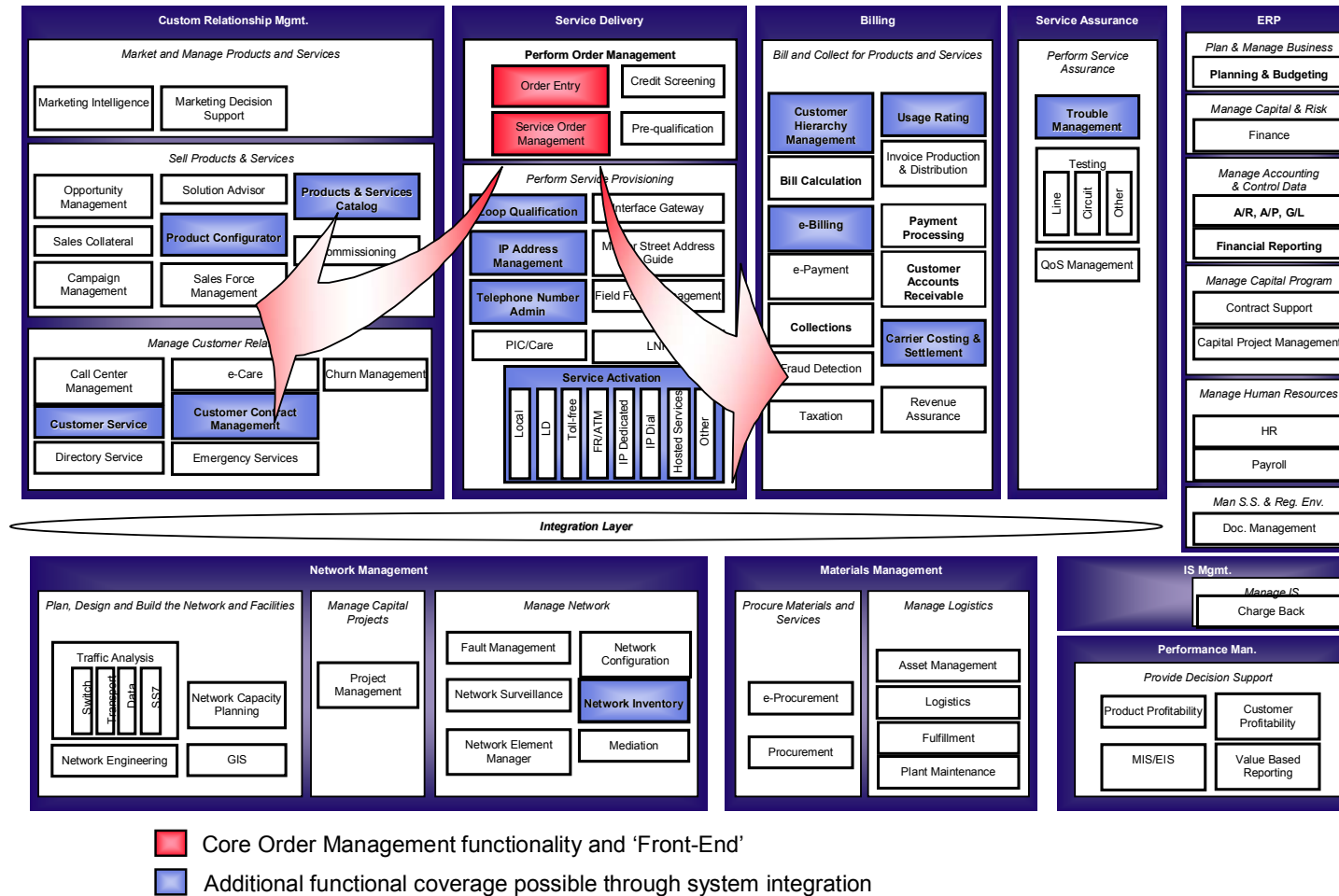
For example, the order management and resulting order provisioning requires significant customer, network and product knowledge. There also needs to be an ability to deal with faults and billing enquiries. In a wholesale environment, some of this information is not held by the respective operator, which can exacerbate issues.

Therefore both the incumbent and other operators need to be able to access relevant information from not just their own, but also from the other operators systems.

This is illustrated in the diagrams on the following pages.

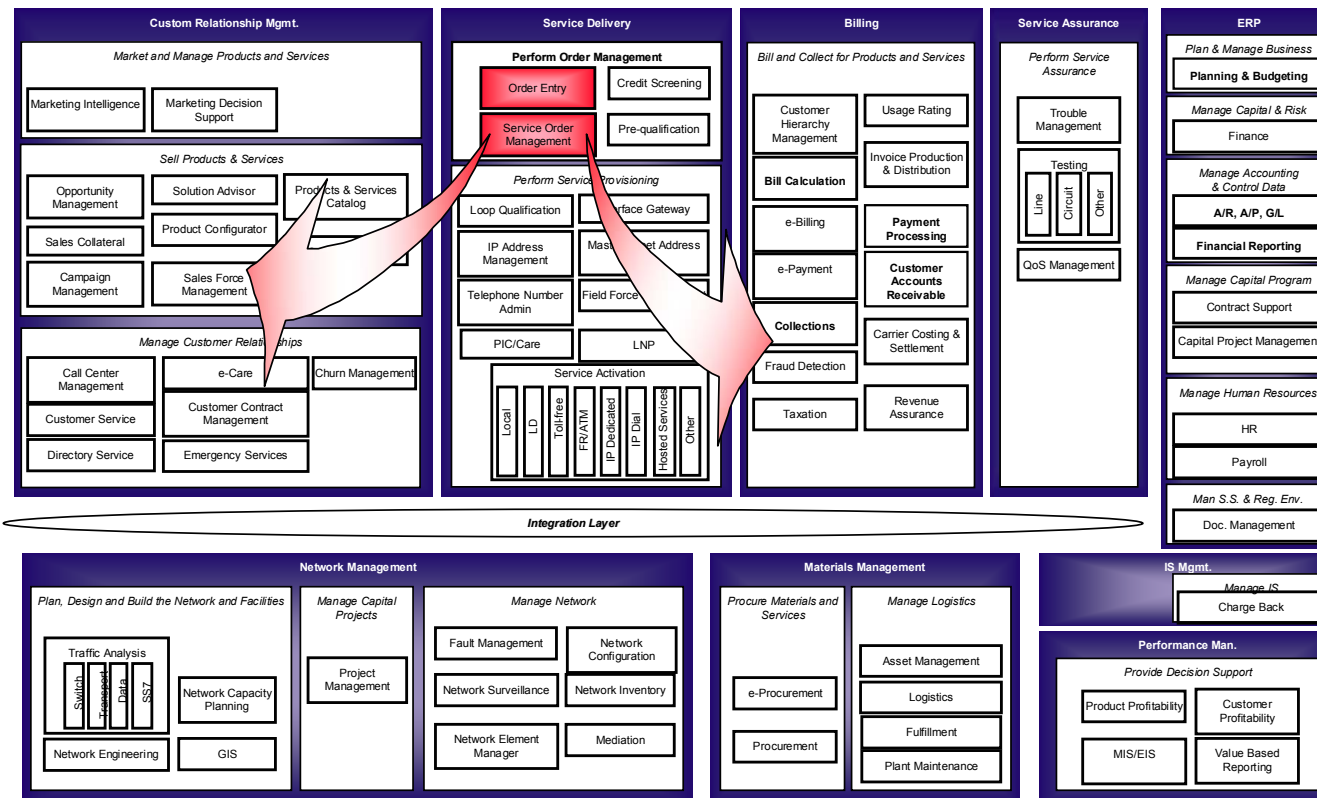
Order Management and Operations Support Systems (OSS)

Order Management needs to reach ‘deep’ into other systems and platforms to be able to deliver services effectively and efficiently:



OSS for Multiple Carriers

Order Management across more than one carrier (e.g. under a Wholesale scenario) requires robust Business-to-Business (B2B) infrastructure. Many different system interactions need to be enabled and the solution needs to be developed between two interfacing carriers through a mutual understanding of each other's system needs.



As the second diagram above illustrates, it is critical that a B2B which electronically integrates systems, is in place, to make wholesale service provisioning efficient and effective.

Unless data and information is exchanged electronically and allows for two-way flow of communications around critical processes, it is very difficult to establish any kind of reasonable service levels between two operators.

Manual processes require too much cycle time and the transaction volumes involved make anything other than electronic communications very difficult.

Because a B2B that electronically integrates systems aims to automate certain aspects of collaboration, it is important that the underlying electronic system integration is designed and engineered by both parties. One party alone cannot design and implement a B2B platform without regard for the other party and system development negotiations need to be bilateral.

For delivery of wholesale bitstream services, Telecom would therefore have to engage with TelstraClear around the common operating model between the two carriers and how the system should be designed and engineered.

Solution Dimensions

A lot of ‘problem solving’ discussions have focused on eOR as the proposed IT solution used for inter-operator processing. However eOR functionality is by no means the only ‘problem’. The underlying IT system constitutes only one dimension of the total solution that needs to be developed with regard to inter-operator processing of transactions.

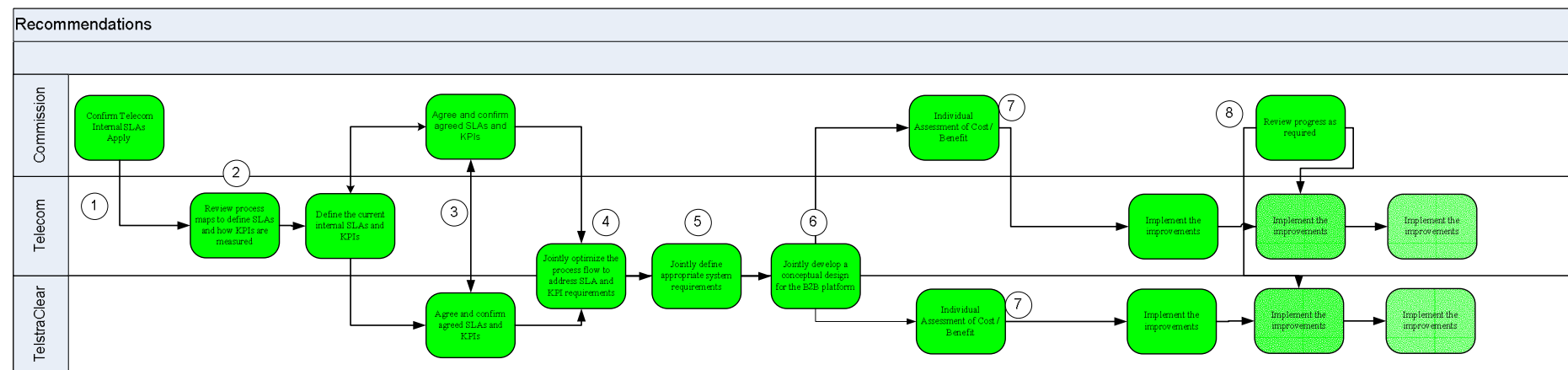
To comply with the intent of the Draft Determination requirement⁶ in the real world, it is necessary for the carriers to come up with a solution that addresses several dimensions. No one dimension should be addressed in isolation and a holistic approach should cover at least the following aspects of an OSS:

- **Process** – how exactly will transactions flow between the two carriers, so that overall efficiency is maximised and ‘equivalence of service’ is achieved? Areas such as the handling of rejections, exceptions and errors will need attention, in particular, to reduce the overall number of iterations. Clarity of Service Level Agreements (SLAs) and corresponding Key Performance Indicators (KPIs) needs to be established, so that a process can be designed that is ‘fit for purpose’.
- **People** – who has what role in the context of the desired process flow? The hand-off points between operators must be clearly defined, so that customers do not fall between the cracks. Accountability for managing SLAs and contractual obligations around KPIs must be clearly defined, if the customers are to have seamless service.
- **Technology** – what data and information flows need to be exchanged between the different operational systems in the operators? Careful attention needs to be paid to eOR or alternative solutions, to ensure that the desired process outcomes and ‘equivalence of service’ become a reality. This is likely to require a robust B2B platform between the carriers that electronically integrates the relevant systems.
- **Value** – how much will it cost? Operators will need to develop appropriate technology solutions that cater for their respective transaction volumes for interaction with eOR.

⁶ See Para 276.

Path Forward

The diagram below illustrates a potential path forward, which might allow TelstraClear and Telecom, with the assistance of the Commission, to arrive at an appropriate solution:



In chronological order, we would expect key steps to develop an efficient OSS system to involve the following:

- Confirmation by the Telecommunications Commissioner that Telecom internal SLAs are a relevant benchmark to establish ‘equivalence of service’. This may include some direction or guidance to Telecom as to what SLAs the Commissioner deems relevant, as well as how some of these should be measured if they are currently not explicit (e.g. by confirming which processes are to be included).
- Review by Telecom (in line with any guidance provided by the Telecommunications Commissioner) of what exactly the internal SLAs are, as well as relevant KPIs. It is important to get clarity on turnaround times (speed) as well as quality (error or exception rates) established up front, so that downstream expectations can be set appropriately. It is reasonable to subsequently revisit the validity and workability of the initial SLAs.
- After an explicit set of SLAs and KPIs has been established by Telecom, this would likely benefit from review by both the Telecommunications Commissioner as well as TelstraClear. Making the expectations explicit at the outset allows clear criteria to be established on what a ‘fit for purpose’ business process might ultimately look like. Unless this is done in a robust manner, there is a risk that solutions get re-litigated further down the track, leading to additional delays. The benefits of taking the time to do this activity accrue to both carriers as ambiguity and uncertainty around expectations is reduced.
- Once the SLAs and KPIs have been specified and agreed, the carriers can commence working on a joint design for the appropriate processes. Essentially, the agreed SLAs and KPIs help to inform the design process, by acting as design principles. The overall process flow for transactions can now be optimised in support of achieving ‘equivalence of service’.

As the process flows are established and designed, system requirements will begin to emerge. There will be occasions where process cycle times need to be reduced or large transaction volumes need to be handled, which will define the requirements for the underlying IT systems. The requirements for the underlying systems infrastructure need to be jointly fleshed out, because both carriers will need to be cognisant of their existing in-house systems.

5. Having established the requirements, a next step would be to develop a conceptual design for the B2B platform. Without such a design, the costs involved and the implications of a B2B platform on the respective carriers cannot be ascertained.
6. The development of the conceptual design will identify the functional components, data requirements and interfaces for an end-to-end solution. The logical boundaries between systems and operators will be

identified and formalised. From these boundaries, responsibilities for development will be determined.

7. Each operator will determine how best to achieve or develop their respective platforms in light of the conceptual design. Each operator will be responsible for implementing components to comply with relevant aspects of the Determination.
8. Once scope for any alterations and improvements to the B2B platform has been established, the operators can commence staged implementation. It is likely that implementation will take an extended period of time, so there may be a need for high-level milestones to be set by the Telecommunications Commissioner with follow-up to ensure that satisfactory progress is being made.

To facilitate a more rapid launch date for the wholesale bitstream service, the eOR issues that have the most adverse impact on TelstraClear productivity may need to be addressed first. Therefore system requirements that enable electronic exchange of information for ordering, more effective handling of rejections, the ability to track orders and avoid iterations, KPI and SLA reporting as well as fault handling are likely to be a priority.

Appendix A - Detailed Business Processes

Overview of Detailed Business Processes

What is IndustryPrint™?

IndustryPrint™ is a Deloitte proprietary tool to assist with modelling specific business processes for a client operating within a particular industry. It applies Deloitte knowledge of good practice business processes for 33 industry segments, including the wireline

telecommunications industry. Each IndustryPrint™ depicts key processes at three levels (Refer to Figure 1) in the form of a hierarchy of components and flows.

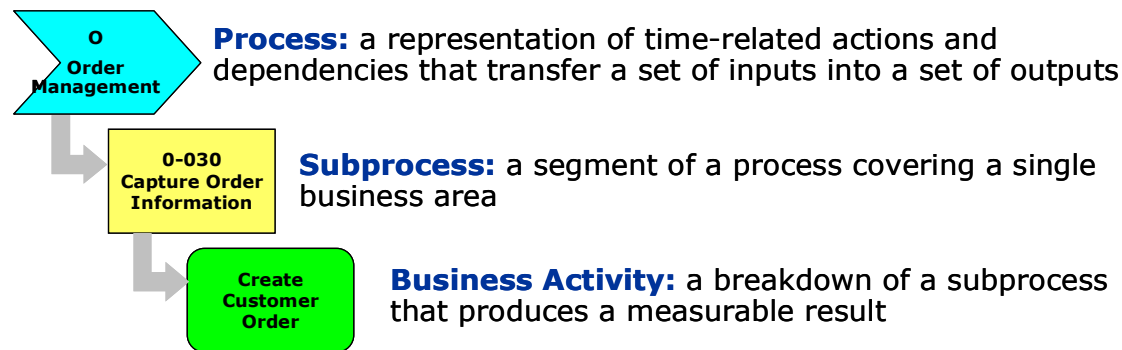


Figure 1 Hierarchy Logic

The IndustryPrint™ for the Wireline Telecommunications industry segment is a detailed representation of the best-practice business processes, sub-processes and activities found within this industry segment. The body

of knowledge that constitutes this IndustryPrint™ is generated by research and experience undertaken by the Deloitte firm internationally.

What is the relationship between IndustryPrint™ and scope of the review?

The scope of this review was limited by TelstraClear to the proposed TelstraClear wholesale bitstream processes of order management, order provisioning and fault management of installed bitstream services. A template IndustryPrint™ for the wireline telecommunications industry

segment was used to assist TelstraClear model their processes down to a detailed activity level for six specific IndustryPrint processes. Figure 2 diagrammatically represents the increasing level of detail and the traceability between process and detailed activities.

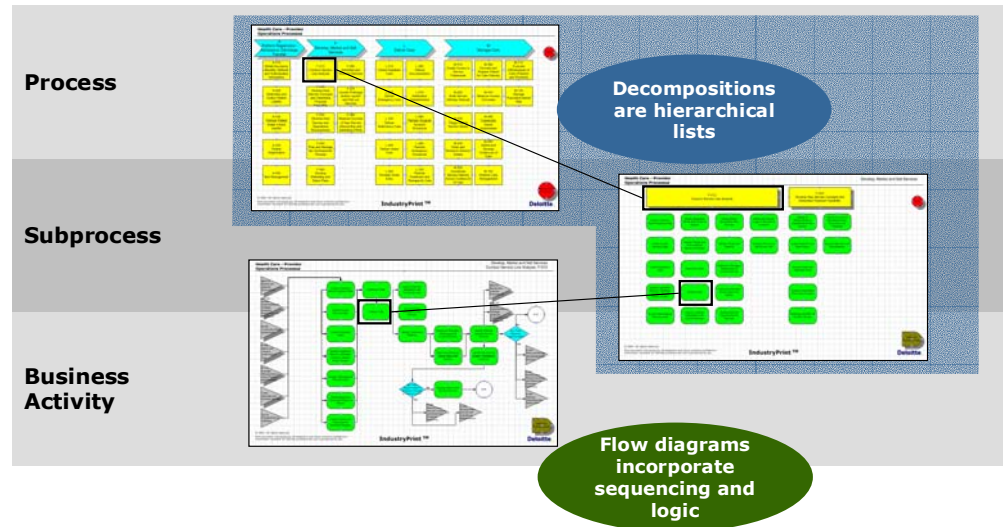


Figure 2 Relationship Between Business Process and Detailed Activities

After modelling the TelstraClear processes, the interactions with the Telecom eOR system to capture data and monitor order progress were analysed against the models. Interactions with the eOR system have been captured as changes against a baseline standard model. The difference between the standard model and a model with eOR was then analysed and quantified.

The standard process flows without the use of eOR and the revised process flows with the use of eOR have both been represented in this document.

Business processes reviewed

The following 6 processes have been confirmed by TelstraClear as relevant for wholesale bitstream services. The brackets refer to the IndustryPrint™ process reference number.

- Capture Order Information (O-030)
- Perform Order Registration (S-010)
- Support Service Installation Requests (O-060)
- Receive and Handle Customer Enquiries (R-050)
- Perform Order Completion (S-040)
- Manage Faults (R-040)

Structure of each of the sections

Each process within the scope of this review is outlined in detail within Appendix A. The structure of the appendix is as follows:

1. Diagram of high level process flows
2. Narration of standard TelstraClear process without proposed eOR functionality
 - 2.1. Diagram of detailed process flow without proposed eOR functionality
3. Narration of TelstraClear process using proposed eOR functionality
 - 3.1. Diagram of detailed process flow using proposed eOR functionality
4. Description and quantification of identified issues

O-030 Capture Order Information

1. Diagram of high level process flows

This process involves the capture of order information by TelstraClear from the customer, validating this information and then submitting the order to Telecom for fulfillment. Iterations in this process flow are due to rejections of orders by Telecom. Rejections of orders may be due to a variety of reasons.

[

]TCLRI

2. Narration of expected TelstraClear process flow

The expected process involves the TelstraClear customer service representative performing the initial order validation and assigning a TelstraClear system generated order tracking number to the order. The customer service representative then guides the customer through the information capture process and the data is entered into TelstraClear's internal system. This system will send batch files directly to Telecom's Wholesale Provisioning section several times a day through an automated process. As a result the submission of orders to Telecom does not consume a transaction time from TelstraClear's perspective as it is done automatically by the internal system.

The order is either accepted or rejected by Telecom. Should the order be rejected, the TelstraClear customer service representative will be informed by E-mail or batch file. The batch file system is only used where the service is an existing service being provided by Telecom and now to be provided by TelstraClear. If it is a new service, email will be used to inform the TelstraClear customer service representative. Following this the TelstraClear customer service representative may have to return to the customer to seek clarification or additional information.

When the order is accepted by Telecom, TelstraClear will be informed by E-mail or batch file, again depending on whether it is a new service or a transfer from Telecom. At this point of the process, TelstraClear internal systems are updated with the order status and the customer fulfilment process is initiated. The figure below reflects the expected TelstraClear process.

2.1. Diagram of expected TelstraClear process flow without eOR

[

] TCLRI

3. Narration of TelstraClear process flow using eOR

Using the current eOR functionality and user interface, manual order entry into eOR for each individual order is required after entry into TelstraClear's systems. On entry of the order details into eOR, [] TCNZRI. []

] TCNZRI&TCLRI.

Following initial submission of the order into eOR, a TelstraClear customer service representative will regularly return to eOR to search for a confirmation update from Telecom as to the acceptance or rejection of the order. This manual polling of the eOR system is required for every order and is not triggered by any eOR system event.

If the order is rejected, []

] TCNZRI&TCLRI. The TelstraClear customer service representative will return to the customer to seek clarification or additional information to address the rejection reason. The TelstraClear customer service representative will continue regular polling of the eOR system for the next rejection reason or subsequent confirmation.

Once the order is confirmed, a TelstraClear customer service representative updates internal systems with the order status and the customer fulfilment process is initiated. The figure below reflects the expected TelstraClear process involving eOR.

3.1. Diagram of TelstraClear process flow using eOR

[

] TCLRI

4. Description and quantification of the identified issues

1. The lack of B2B functionality in relation to eOR means that TelstraClear has to re-key information into the system manually. This manual entry and the associated increase in transaction times, as well as higher error and rejection rates, lead to increased transaction costs for TelstraClear. In relation to the process above, the manual entry adds an additional [] **TCLRI** minutes to the process as well as creating a risk of higher error and rejection rates.
2. From the material available in relation to eOR [] **TCNZRI&TCLRI**. This is reflected in the [] **TCLRI** minutes manual entry time added to the process as referred to in point 1 above.
3. The eOR system and surrounding business processes do not provide for an efficient resolution in real-time of data errors or other issues that prevent a transaction from being successful on the first pass. For each additional iteration that is required due to rejections in this process an additional [] **TCLRI** minutes will be introduced into the transaction time. This is due to [] **TCLRI** additional minutes of manual entry (50% of the initial entry time) as well as [] **TCLRI** additional minutes “trawling time” required for the additional iteration and the [] **TCLRI** minutes to receive the update and progress the order.
4. The current eOR system would not alert a TelstraClear user to a change in status around an existing transaction. Therefore the TelstraClear user must check the system on a continuous basis to keep abreast of any updates. This “trawling” represents an additional [] **TCLRI** minutes, for each iteration, in relation to this process.

O-030 Capture Order Information		Estimated Volume Per Month		
Detail	Time Impact on Transaction (minutes accumulated for each activity)	[] TCLRI	[] TCLRI	[] TCLRI
Increase in Total Transaction Time Without Iterations Per Month	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI
Increase in Total Transaction Time Due to Iterations per Month	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI
Total Increase in Transaction Time Per Order Month	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI
Total Additional Cost Per Month for This Process		[] TCLRI	[] TCLRI	[] TCLRI

S-010 Perform Order Registration

1. Diagram of high level process flows

This process flow involves the confirmation of order registration. Most of the activity in this process flow takes place within Telecom. However the key tasks from a TelstraClear perspective are to ensure the receipt of updates and confirmation of order registration from Telecom.

[

] TCLRI

2. Narration of expected TelstraClear process flow

The expected process without eOR involves the allocation of network elements by Telecom and the investigation as to whether the infrastructure is in place to allow the order to be completed. This involves checking the available infrastructure for the customer's specified location.

If the infrastructure is suitable, then Telecom informs TelstraClear of this via an E-mail and then moves to the S040 Perform Order Completion

process flow. If the infrastructure is not in place Telecom will schedule the workforce and dispatch the technicians to put this in place, if appropriate, and then move to S-040 Perform Order Completion.

For more information on the process flow please see the detailed process flow diagram for this process below.

2.1. Diagram of expected TelstraClear process flow without eOR

[

] TCLRI

3. Narration of TelstraClear process flow using eOR

If eOR is used in relation to this process the Telecom activities for the process would be similar but instead of E-mailing TelstraClear to update and confirm order registration this information will be entered into eOR.

A TelstraClear customer service representative will be required to regularly return to eOR to search for a confirmation or update from Telecom as to the acceptance or rejection of the order. This manual polling of the eOR system is required for every order and is not triggered by any eOR system event.

For more information on the process flow please see the detailed process flow diagram for this process below.

3.1. Diagram of TelstraClear process flow using eOR

[

] TCLRI

4. Description and quantification of the identified issues

1. The current eOR system would not alert a TelstraClear user to a change in status around an existing transaction. Therefore the TelstraClear user must check the system on a continuous basis to keep abreast of any updates. In relation to this process the previous [] TCLRI minute

transaction time to receive an update from Telecom is replaced by the [] TCLRI minute transaction time to “trawl” eOR for the update.

2. From the information available to the review, [

] TCNZRI&TCLRI.

S-010 Perform Order Registration		Estimated Volume Per Month		
Details	Time Impact on Transaction (minutes accumulated for each activity)	[] TCLRI	[] TCLRI	[] TCLRI
Increase in Total Transaction Time Without Iterations Per Month	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI
Increase in Total Transaction Time Due to Iterations per Month	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI
Total Increase in Transaction Time Per Month	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI
Total Additional Cost Per Month for This Process		[] TCLRI	[] TCLRI	[] TCLRI

O-060 Support Service Installation requests

1. Diagram of high level process flows

This process flow involves the capture of customer service installation requirements and submitting the order to Telecom. Telecom will either then complete the installation of the service and update TelstraClear of this or inform them that the service is unavailable. TelstraClear will then update the customer accordingly.

[

]TCLRI

2. Narration of expected TelstraClear process flow

The expected process without eOR would involve the definition of the customer service installation requirements. TelstraClear submits these requirements to Telecom.

If the facilities are unsuitable to complete the order Telecom will E-mail TelstraClear to inform them of this fact. TelstraClear will in turn inform the customer.

2.1 Diagram of expected TelstraClear process flow without eOR

[

If facilities are adequate, then Telecom will complete the order and inform TelstraClear of completion via E-mail.

For more information on the process flow please see the detailed process flow diagram for this process below.

] TCLRI

3. Narration of TelstraClear process flow using eOR

Should this process be undertaken with eOR the installation order will be entered into eOR.

A TelstraClear customer service representative will regularly return to eOR to search for a confirmation or update from Telecom as to the acceptance or rejection of the order. This manual polling of the eOR system is required for every order and is not triggered by any eOR system event.

If such a rejection of the order is entered into the system by Telecom, then TelstraClear will inform the customer on receipt of this information.

If the facilities are suitable Telecom will complete the order and update eOR. A TelstraClear customer service representative will regularly return to eOR to search for this completion update from Telecom.

For more information on the process flow please see the detailed process flow diagram for this process below.

3.1. Diagram of TelstraClear process flow using eOR

[

] TCLRI

4. Description and quantification of the identified issues

1. The lack of electronic system integration functionality in relation to eOR means that TelstraClear has to re-key information into the system manually. This manual entry and the associated increase in transaction times, as well as higher error and rejection rates, lead to increased transaction costs for TelstraClear. In relation to this process the manual entry of the order into eOR adds an additional [] TCLRI minutes to the overall transaction time.
2. The current eOR system would not alert a TelstraClear user to a change in status around an existing transaction. Therefore the

TelstraClear user must check the system on a continuous basis to keep abreast of any updates.

This “trawling” adds a total of [] TCLRI minutes to the transaction time for this business process flow. This additional time is due to an additional [] TCLRI minutes of transaction time for the process in relation to receiving the update that the order is accepted as well as an additional [] TCLRI minutes to receive the update that the installation is complete.

Impact:O-060 Support Service Installation requests		Estimated Volume Per Month		
Detail	Time Impact on Transaction (minutes accumulated for each activity)	[] TCLRI	[] TCLRI	[] TCLRI
Increase in Total Transaction Time Without Iterations Per Month	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI
Increase in Total Transaction Time Due to Iterations per Month	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI
Total Increase in Transaction Time Per Order Month	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI
Total Additional Cost Per Month for This Process		[] TCLRI	[] TCLRI	[] TCLRI

R-050 Receive and Handle Customer Enquiries

1. Diagram of high level process flows

This process flow involves the receipt of customer enquiries as well as the subsequent investigation of any issues related to the enquiry. This investigation involves the submission of aspects of the enquiry to Telecom. The handling of the enquiry may require account adjustments. These in turn result in a change request being submitted to Telecom. Following the completion of the change request the system is updated and the order is closed.

[

] TCLRI

2. Narration of expected TelstraClear process flow

The expected process involves the receipt of the enquiry from the customer. The enquiry is then routed to the appropriate response centre.

The customer representative will take the details of the enquiry or resolve immediately if possible.

If the enquiry requires further investigation this is done off line and usually involves referring some aspect of the enquiry to Telecom.

This referral is usually done through a phone call to Telecom and a simple enquiry, such as a query over the progress of a connection, is usually dealt with on-line during this phone call.

The outcome of the enquiry will be feed back to the customer and may lead to a change request being made in relation to some aspect of the customers account, such as a change in service or account status. These change requests are E-mailed to Telecom.

Once Telecom has implemented the change request an E-mail is sent to TelstraClear to inform them of the status change. The TelstraClear system is then updated and the order is closed.

For more information on the process flow please see the detailed process flow diagram for this process below.

2.1. Diagram of expected TelstraClear process flow without eOR

[

] TCLRI

3. Narration of TelstraClear process flow using eOR

If eOR is used in relation to this process the submission of the initial enquiry will no longer be via a phone call but instead would involve a TelstraClear customer service representative locating the order on the eOR system and entering a request for some update information in relation to the progress of a connection.

Once the enquiry has been entered into eOR the TelstraClear customer service representative will regularly return to eOR to search for a response from Telecom. This manual polling of the eOR system is required for every order and is not triggered by any eOR system event.

If, following the response to the initial enquiry from Telecom, a change request is necessitated, then this will be entered onto eOR rather than E-mailed to Telecom.

Once the change request has been entered into eOR, the TelstraClear customer service representative will regularly return to eOR to search for a confirmation of completion of the change request from Telecom.

Once the status of the change request is identified as completed the TelstraClear system is then updated and the order is closed.

For more information on the process flow please see the detailed process flow diagram for this process below.

3.1. Diagram of TelstraClear process flow using eOR

[

] TCLRI

4. Description and quantification of the identified issues

1. The eOR system and surrounding business processes do not provide for an efficient resolution in real-time of data errors or other issues that prevent a transaction from being successful on the first pass.

These iterations add [] **TCLRI** minutes to the transaction time for this process. This increase is largely due to the “trawling” in relation to each submission of a query in order to receive an update.

As TelstraClear estimates, based on previous experience, that each query will require two additional iterations before it is resolved the net effect of this issue is to add [] **TCLRI** minutes to the overall transaction time.

2. The current eOR system would not alert a TelstraClear user to a change in status around an existing transaction. Therefore the TelstraClear user must check the system on a continuous basis to keep abreast of any updates.

In relation to this process the “trawling” associated with this issue adds [] **TCLRI** minutes to the transaction time to receive an update in relation to an initial query, not including the iterations discussed above.

In addition another [] **TCLRI** minutes trawling is added to the transaction time in relation to receiving confirmation of the resulting change request from Telecom.

R-050 Receive and Handle Customer Enquiries		Estimated Volume Per Month		
Detail	Time Impact on Transaction (minutes accumulated for each activity)	[] TCLRI	[] TCLRI	[] TCLRI
Increase in Total Transaction Time Without Iterations Per Month	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI
Increase in Total Transaction Time Due to Iterations per Month	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI
Total Increase in Transaction Time Per Month	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI
Total Additional Cost Per Month for This Process		[] TCLRI	[] TCLRI	[] TCLRI

S-040 Perform Order Completion

1. Diagram of high level process flows

This process flow involves the completion of the installation by Telecom as required by the order as well as the final completion of the order. TelstraClear require updates and notification of completion of both the installation and ultimately the order to update their system and close the order.

I

] TCLRI

2. Narration of expected TelstraClear process flow

The expected process would involve the completion of the bitstream installation by Telecom and then confirming this installation with TelstraClear via E-mail.

On receipt of this E-mail TelstraClear would then carry out the necessary customer service and training.

Following installation Telecom will update their records and billing information and then inform TelstraClear that the order is complete via E-mail.

On receipt of this E-mail TelstraClear will update their systems and close the order.

For more information on the process flow please see the detailed process flow diagram for this process below.

2.1. Diagram of expected TelstraClear process flow without eOR

[

3. Narration of TelstraClear process flow using eOR

If eOR is used in relation to this process Telecom would update this system rather than sending an E-mail to TelstraClear in order to inform them of installation completion.

The TelstraClear customer service representative will regularly return to eOR to search for this completion status response from Telecom. This manual polling of the eOR system is required for every order and is not triggered by any eOR system event.

Once Telecom have made the necessary record and billing adjustments they will enter the updated status of the order into eOR. The TelstraClear customer service representative will regularly return to eOR to search for this update from Telecom. On receipt of this update TelstraClear will update their systems and close the order.

For more information on the process flow please see the detailed process flow diagram for this process below.

3.1. Diagram of TelstraClear process flow using eOR

[

4. Description and quantification of the identified issues

The current eOR system would not alert a TelstraClear user to a change in status around an existing transaction. Therefore the TelstraClear user must check the system on a continuous basis to keep abreast of any updates. In relation to this business process flow the “trawling” associated with this issue adds [] **TCLRI** minutes to the transaction time.

This increase is due to [] **TCLRI** minutes additional transaction time to receive the update from Telecom in relation to installation completion and another [] **TCLRI** minutes associated with receiving the update from Telecom in relation to closing the order.

S-040 Perform Order Completion		Estimated Volume Per Month		
Detail	Time Impact on Transaction (minutes accumulated for each activity)	[] TCLRI	[] TCLRI	[] TCLRI
Increase in Total Transaction Time Without Iterations Per Month	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI
Increase in Total Transaction Time Due to Iterations per Month	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI
Total Increase in Transaction Time Per Month	[] TCLRI	[] TCLRI	[] TCLRI	[] TCLRI
Total Additional Cost Per Month for This Process		[] TCLRI	[] TCLRI	[] TCLRI

R-040 Manage Faults

1. Diagram of high level process flows

This process flow deals with the management of customer trouble reports and outages.

[

] TCLRI

2. Narration of expected TelstraClear process flow

The expected process involves the receipt of the trouble report or outage from the customer by a customer service representative at TelstraClear. The customer's profile is reviewed and pre-diagnosis is carried out in relation to the customer report.

If the pre-diagnosis does not resolve the issue, the information gathered from this process and the trouble tickets are submitted to Telecom.

Telecom then updates TelstraClear in relation to the expected corrective action and Timeframe and TelstraClear in turn informs the customer.

On completion of the repair an E-mail is automatically sent to TelstraClear from Telecom to update TelstraClear of this status change.

If the customer is satisfied with the repair TelstraClear closes the trouble ticket and updates the customer account.

For more information on the process flow please see the detailed process flow diagram for this process below.

2.1. Diagram of expected TelstraClear process flow without eOR

[

] TCLRI

3. Narration of expected TelstraClear using eOR

At present eOR does not offer any fault functionality to service providers such as TelstraClear.

4. Description and quantification of the identified issues

As a result of eOR not providing fault functionality, this significantly limits TelstraClear's ability to deliver appropriate customer service or to deal with exceptions around specific transactions. As a result of this lack of fault functionality this process flow deals solely with the process flow as it is expected to operate for UBS without eOR

Appendix B - System Usability

Order Header Screen

- From the material available in relation to eOR [

TCNZRI&TCLRI [

]

] TCNZRI

- [

] TCNZRI

- [

] TCNZRI

- The requirement to repeat this process [] TCNZRI increases the manual entry time when entering an order into eOR. This entry time is reflected in the detailed business (R-050 Receive and Handle Customer Enquiries and O-030 Capture Order Information)

] TCNZRI

Line Entry Screen

- The screen shot opposite shows [] TCNZRI.

- [] TCNZRI
- [] TCNZRI
- [] TCNZRI
- TCNZRI]

- [] TCNZRI&TCLRI This location information may need to be quite detailed to ensure the correct location is identified. [] TCNZRI&TCLRI

- If this information is incorrect or insufficient it may result in a failure to complete an order and excessive delays for the customer while the installation is rescheduled.

- [] TCNZRI&TCLRI] TCNZRI

Appendix C - Telecom Wholesale Online Ordering and Tracking (eOR)
- entire document is TCNZRI