Inland Revenue
Te Tari Taake

Business Transformation

Inland Revenue

Business Transformation Programme

Business Solution Blueprint – Intelligence Led

Senior Responsible Owner:

Prepared by: Intelligence Led Workstream
Date: 16/07/2015 v1.05 FINAL

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About this Document

This deliverable defines the High Level Design for the Intelligence Led (IL) component of the Business Transformation (BT) Programme through:

- Establishing the context for the Intelligence Led business solution architecture
- Providing an overview of the end state solution for Intelligence Led
- Defining the Level 3 processes which are applicable for the Intelligence Led business solution architecture
- Defining the Application and Information Architecture associated with the Intelligence Led business solution architecture.

This deliverable will be an input into the BT Programme's Detailed Design phase for IL.

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Document Signoff

Formal Review Area	Name	Signature	Date
Responsible person			
Accountable Person			
The following people have supported the development of this document:			

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The following people and groups have been consulted:
 	
• Business Owner Forum (BOF) – Analytics and Insights
• Design Integration Forum (DIF)
• Service Delivery
 o Performance and Optimisation
  ▪ Business Owners Team
  ▪ External Provider Relationships
  ▪ Business Priority Management
  ▪ Software Developers Liaison Unit
  ▪ Events and Support
   • Returns and Event Delivery (RED)
 o Customer Services
  ▪ Transactional
  ▪ Interactional
  ▪ Community Compliance
  ▪ Strategy and Executive Support
 o Investigations and Advice
  ▪ Large Enterprise Services
 o Collections
  ▪ Capability Planning and Relationship Management
 o Business Planning and Integration
  ▪ Compliance
 o Litigation Management Unit (Solicitors)
• Information, Intelligence and Communications
 o Customer Strategy
 o Analytics and Insight
  ▪ Insight and Intelligence Advice
  ▪ National Research and Evaluation Unit
• Policy and Strategy
 o Strategy
  ▪ Better Public Services
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• Performance, Facilities and Finance
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• Change and Investment Analysis
• Change
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• Technology Strategy and Operations
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• Investigations and Advice
  o Legal and Technical Services
• Corporate Integrity and Assurance
  o Risk and Assurance
• Current Programmes
  o Child Support Reform
  o Better Public Services
• BT Programme Workstreams
  o Policy
  o Organisational Change Management
  o Enterprise Support Services
  o Core Tax and Social Policy
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The following people and groups have been informed of the development and completion of this document: • BOF - Data • BOF - Process • BOF - IS			

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1   Executive Summary

The Business Solution Blueprint will define the highest order articulation of what the Business Transformation (BT) Programme delivers. It is a business-led high level view of the BT Programme that spans change enablement, customer experience, policy, business process, application and technology.

This Executive Summary will discuss the fundamental characteristics of the Intelligence Led (IL) business solution architecture that Inland Revenue (IR) will need to realise the vision for transformation, providing a succinct summary of the future state. This section will also include an overview of the impact this future state will have on IR's customers, business partners and staff.

Finally, this Executive Summary shows how to navigate the comprehensive Blueprint to find additional detail in areas of specific interest.

1.1   Foundation of the Future State

The challenges of becoming Intelligence Led and what it means to be an Intelligence Led organisation are highlighted in an Intelligence Led Strategy[1] developed by Insight and Intelligence Advice. This strategy highlights that IR faces an increasingly challenging environment and that a focus on doing things well (tactically) is not enough. IR must maximise its use of intelligence in decision making to ensure value is maximised by also doing the right things. The Intelligence Led Strategy notes:

- The ability to leverage intelligence is of critical importance in a world where an information scarce environment has shifted to one of information overload.

- Previously IR has not considered its decisions or its information in a fully co-ordinated way.

- To create maximum value for the customer and the enterprise, while dealing with both analytical and organisational complexity, IR must become an Intelligence Led organisation.

These themes were reflected across the workshops held to develop the solution architecture and most importantly resoundingly supported by the breadth of the stakeholders that were engaged.

The future state IL architecture that will be outlined in this document is specifically structured to transform IR's current state architecture in five fundamental ways:

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[1]

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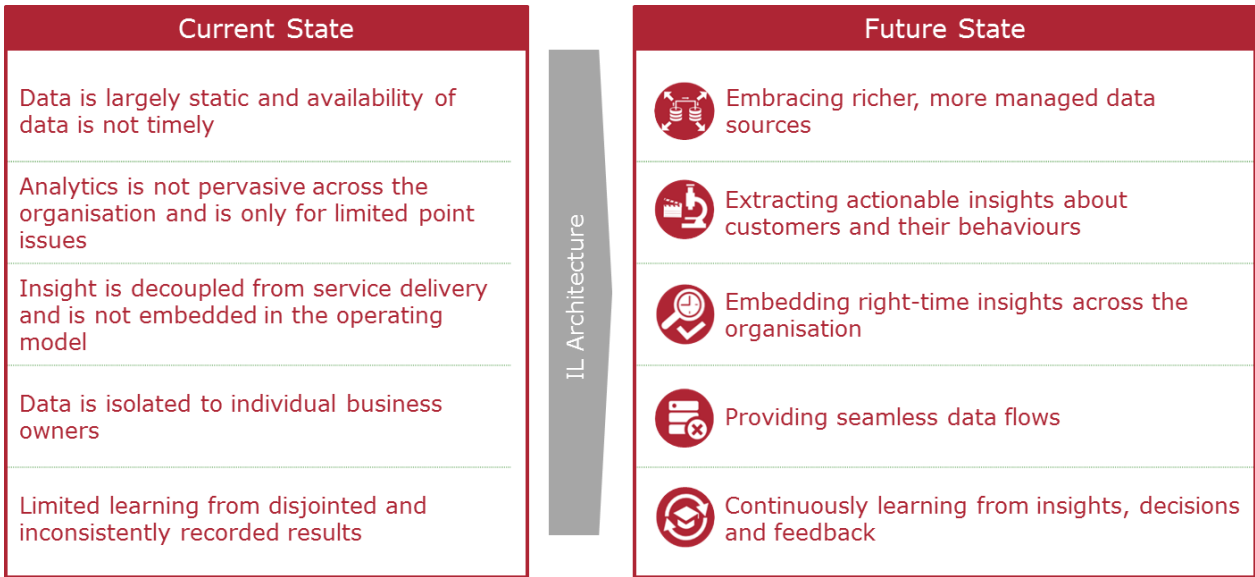| Current State		Future State
Data is largely static and availability of data is not timely	IL Architecture	Embracing richer, more managed data sources
Analytics is not pervasive across the organisation and is only for limited point issues		Extracting actionable insights about customers and their behaviours
Insight is decoupled from service delivery and is not embedded in the operating model		Embedding right-time insights across the organisation
Data is isolated to individual business owners		Providing seamless data flows
Limited learning from disjointed and inconsistently recorded results		Continuously learning from insights, decisions and feedback

Figure 1. Future State characteristics of the Intelligence Led Architecture

Further detail of each of these future state components of the IL changes will be outlined in the following sub-sections.

1.1.1 Embracing richer, more managed data sources

How does the architecture support this?

The IL architecture will enable IR to evolve and extend its current limited sources of structured and unstructured data from third parties, business partners and customers to improve the collection of information and improve intelligence led interventions. This will not only enable IR to generate intelligence and deep insights, but will help facilitate data and information sharing across business partners, increasing the sharing of intelligence and information across government to improve delivery of services. The future state architecture characteristics will include the following elements.

- **Data lake environments[2].** The IL architecture will support controlled and rapid ingestion of new data sources into a controlled yet agile environment to support initial exploration towards a better understanding of how they may enrich existing insights.

- **Flexible, reusable business partner constructs.** The velocity, veracity and volume of external data will be specifically addressed with reusable frameworks so that the drastically reduced administrative onus supports IR's commitment to right-time decision-making.

- **Rapid data quality and preparation.** Reusable yet highly-specific data preparation processes will be readily available for meeting IR's high standards for data quality and ingestion criteria.

What is the benefit[3]?

As data and business experts identify a potentially valuable new source of external data, IR will be able to respond rapidly and safely by quickly establishing the necessary relationships before ingesting the information into a controlled, dedicated environment. The low overhead of establishing this relationship means IR will no longer need to incur lengthy delays attempting to prove the unknown value of the data and will be able to translate the benefits into improved decision-making at-speed.

Informed assessment of the data to be accessed or exchanged enables better determination of whether it is necessary and relevant to both access and store the information. Balance of control and agility supports the need to govern ingestion and subsequent usage while recognising the diversity of potential data sources and formats presented by big-data.

A richer data universe will strengthen the breadth and depth of insights that IR can unearth about its customers, their compliance patterns and their channel usage. Specific benefits are listed below.

- **Improve compliance rate** by providing deeper insight into a customer's motivations, opportunities and capabilities for both compliant and non-compliant behaviours.

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[2] A scalable data repository built to capture data from any potential source, and in any potential format, for assessment and subsequent analysis in an agile but controlled manner. These data repositories support data discovery, ad-hoc research and investigations, advanced analytics, operational intelligence, business intelligence and reporting. Whilst still applying strict governance, security and control the key difference from a Data Warehouse being the ability to preserve data in its original format without requiring it to conform to a defined scheme. Integrating the lake with the rest of the tools and platforms that IR depends on, turns the data lake into an Enterprise Data Hub.

[3] The bolded bulleted benefits have been sourced from the Transformation Briefing Pack.

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- **Improved accuracy of assessments** by enriching the field of validation against which self-managed information can be immediately validated at the point of entry.

- **Increase efficiency of IR operations** by standardising design and execution of data quality activities such as cleansing, normalising and transforming attributes.

The following examples are intended to show possible applications of this IL architecture feature and should be considered for illustrative purposes only and should be read in conjunction with the detailed customer scenarios and personas which provide a full view of the customer experience.

Embracing Richer, Managed Data Sources: An Example
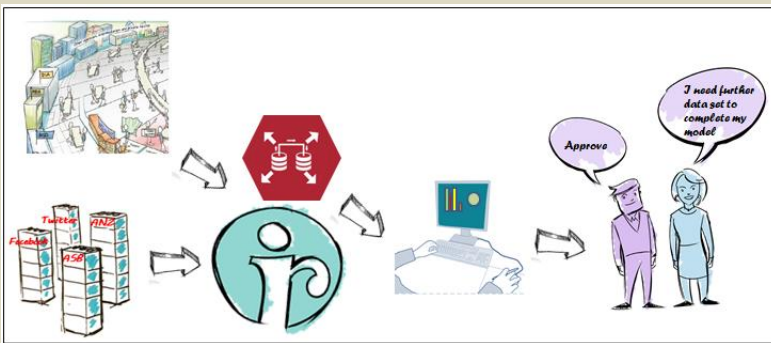
Discussions with a third party with whom IR has an existing service relationship have identified the potential for a new data source to assist with the identification of changes in customer circumstance. Following the third party data governance process, Joanne an analyst who focuses on insights related to community compliance, seeks and obtains approval to assess the value of the new data source. Joanne receives a subset of the data for assessment and ingests this through the data lake in a controlled manner.

With data now residing in the data lake, Joanne is able to analyse the data in the lab environment and simulate the impact and benefit from obtaining the wider dataset. Joanne is able to draw upon expertise of relevant subject matter experts to test the suitability of the data as well as placing the sample in context of information and knowledge already held. The data is only accessible to the lab at this point and its usage restricted.

Having assessed value and quality attributes of the dataset, and determined its application, with the support of the wider business Joanne reports back to the governance process to seek approval to obtain the full dataset. Joanne uses the standard processes to setup agreements to bring the information into the organisation, defining how the data will be used and retained within IR. With an understanding of its application in IR, Joanne is also able to define the quality expectations of the data. Retention of the data in addition to its use will be subject to satisfying necessary and relevant criteria.

Using the exchange data process, the full data set is securely obtained via an electronic transfer and ingested via a controlled and governed process directly into the data lake where it is automatically assessed to ensure the quality of the data meets the pre-defined expectations for IR. Within the Analytics Laboratory, the data is made available to support the extraction of new insights to support IR's objectives, or the refinement of existing insights in response to the new information. Expertise from the wider business is drawn upon to support the on-going assessment and usage of the data.

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1.1.2 Extracting actionable insights about customers and their behaviours

How does the architecture support this?

The IL architecture will enable IR to gather together data, information and associated organisational knowledge and extract actionable insights. This includes providing both macro level insights based on trends, risk and behaviour and customer profile and micro level customer segmentation. This will allow specialists to extract targeted customer, compliance and behavioural insights which will then be used to aid investigation and case management, facilitate compliance, personalise customer interactions and inform decision makers. The future state architecture characteristics will include the following elements.

- **Best-of-breed techniques.** The IL architecture will expose a hybrid software suite to the full breadth of data available within the Analytics Laboratory environment and will frequently extend to embrace emerging market-leading products.

- **Highly specialised analytics talent.** The IL architecture will be directly supported by IR's talent management and retention strategy to nurture and develop dedicated compliance, customer and service experience analytical experts.

- **Collaborative visualisation and interpretation of results.** The IL architecture will expose results in the Analytics Laboratory environment in such a way that it will be possible for insights to be digested by business experts, analytical specialists and translatory strategists alike, to support accuracy, usability and ultimate alignment to outcomes.

- **Agile and reliable methods.** The IL architecture will support work practices that promote agile, iterative model development and validation to expose only the most robustly considered results to service design and delivery processes.

What is the benefit[4]?

IR will seek to understand all sources of uncertainty and use that knowledge when making decisions. Risk is defined as the effect of uncertainty on objectives (ISO 31000:2009); in taking an Intelligence Led approach, IR will focus on reducing the uncertainty associated with decisions across the organisation.

Maintaining a customer centric approach to these decisions will help us focus on improving the customer experience by making it easier and simpler for customers to achieve their objectives while also reducing the cost of providing services.

IR will gain a deeper understanding of current, predicted and simulated customer behaviours, compliance patterns, channel usage and community perceptions. This will be particularly critical where customer behaviour may include avoiding interaction with IR and its Business Partners. Specific benefits are listed below.

- **Improve compliance rate** by making it easier for customers to interact with IR systems and processes and directing proactive and reactive interventions based on a better understanding of a customer's current and predicted compliance behaviours.

- **Improved customer experience** as a result of greater availability and tailoring of information to customer circumstances.

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[4] The bolded bulleted benefits have been sourced from the Transformation Briefing Pack.

The following examples are intended to show possible applications of this IL architecture feature and should be considered for illustrative purposes only and should be read in conjunction with the detailed customer scenarios and personas which provide a full view of the customer experience.

Using Best of Breed Techniques and Highly Specialised Analytics Talent: An Example

Implementation of FATCA and other cross border information sharing initiatives has resulted in significant volumes of information to be analysed to understand potential for cross border tax avoidance within existing customer segments.

Leveraging the Analytics and Insights Centre of Excellence (COE) the information received is ingested through the data lake into the lab environment where it is combined with the existing IR data universe for analysis. Specialists in the COE apply a range of techniques to develop and test a variety of models as they search for attributes and relationships that help identify potential tax avoidance in IR's customer population.

Given the breadth and significance of the challenge, within the COE a multi-disciplinary team is applied to the problem including: expertise in handling and processing significant volumes of data, data scientists to search for and identify correlations in the data; and management scientists help validate the insights to assess their applicability to changes in service design and to simulate the effect of applying the insights against common transactions and IR's data holdings.

The combined team works with agility throughout this process of discovery, learning as it goes and adjusting its use of techniques based on insights identified.

Working Collaboratively to Visualise and Interpret the Results: An Example

Continuing the example above, having identified the leading models and predictors the team shares their findings with business experts in service design and delivery. The group collaborate using simulation and visualisation of the different results. This will help optimise the opportunities to implement while balancing the processing requirements and potential service and policy impacts. Business experts leverage the visualisation of the options to communicate the preferred options and engage senior business stakeholders in a meaningful way.

1.1.3   Embedding right-time insights across the organisation

How does the architecture support this?

The IL architecture will extend traditional information management processes to ensure that customers, business partners and IR are provided with the right information, and at the right time, to make informed, data-driven decisions. Applying actionable intelligence and insights with regard to customer and risk across the solution architecture will provide the organisation with increased surety through robust modelling techniques, reducing uncertainty associated with Strategic, Operational and Tactical decision-making. The future state architecture characteristics will include the following elements.

- **Intelligence Led service design, not just delivery.** The IL architecture will embed into the Core Tax and Social Policy (CTS) and Customer Experience (CX) architectures from design right through to delivery, to influence all aspects of the customer experience.

- **Data-driven insight into behaviours.** The IL architecture will expose and incorporate reliable, high-accurate insights into service design and delivery across the organisation as a whole, allowing decisions to be influenced by a rich insight into historic, current and even predicted future behaviours.

- **Right-time data supporting right-time decisions.** The IL architecture will provide insights that reflect the most current state of data available to the organisation, allowing decisions to be made as part of straight-through processing with confidence and accuracy.

What is the benefit[5]?

Highly-accurate data-driven insights will rapidly be unearthed and made available at-speed to drive and support all aspects of IR's decision-making. Objectives of these insights will be collaboratively agreed upfront and iteratively evaluated between business, systems and data experts to target the generation of actionable, useful results and foster greater confidence in the results. Results will be sourced as part of the service design process, allowing interactions to be proactively designed for positive outcomes. IR will gain a deeper understanding of current, predicted and simulated customer behaviours, compliance patterns, channel usage and community perceptions. Specific benefits are listed below.

- **Improved customer experience** by differentiating based on greater understanding of customer circumstances.

- **Improve compliance rate** by nurturing relationships with customers to facilitate compliance at each and every interaction.

- **Improved accuracy of assessments** by preventing errors at source with improved validation through the use of self-managed digital services.

- **Increase efficiency of IR operations** by reducing customer contact and transactions, increasing automation and improving the workflow of manual tasks.

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[5] The bolded bulleted benefits have been sourced from the Transformation Briefing Pack.

The following examples are intended to show possible applications of this IL architecture feature and should be considered for illustrative purposes only and should be read in conjunction with the detailed customer scenarios and personas which provide a full view of the customer experience.

Supporting Right-Time Decisions using Right-Time Data Driven Insight into Behaviours: An Example:

As Phil is about to depart overseas permanently and has questions, he decides to contact IR through the automated click-to-chat tool. The IR staff member is able to support him as the most relevant up to date information regarding his taxation status and student loan liability is displayed on the IR staff's screen. This provides a complete understanding of Phil's circumstances and IR will be able to assist Phil in one interaction.

Moreover, knowing that Phil is moving overseas, the system is able to derive insight from similar customers who moved overseas. Phil's risk profile is re-calculated and based on this, Phil is pushed relevant education materials to ensure he knows his tax responsibilities while overseas.

On the subsequent tax submission, when Phil is trying to enrol for an additional child support entitlement that he is not eligible for, the system will derive insight based on his latest life events and will not proceed to the next step until he has corrected the error. This process allows IR to prevent fraud from occurring in the first place.

Influencing Intelligence Led Service Design, not just Delivery: An Example

Zack, the American entrepreneur's company has now been in business in New Zealand for the past 12 months. Up to now, he has used a variety of IR's services, such as accounting software interfaces, PAYE and myIR to remain compliant. Business is booming and is on the verge of evolving from a small business, to a medium sized enterprise. IR is already aware of this, since they have a real-time view of the company revenue, profit, salaries and number of employees. Based on this information, Zack's Interaction Profile is updated in right-time and personalised tax products on offer are sent to his business email address. After logging onto myIR, Zack's landing page is updated with a listing of tax products and entitlements. Zack feels that IR is proactively helping him reduce his tax burden, so he gladly complies.

1.1.4 Providing IR with seamless data flows

How does the architecture support this?

The IL architecture will manage and govern the access, ingestion, usage and exchange of data across the business partner network as a corporate asset. This will enable greater use of insights and information across services and channels within IR, and help to provide information to external parties in a practical, useful way. The future state architecture characteristics will include the following elements.

- **Information managed as a corporate asset.** Data, information and intelligence as a whole, regardless of its original source, will be governed and designed for with rigour so that it is considered and incorporated appropriately as part of service design.

- **Governed, flexible exchange with business partners.** Data and information will be carefully yet flexibly made available for business partners, including government agencies, to enrich their own insights about IR customers and channels. Exchange services will support expansion to include new business partners as they join IR's network of partners.

- **Centralised, consolidated management of knowledge and information.** The IL architecture will support the centralised and managed availability of content, knowledge and information across IR, business partners and customers to help reduce redundant or conflicting information, and make the right information easily accessible.

- **Contextualised knowledge and information.** Metadata and contextual information about content and documents will be applied and stored. This will help customers, IR staff and business partners search for and locate relevant information at the most helpful time.

What is the benefit[6]?

IR will manage and govern both its own data and that sourced externally as a corporate asset, allowing exchanges with business partners to occur in a controlled, high-quality manner. This includes controlled and governed access to federated data sources recognising that it may not be necessary and relevant or practical for IR to store customer information held by business partners or third parties.

IR staff and business partners will have greater awareness of the importance of data quality and their role as stewards and custodians in maintaining data quality. Specific benefits are listed below.

- **Increase efficiency of IR operations** by reducing the amount of time and effort that customers, IR staff and business partners take searching for information.

- **Improved customer experience** by better understanding the context of information before exposing it to customers.

- **Improved accuracy of assessments** through reduced duplication and clearer versions of the truth.

The following examples are intended to show possible applications of this IL architecture feature and should be considered for illustrative purposes only and should be read in

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[6] The bolded bulleted benefits have been sourced from the Transformation Briefing Pack.

conjunction with the detailed customer scenarios and personas which provide a full view of the customer experience.

Consolidating Insights through Well-Structured Hierarchies: An Example

John Smith, a self-employed rural contractor, has recently moved properties and as part of the financing of his property has changed banking providers. Upon realising that he has not supplied his new address and bank account to IR wants to update his details. However, due to the move John does not yet have a reliable internet connection rather than use myIR as he normally would, he calls IR and updates the address. John as a regular internet channel user hasn't enrolled with a voice biometric so John is routed by the IVR to a customer service representative who confirms with John points of identity.
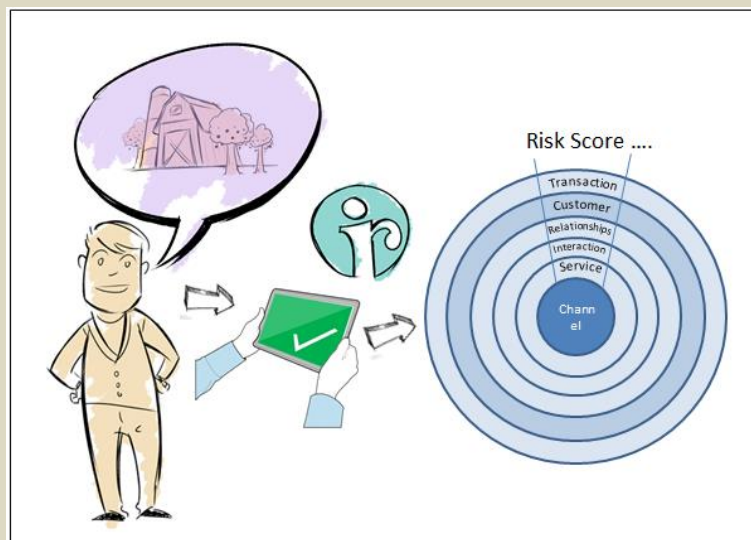
When the system processes this information, it automatically updates the address and bank account details and at the same time processes the information to analyse the change of details, the risk of this interaction, the nature of the transaction and John's normal channel preference and behaviour to re-calculate John's risk profile which has been increased.

Due to incurring moving expenses a subsequent GST return filed on paper a few days later includes a refund. The refund transaction while being for a reasonably low value is at odds with John's normal GST returns in which John has GST to pay. The GST transaction risk results in a high risk score due to the departure from his normal pattern of interaction, the proximity to the change of address and bank account details and John's currently elevated risk score.

Understanding the Context of Information: An Example

Maxwell, an investigator in Rotorua is investigating an organisation, Jake's Adventure Tours under suspicion of under reporting of employees PAYE.

A case has been created to support the investigation and Maxwell is gathering information as background to his investigation prior to a scheduled visit to the organisation's premises. As Maxwell reviews the information he uncovers intelligence regarding additional contact details including personal email addresses used by the proprietor Jake. Within the case management tool Maxwell collects and attributes these contact details to Jake where they become available for risk analysis but do not show up as part of Jake's public record.

Prior to visiting Jake, Maxwell is alerted of a suspicious GST refund for a recently registered company that has been held for further analysis due to its risk score. The risk score, already high due to the nature of the refund including the relative newness of the organisation, was deemed as higher risk through network association to the company under investigation via the email address identified in the investigation by Maxwell.

When Maxwell reviews the case, visualisation of the entities involved shows him graphically the linkages between the two organisations, his case and the transactions under assessment. An updated risk perspective is shown via the icon colours and associated attributed in the visualisation. An unconfirmed relationship between the two organisations has been created that upon further investigation Maxwell may confirm.

1.1.5 Continuously learning from insights, decisions and feedback

How does the architecture support this?

The IL architecture will use insights and feedback loops to provide an understanding of the effect of designs, decisions and actions taken by the organisation. This will allow IR to advance to a self-learning and highly adaptable organisation that has the foresight to swiftly respond to environmental, policy, social and customer changes. The future state architecture characteristics will include the following elements.

- **Adaptive service design**. The IL architecture will actively and continually champion the concept of behavioural change across the organisation. This will mean that new insights will be made available over time to assess and, if necessary, refine service design over time in response to natural and influenced changes in behaviours.

- **Self-learning feedback loops.** The IL architecture will use closed-loop feedback loops to support the on-going management of analytical techniques to refine, replace or retire insights as behaviours and objectives change.

- **Use of sophisticated techniques to unearth learnings**. The IL architecture will support highly-specialist staff in the application of advanced techniques in the Analytics Laboratory to uncover complex and highly-accurate relationships between the decision taken and the ultimate results.

- **Generation of Actionable Intelligence**. The IL architecture will leverage the collective organisational data and information, analytics, insights and human intelligence gathered by IR staff and Business Partners to provide actionable intelligence that supports strategic and operational decision making.

- **Whole-of-customer impacts to IR and New Zealand**. Approaches to learning will consider results from a wide range of perspectives in order to evaluate both localised and more wide-reaching results.

What is the benefit[7]?

IR understands the dynamics of its environment and customers. In reflection of the Compliance Model, the IL architecture will recognise intelligence to be inclusive of insights related to customer behaviour and our ability to influence their motivations, capabilities to comply and opportunities to comply.

IR staff and business partners will actively participate in the collection of human intelligence as a means to gather broader, richer customer insights and develop knowledge. The systematic analysis and application of the insights and knowledge will create a virtuous loop that reinforces and rewards the participation of staff and business partners in this process.

IR will self-learn and constantly adapt to the effect these designs, decisions and interventions have on customers, communities, policies and experiences. Specific benefits are listed below.

- **Increased accuracy of assessments** based on extracted insights that are refined in response to the changes in behaviours that customers display.

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[7] The bolded bulleted benefits have been sourced from the Transformation Briefing Pack.

- **Improve compliance rate** by improved ability to predict likely outcomes before they occur, taking into account the impact that previous decisions have had in other instances.

- **Improved customer experience** by increased opportunities to proactively influence behaviours and nurture customer relationships for positive outcomes by better understanding how current interactions are likely to impact future ones.

The following examples are intended to show possible applications of this IL architecture feature and should be considered for illustrative purposes only and should be read in conjunction with the detailed customer scenarios and personas which provide a full view of the customer experience.

Learning Continuously from Insights, Decisions and Feedback: An example

Recent analysis across existing IR data sources has identified a number of customers who were no longer receiving PAYE income. The acquisition of a new business partner data source into the Analytics Laboratory (Lab) allows IR to deduce that some of these customers, previously segmented as personal and family may actually be starting new businesses and can be segmented with a composite profile that recognises the customer has multiple reasons to interact with IR and more complex needs.

A cross agency initiative with MBIE who have an existing strategic initiative focusing on supporting new and emerging businesses is created to determine needs and services for this emerging customer group and test the accuracy of IR's deductions. The outcomes from the cross agency interactions are captured and fed back into IR's Lab both as a natural data exchange between the Agencies and as structured feedback by staff involved in the initiative. Analysts in the Lab then add the feedback data into the analysis, new insights are gained and models are enhanced or created that improve IR's ability to repeat the processes tested by the pilot on an on-going basis. The process once tested is implemented as business as usual with the feedback loops formally embedded.

Customers are now treated based on their whole relationship with IR as determined by their new composite segments and the segmentation and interaction profiles continue to be updated (utilising the new insights and feedback) to inform on-going and continuous improvement on how IR and MBIE can identify and interact proactively with these customers.

1.1.6 Supporting the Business Solution Architectures

The previous sub-sections of this document detail the foundational transformations that the future state IL architecture will deliver to transform IR's current state. Rather than deliver direct value to IR in and of themselves these transformational features will be fundamentally designed to support and enable the outcomes of key business solution architectures, namely:

- Core Tax and Social Policy (CTS) business solution architecture
- Customer Experience (CX) business solution architecture
- Enterprise Support Services (ESS) business solution architecture.

To help contextualise this important outcome, the following three sub-sections will discuss how the foundational transformations of the future state IL architecture directly support the characteristics of the three above business solution architectures.

1.1.6.1 Supporting the Core Tax and Social Policy (CTS) Business Solution Architecture

The following table will provide a high-level overview of how the IL architecture will support the key characteristics of the CTS architecture[8]. Please refer to the deliverable D007-HD Business Solution Blueprint for Core Tax and Social Policy for more details on the CTS architecture.

	The IL architecture will provide crucial support for IR's move towards self-management by improving the ability to understand, identify, validate and respond to the diverse needs of an individual customer. More specifically, analytical insights extracted within the Analytics Laboratory will:
Taking a service-centric approach	- Extend and complement calculation and validation rules for embedding within the CTS architecture, to support reliable, right-time responses and reduce post-transaction corrections. - Unearth insights into customer service needs and usage behaviours and make these available during both service design and delivery to help specifically customise services and channels. - Support the high-quality consolidation of data across disparate sources to deliver a customer-centric view of relevant, contextual data within the CTS architecture.

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[8] The Analytics Factory, as described in Appendix E of this document, represents the conceptual part of the business solution architecture in which insights emerging from the Analytics Laboratory will embed and execute. For clarity, the CTS architecture is specifically referenced here as the part of the Analytics Factory supported by the IL architecture.

Being highly-automated and event-driven	The IL architecture will play a key role in the reduction in reliance on customer-initiated requests and the volume of manual IR interactions by better pre-empting customer changes and responding automatically. More specifically, analytical insights extracted within the Analytics Laboratory will: • Be embedded within the CTS architecture to influence the automatic detection of customer events and upcoming changes in their circumstance and ultimately trigger the relevant services on their behalf. • Be embedded within intervention management processes to inform the design and delivery of automatic intervention and the outcome-driven routing of workflow. • Learn from the actual results of automated and manual interventions, along with IR-initiated events, to adapt to changes in behaviours. Further to this, information and knowledge management processes will embed within key CTS processes to make contextual, relevant information seamlessly available to IR staff at the right-time.
Adopting an agile, responsive design structure	The IL architecture will support the CTS architecture's use of consistent, repeatable design structures by delivering reusable, modular results. More specifically, analytical insights extracted within the Analytics Laboratory will: • Expose and inject reliable, right-time, insights into the CTS service design framework allowing design decisions, including IR interventions, to be influenced by a rich insight into historic, current and even predicted behaviours.
Enabling a wider, coordinated ecosystem of service delivery	The IL architecture will support delivery of key services through its business partner network by improving the certainty of service results and enabling the necessary cross-organisation data governance processes. More specifically, analytical insights extracted within the Analytics Laboratory will: • Embed consistently into services to improve the accuracy and transparency of responses delivered to customers by service partners, on behalf of IR. • Provide deeper understanding into how customers want to interact with IR to guide the identification and development of new and alternative business partners. • Learn from results and behaviour differences across the ecosystem of service delivery, to support continuous delivery improvement.

Table 1. Enabling Intelligence within the CTS architecture

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Business Transformation

1.1.6.2 Supporting the Customer Experience (CX) Business Solution Architecture

The following table will provide a high-level overview of how the IL architecture will support the key characteristics of the CX architecture[9]. Please refer to the deliverable D008-HD Business Solution Blueprint for Customer Experience for more details on the CX architecture.

Providing greater access, availability and pervasiveness of self-management	The IL architecture will provide crucial support for IR's delivery of self-management options by improving the ability to understand, validate and direct customers across the Omni-channel experience. More specifically, analytical insights extracted within the Analytics Laboratory will: • Embed insights into customer-centric behaviours within the CX architecture to guide the design and delivery of outcome-specific, self-management services. • Inform design of channel-specific services and customer interactions to support an increased uptake in self-management options. • Provide the CX architecture with accurate, right-time insights into customer understanding at each self-management interaction point, allowing for a more relevant customer experience. • Learn from the actual results of self-management options, to adapt to changes in customer experience and overall compliance.
Tailoring and personalising services and channels	The IL architecture will supply actionable insights into customers, services and channels to support an experience that is specifically tailored to suit their needs. More specifically, analytical insights extracted within the Analytics Laboratory will: • Provide the CX architecture with insightful, granular ways to group customers according to similar service needs, based on a deep insight into such traits as behaviours, compliance risk, norms and interaction patterns; which can be applied to tailor and personalise services based on customer needs and desired outcomes. • Provide the CX architecture with insights into channel usage patterns and a deeper understanding how behavioural shifts and patterns should guide the Omni-channel experience. • Learn from the actual results of tailored interactions, to adapt to changes in behaviours, preferences and diversification.

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[9] The Analytics Factory, as described in Appendix E of this document, represents the conceptual part of the business solution architecture in which insights emerging from the Analytics Laboratory will embed and execute. For clarity, the CX architecture is specifically referenced here as the part of the Analytics Factory supported by the IL architecture.

Embedding a customer centric emphasis in design and delivery	The IL architecture will provide insight into the voice of the customer and an understanding of their needs to support a customer-centric approach to designing and refining channels and interactions. More specifically, analytical insights extracted within the Analytics Laboratory will: • Inject deep understanding (such as motivations, circumstances and underlying root causes) behind the behaviours that IR will try to influence, into the communication design process. This will help the CX architecture target messaging in direct support of intended outcomes and aid with measurement of results. • Support the design and delivery of proactive identification and response to life events, according to the most likely customer preferences and according to their diverse needs. • Influence design of future state customer services and channels, allowing for a data-driven approach to continuous, responsive improvement of services based on actual results and insights from co-design initiatives.
Enabling greater outreach, communication and collaboration	The IL architecture will support the move towards a greater use of targeted and effective communication for the purposes of educating, influencing and informing customers. More specifically, analytical insights extracted within the Analytics Laboratory will: • Support insight-driven customisation of appropriate messaging to suit IR's overall objectives. • Provide insight into the most effective, convenient delivery mechanism for communication and campaigns, including a rich adaption to device preferences and usage patterns. • Learn from the actual results of targeted messages and campaigns, to adapt to changes in behaviours, preferences and compliance patterns.
Extending the digital border and use of business partners	The IL architecture will support an Intelligence Led approach towards managing interactions through and with business partners, helping IR to reduce the burden and cost of compliance for its customers whilst increasing the convenience of service delivery. More specifically, analytical insights extracted within the Analytics Laboratory will: • Provide customer and channel specific insights to guide potential opportunities for improving service delivery and design innovation with business partners and intermediaries. These data-driven insights into likely customer behaviours, preferences, motivations and responses to change.

Table 2. Enabling Intelligence within the CX architecture

1.1.6.3 Supporting the Enterprise Support Services (ESS) Business Solution Architecture

As the Enterprise Support Services (ESS) Business Solution Blueprint is currently under development and running to a slightly later timeframe than this document, a high-level overview of how the IL architecture will support the key characteristics of the ESS architecture is not provided in this version of this document.

A key design decision (KDD #200) seeking endorsement of the breadth of ESS capabilities that would be candidates for becoming Intelligence Led has been reviewed and confirmed by the DIF and endorsed by the ESS BOF but has not been approved by the Business Process Design Council (BPDC). The BPDC has requested the ESS BOF reconsider the KDD, a process that is underway.

1.1.7 Overview of the Impact on IR's Customers, Business Partners and Staff

Shifting from the current state to the future state will have impacts on IR's customers, business partners and IR staff. An early view and summary of impacts from the Intelligence Led Business Process Architecture include the following.

Customers / Business Partners

- Increased use and dependence on business partners (for example accounting and payroll software developers) will mean they will need to ensure that their business rules and software versions for customers are up to date and to be able to adapt rapidly to changing needs.

- Shape and number of business partners will increase and their relationship with IR will change (technology, contractual - including IR business partner management, collaboration in continuous improvement and co-design focus).   Business partner information providers (for example banks and government agencies) will want assurance that their data is supported by frameworks, standards and secure systems and processes.

- Customer experience improves as IR understands customer circumstances and tailors more relevant and targeted customer interactions.

- Less functional customer contact required as IR will identify and automate customer interactions such as enrolments and registrations.

- Customers may still be required to validate information gathered from business partners but this will be offset by reduced data entry, improved transparency and greater certainty.

IR Staff

- More capacity and capability required to establish strong data governance standards, validation, infrastructure and re-useable frameworks.

- Shift in capability to establish, manage and maintain complex relationships with data providers and agencies.

- Less manual extraction and checking of data as a result of new technologies and real time validation.

- Highly specialised analytical skills and experience will be required to build frameworks and models using sophisticated techniques and tools with customer information and data sets.

- New ways of working will require a wider cross-section of staff to have the capabilities to rapidly adopt, access and use analytical tools, technologies, data and models. These tools will enable staff to assess customer information, insights and customer compliance behaviour to determine the next customer interaction.

Further information on impacts is documented within business processes in Section 4 of this document and a consolidated view can be found in Appendix C. A comprehensive organisational impact assessment (customers and IR staff) deliverable will be completed in October 2015 by the Organisational Change Management team, following the COTS decision and finalisation of the *Programme Delivery Plan for Stages 1 to 4*.

This document contains five key sections. The following diagram provides an outline of how to navigate the Intelligence Led Blueprint and find additional detail in areas of specific interest.

Areas of Interest	Where to find the detailed content
What are the Intelligence Led Future State Architectural Characteristics that will help enable IR to realise the BT transformation goals.	**Realising Transformation Goals** Section 3.1
What impacts will the future state data and information analysis and exchange, along with information and knowledge management activities have on IR's volume capacity.	**Performance and Volume Requirements** Section 3.2
What are Business Processes from the Target Operating Model that will be required to support the future state Intelligence Led architecture, covering: • *Future Characteristics* • *Pain Points* • *Architectural shifts* • *Value Drivers.* • *Enabling Solutions*	**Business Process Architecture** Section 4.1
What data will the future state Intelligence Led Business Processes utilise, illustrated through the new Conceptual Data Model framework.	**Conceptual Data Model Inputs and Outputs** Section 4.3
What application and solutions will support the future state Intelligence Led architecture, illustrated by a mapping between the Application Component Reference Model and the future state Business Processes.	**Mapping to the Application Component Reference Model** Section 4.4

Figure 2. Executive Summary Reading Guide