IT ZBR

Summary Report

PFC2019-0041 Attachment 2

ISC: UNRESTRICTED

January 22, 2019

Prepared by: Corporate Initiatives, Chief Financial Officer's Department

IT Zero-Based Review – Benefits at a Glance

Total Financial Benefits

$1.3 Million
Cash Savings

$4.4 Million
Productivity Gains

Per Year upon Full Implementation

Balanced Service Outcomes

Citizen expectations are met by balancing internal customer needs and the corporate good

Informed Software Decisions

The practices used to manage software decisions are standardized, transparent and collaborative – we work better, together

Smarter Portfolio

The City's portfolio of software is cost optimized and technology risk – a principal corporate risk – is reduced

Getting the most out of Hardware

Hardware devices are provided to the right level – no more, no less – to maximize productivity for the dollars invested

These benefits will be achieved by:	
1. Improving Customer Understanding	5. Tracking Total Cost of Application Ownership
2. Clarifying the Mandate	6. Agreeing on Levels of Service
3. Reviewing Application Portfolio Management Practices	7. Providing the Right Hardware Devices to staff
4. Rationalizing the Existing Application Portfolio	

IT Service by the Numbers

Products and Services

281 citizen-facing transactions available by web or mobile app
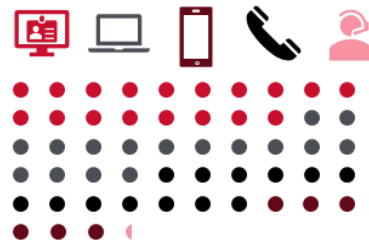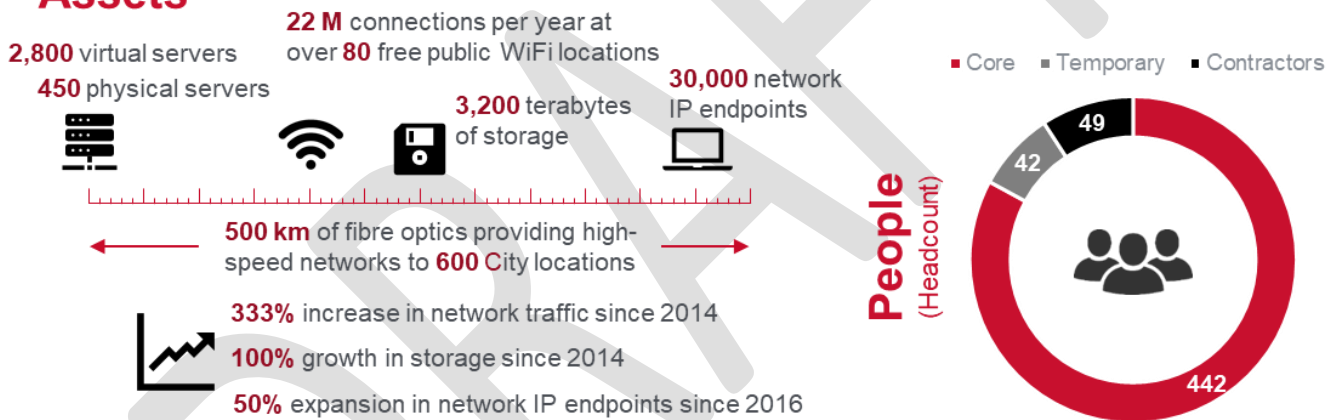
375,000 myID citizen accounts & 7,000 myID business accounts

660 line-of-business and enterprise applications supported

100 cloud computing implementations (Q4 2018)

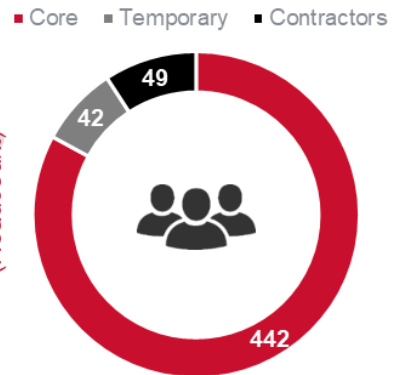86 technology projects executed per year between 2015-2018 (average)

18,000 staff network accounts (including Active Directory and myHRconnect)

16,000 staff computing devices (desktops, laptops, and tablets)

13,000 telephone and VoIP lines

6,100 smartphones

30 call centres (including 9-1-1 and 3-1-1)
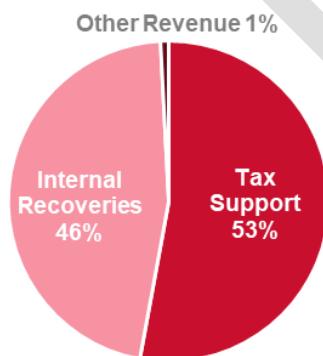
Assets

2,800 virtual servers

450 physical servers

22 M connections per year at over **80** free public WiFi locations

3,200 terabytes of storage

30,000 network IP endpoints

500 km of fibre optics providing high-speed networks to **600** City locations

333% increase in network traffic since 2014

100% growth in storage since 2014

50% expansion in network IP endpoints since 2016

People (Headcount)

- Core
- Temporary
- Contractors

49

42

442

Financial

2018 GROSS OPERATING EXPENDITURES $121 M

Other Revenue 1%

Internal Recoveries 46%

Tax Support 53%

WHAT THE SERVICE INCLUDES: OPERATIONAL SPENDING

Governance $0.9 M

Infrastructure & Platforms $30.5 M

Workforce Productivity $28.5 M

Business Systems & Consultation $62.7 M
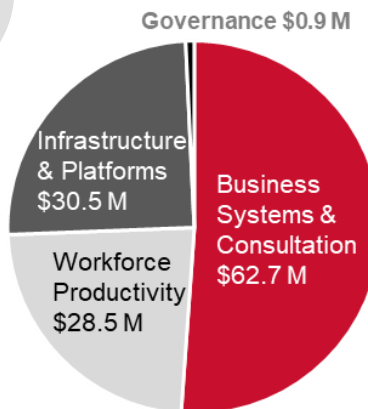
- **Business Systems & Consultation:** *Develops and maintains both corporate-wide and line of business applications*

- **Workforce Productivity:** *Network accounts and technology tools that enable individual staff to conduct daily business activities*

- **Infrastructure & Platforms:** *Technology infrastructure that underpins the delivery of all technology solutions for The City*

- **IT Governance:** *Overarching governance of corporate technology*

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IT ZBR – Balancing Customer Need with Corporate Good

Information Technology (IT) is an internal service. Like all internal services, IT is an organizational leader in striking the balance between serving the unique and varied needs of its customers with the overall good of the corporation.

This dual role creates a tension. As a customer service organization, IT is at its best when it is acting for its clients, creating solutions and accelerating their businesses. As a steward of the fundamental corporate good, IT is at its best when it sees the big picture, is actively prioritizing and is informing technology decisions with a corporate mindset.

Both roles are about doing the best thing for the citizen. This emphasizes why addressing this tension is:

1) Worthwhile – because IT is a core support function underlying citizen-facing services; and,
2) So difficult – because the corporate and customer service roles seek to achieve the same outcome in very different ways.

The first step in achieving clarity around these roles is defining IT's service mandate – all other adminstrative commitments cascade from this.

Currently, IT uses a "federated governance model" to make investment decisions. This combines department level accountability with a broader corporate governance body.

This model, combined with IT's customer service culture, has resulted in IT's role as a service provider – responsive to individual service and/or department needs – being prioritized over its role as a guardian of broader corporate interests and needs.

This focus has fallen out of step with a broader shift towards corporate financial restraint. IT, like all internal services, must therefore respond to

this culture shift by, itself, shifting how it provides services.

The customer-focused, operational work that IT does is critical to sustaining front-line service to citizens. If accompanied by a lack of clarity or completeness regarding the corporate element of IT's role, The City can be left vulnerable to:

- Increased Risk – Higher complexity in the software portfolio increases vulnerability and demands for support to limit system outages and security threats;
- Increased Cost – Higher potential for software duplication across user groups (also implying cost duplication) along with fewer opportunities to identify and realize corporate-wide IT investment efficiencies; and,
- Decreased Effectiveness – Misalignment between technology investment and corporate direction makes service outcomes more difficult to achieve and growing complexity makes task of realigning more challenging.

What follows in this report are the best seven opportunities found through the IT Zero-Based Review that will begin addressing this challenge of balance. They range from gaining a better understanding of IT's customers, to a direct recommendation on addressing mandate, to practical opportunities to reduce spend on productivity devices and software that have large corporate efficiency implications but limited (or reasonable) user impacts.

Opportunities found in this ZBR highlight a challenge common to all internal services and one that they will face together. As you will read, outcomes rely not only on implementation of these commitments in the IT service - they also rely on the mutual understanding and cooperation of every single one of the customers that IT works with in the corporation.

The Opportunities

Below are brief descriptions of each of the seven opportunities that were explored in this review and form the basis of administrations commitments for improvement. More detailed information on action and progress can be found in the next section.

1. Improving Customer Understanding

Improving customer understanding is a foundational precursor to every other opportunity. Being able to clearly understand and articulate customer demands is a core requirement of designing a business to meet those needs. It is also essential to understanding how those needs fit into a corporate context.

2. Clarifying the Mandate

A key effectiveness opportunity to clarify and communicate mandate and authority over decisions and strategic corporate direction related to IT's business. This is a shared challenge of the Internal Services and will be progressed as part of that corporate-wide ZBR.

3. Reviewing Application Portfolio Management (APM) Practices

This opportunity is about a key place area where the "rubber hits the road" in actioning IT's mandate – how software assets are acquired and managed for individual services and across them, corporately. The APM Practices opportunity began the process to define and develop the management information, processes and decision-making criteria needed to manage The City's application portfolio and understand how to control application support costs.

4. Rationalizing the Existing Application Portfolio

An efficiency opportunity to identify any duplicate and redundant line of business systems.

5. Tracking Total Cost of Application Ownership

An opportunity to enhance the financial component of decision making related to all stages of an application's life – from purchase through to decommissioning – to better anticipate costs and align funding.

6. Agreeing on Levels of Service

Translating customer understanding and mandate to engage customers to determine and agree on the optimal service levels for The City's line of business systems that support City services.

7. Providing the Right Hardware Devices to Staff

An efficiency opportunity to optimize the use of personal productivity devices (PC's, laptops, smartphones, etc.) throughout the corporation, ensuring that each user has the right device(s) – no more and no less – to do their job.

How the Opportunities Contribute to Balancing the IT Service

Making Strategic Decisions

Opportunity 1: Improving Customer understanding

Opportunity 2: Clarifying the Mandate

Customer understanding underpins a clear and strong role and purpose for any service. These elements form the foundation for continuous improvement and business strategy.

The information technology industry tends to be heavily weighted to service provision, but recent shifts have seen a demand from both customers and corporate leadership to increase the strategic value and governance role of IT departments. IT's annual client survey has identified that 45 per cent of management clients are looking for IT to be a provider of strategic competitive advantage. This partnership would see IT enhance its role in the corporation to provide strategic advice, proactive recommendations on products and services and increased participation in technology decisions and investments. Delivering this type of value requires a strong and in-depth understanding of customers and their businesses.

Work completed to date builds on IT's existing – and extensive – knowledge of customer needs. This existing level of competency is evidenced by consistently high customer satisfaction scores. According to IT's Client Satisfaction survey in 2016, prior to project initiation, satisfaction for 'Existing Business Software Support' was 87 per cent. The ZBR opportunity to improve customer understanding – now completed – targeted the lowest scoring group of respondents contributing to that result - supervisors responsible for managing a business system as a core function. ZBR work was focused on the technology investment process, identified as a key frustration for this group. In-depth discussions with customers identified pain points and several areas for improvements. IT is already moving forward with updates to processes to take advantage of this information and, in 2017, satisfaction scores trended positively to 93%.

A solid foundation of customer understanding is only half of the equation for achieving balance between the service provider and governance roles of the IT service. The other essential piece is an understanding of the governance expectations as defined by the corporation in the service's mandate.

Achieving a balance between individual customer needs and overall corporate value is a key challenge for all internal services. Because of IT's strong customer understanding and service culture, their service provider role and purpose is clearer than their corporate role and purpose. Overall, IT's strongest corporate role is currently indirect and is enacted through the support of individual customers as they seek to achieve their own citizen and corporate outcomes. As identified in the ZBR, there remains an opportunity to drive wider efficiency and effectiveness gains across the corporation.

A review of role and mandate will shed light on the extent of this opportunity and how it can be better balanced with service provision.

Additionally, the IT ZBR was a key part of the realization that this opportunity is common across all internal services. As the IT ZBR progresses through to implementation and planning next steps, it will serve as a leading example for (and become part of) the Internal Services Role opportunity within the Shared Challenges of the Internal Services ZBR.

Where the Rubber Hits the Road: Application Portfolio Management

Opportunity 3: Reviewing Application Portfolio Management Practices

Opportunity 4: Rationalizing the Existing Application Portfolio

Opportunity 5: Tracking Total Cost of Application Ownership

Application Portfolio Management (APM) is an IT discipline that links the organization's suite of software business tools (applications) to business strategy. In this way, APM is an important conduit through which IT actively plays out the balancing act between meeting customer needs and serving the corporation.

An example of IT's role in achieving balance through APM
An IT customer has defined a specific software need. IT brings expertise to bear in the form of advice and governance - does the business need the "Cadillac" of tools? Are there more cost-efficient options available? What are the functionality sacrifices for this cost efficiency? Can the customer bear these? Can they be mitigated? Do other tools exist in the corporation that could be used instead? In this way, IT balances a 'customer service' focus with a 'corporate good' mind set.

In 2018, IT invested \$14.7[1] million into the support of 660 applications that enable the operations of every other service in The City. Rising support costs are driving the need to better understand and manage the portfolio of applications. The IT ZBR brought to light the need to evolve The City's APM approach in response. The first step in achieving this was the completion of a comprehensive application inventory which was done in concert with Beniva Consulting Group (Beniva) in Q4 2018. This work helped identify the actions that will most effectively control costs and create a more sustainable application environment in The City.

Improving The City's Application Portfolio Management Practice

As the IT ZBR progressed it became evident that APM is not primarily an IT problem. Whether APM is performed successfully or not will impact the whole organization's ability to operate as effectively and efficiently as possible. As such, implementing a more robust APM practice is an enterprise-wide endeavor requiring a greater emphasis on IT's role and responsibility to take actions based on the corporate good rather than emphasizing individual business unit requirements.

Importantly, the greatest value from strong APM practices does not come from rationalizing the current portfolio. While vital to the ongoing sustainability of the application portfolio, rationalization is hard – it requires significant organizational effort and resources. The greatest value from an effective APM practice is avoiding the need to rationalize applications in the first place. It's about having the information, cooperation and clarity of governance early in the application acquisition process so that duplication doesn't occur.

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[1] *This number doesn't include support costs that are borne solely by other services and so the total investment of the corporation will likely be higher.*

As part of their consulting support to the ZBR, Beniva completed a report that identified enhancements The City could make to improve its APM practice. Three foundational principles that underlie all improvements were identified, these are:

> **_A. An organization's IT applications must be treated as assets._**
>
> **_B. An organization needs to engage in a coordinated use of their application assets,_** _(with regard for broader organizational efficiency)._
>
> **_C. IT needs to be able to provide the required insights to enable coordinated enterprise decision making._**

All three of these principles are used as part of The City's current APM practices. However, Beniva has recommended additional actions that would further advance The City's APM practice related to principles B and C. Administration is reviewing these recommendations as part of the development of an implementation plan. As part of this ZBR, the work of implementing better APM practices has already begun, as is discussed in the following section.

Creating A Smarter Portfolio

The removal – or rationalization – of duplicate applications is expected to be a significant outcome of advancing APM practices. The completion of a comprehensive application inventory helped to provide IT with the initial insight on where this duplication might reside. This is the first step in rationalizing the portfolio.

__What does "Rationalizing the Portfolio" mean?__
Rationalization is the reduction of functional duplication (e.g. going from two applications that do the same thing to one). For example, two City services could interact with citizens in very different ways and rely similar technology. They might not know about the opportunity to consolidate their systems. APM, enabled by the application inventory, allows IT to identify this opportunity.

__Why does it matter?__
Benefits to customers and the corporation alike can be significant. Reducing cost is the most obvious. Risk is also reduced as security threats decrease along with the number of applications in use, as does the complexity of support required by IT.

Completing the application inventory as part of this ZBR has led to some early successes in identifying applications that can be rationalized relatively quickly. This activity highlighted $400,000 in annual support savings across 141 applications that could be decommissioned within two years – This savings is comprised of $80,000 in cash savings and $320,000 in productivity gains. IT will begin reporting on the progress of decommissioning these applications next year.

Next, the ZBR performed a more in-depth examination of four functions that were identified as having a high degree of system duplication. Beniva, with the support of IT, developed business cases on each of these to explore the potential of rationalizing some applications to achieve cost savings and other benefits. The result was an estimated $400,000 in annual cash savings with an additional $220,000 in annual productivity gains throughout the organization upon full implementation. This not only justifies further investigation and action in these four areas but also demonstrates the power of better APM practices when applied to The City's application portfolio. IT's next step regarding these business cases

is client management engagement to further inform the analysis done to date and begin building implementation plans.

It is possible that the portfolio of 660 IT-supported applications that were in scope for the APM practices ZBR opportunity does not entirely represent all applications in use across The City. While not believed to be a large issue, to maximize the potential benefits from a corporate perspective the APM practice will need to maintain complete insight into the IT systems being used, and have more influence over portfolio decisions than it does at present, as described in principle C. Administration is currently examining opportunities to improve how this is done.

Beniva's review of the IT-supported application portfolio highlighted some additional potential duplication across City functions. It should be noted that this is only a _potential_ duplication and that there is still significant work required to validate this potential before a true savings figure can be reported. In addition, potential savings achieved may be partially offset by one-time costs related to validating and decommissioning the duplicate applications. These potential savings, along with any further identified savings achieved through the implementation of better APM practices, will be reported on next year and through future ZBR update reports.

More Informed Application Decisions

Beniva also contributed to a commitment to improve IT's approach to software lifecycle costing. The result was a tool that provides a structured framework in which centralized costs can be input for every stage of an application's lifecycle – from acquisition to decommissioning. This tool provides something that IT customers haven't utilized before: a fully transparent and all-in financial picture for their application decisions.

Lifecycle costing will inform funding arrangements between IT and their customers. This will reduce surprises and create a more accurate long-term investment lens for customers and the entire corporate portfolio. The tool supports APM practices – clear financial implications make the case for rationalization and the corporate good more obvious.

Getting The "Right" Level of Service to The Customer

Opportunity 6: Agreeing on Levels of Service

Opportunity 7: Providing the Right Hardware Devices to Staff

**High-level: Getting the Right Level of Service to Customers**

For IT, having agreed levels of service with their customers represents the natural extension of the conversation to balance IT's service provider and governance roles. The City's IT service currently does not have explicitly agreed-upon service levels for a majority of the Corporation's lines of business systems. The lack of clearly defined expectations puts IT in a default position of providing whatever level of service the client requires, when they require it, and decouples discussions about service levels from discussions about the associated cost.

As more information and services shift to online channels, there is an implicit expectation that services should be available anytime, anywhere. There are costs associated with this level of service, and not all business systems carry equal strategic priority. The opportunity on agreeing to levels of service is about the dialogue between IT and the business system owners regarding which systems justifiably require enhanced services and which require service that could be defined as being 'good enough'. Underlying this dialogue is the need to balance citizen expectations and customer needs with the corporate good, and achieve an optimal level of service that satisfies all three. This will lead to better value by improving the alignment of system availability with business needs, improving customer and citizen satisfaction and improving staff morale, all through clear expectations and justification to say, "not now" when appropriate. In addition, this will lead to improved relationships between IT and customers, and the potential for identifying opportunities to improve the efficiency and effectiveness of other parts of the corporation through higher levels of service.

Practical Level: Getting the Right Devices in the Hands of Customers. Literally.

If developing agreed levels of service between IT and its customers is a component of balancing IT's service provider and governance roles, then the opportunity to maximize The City's use of hardware is a practical application of this balance. While the number of personal productivity devices (laptops, PCs, tablets, smartphones, etc.) used by City staff continues to grow, advances in technology, changing work styles and changes in software licensing requirements are providing an opportunity to optimize the deployment of devices. By taking a more strategic, governance-oriented position, IT can ensure that each employee's workstyle is considered and that they have the right tools to meet the demands of their roles – no more, and no less.

This practical application of the balance between service provider and governance roles began in 2018. Tangible benefits are expected by the end of 2019 through the consolidation of multiple personal computing devices (where possible), transitioning desktop users to Virtual Desktop, and consolidating the use of telecommunication solutions in consultation with customers. Annual benefits of $785,000 are expected in annual cost savings, and other productivity gains spread across the corporation of approximately $3.85 million upon full implementation.
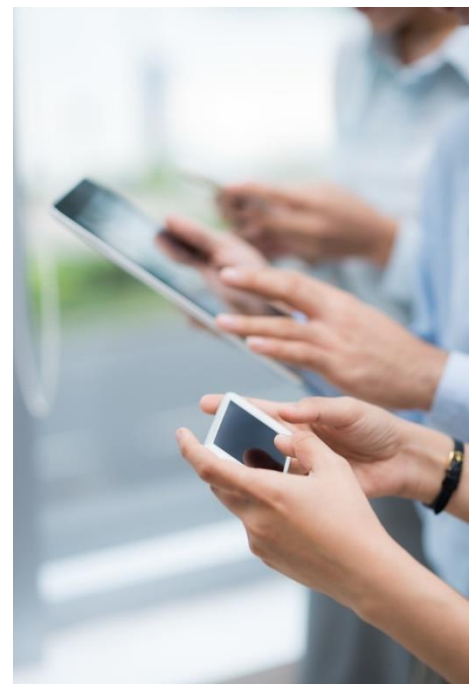
Conclusion

A key consideration of any Internal Service ZBR is the balance that internal services must maintain between delivering on the unique and diverse needs of their customer base and acting in the best interests of the corporation.

This challenge is increased during times of fiscal restraint, as a shifting corporate need must be interpreted by the internal services and applied across all their unique customer relationships. This implies the need to find a new balance between customer need and corporate good.
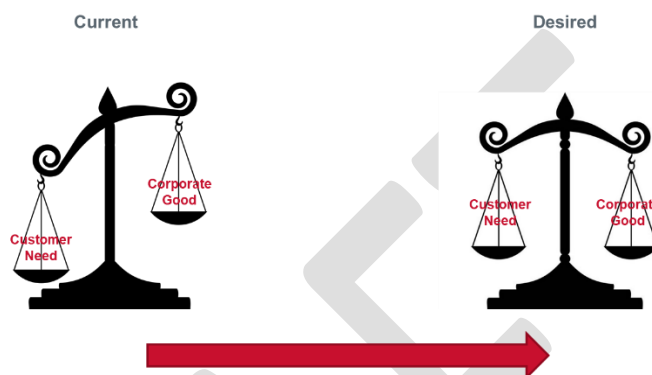
To be effective, this interplay between service and customer requires that an internal service mandate must be understood by both the internal service itself and its customers equally. Adjusting a mandate naturally implies adjustment to service – when done for the corporate good, this change requires cooperation from all parties involved.

Therefore, the higher-order, foundational commitments made by the IT ZBR are not recommended in isolation of the IT service – they require a corporate approach, cooperation and collaboration. The successful implementation of the opportunities identified – large and then small - lies more so with the willingness and ability of the corporation to act as one, rather than it does on the ability of the ZBR program and IT to present good ideas.

To begin progress on cross-corporate opportunities, the Administrative Leadership Team (ALT) have approved that IT implement the Application Portfolio Management recommendations including business unit engagement and implementation planning for key areas of business capability duplication with the goal of realizing organizational cost savings and efficiencies.

The actions Administration will take in response to the findings of this ZBR are set out in the following pages. Going forward, the IT ZBR will continue to execute on in-flight commitments and build implementation plans around several others. Concurrent work on the Shared Challenges of the Internal Service ZBR will play a significant part in how these plans take shape. Most significant to both will be continued engagement with customers – technology underpins the work of every other internal and citizen-facing service in The City.

Administration's Commitments

1: Improving Customer Understanding	
Actions to date:	**Future Actions:**
- A customer journey map was completed for the technology investment process. o Included customer/partner engagement to determine process and pain points from their perspective - Four key intervention points were identified: Process clarity, proactive support, synchronization across partners and communications. - Project approval methodology has been redesigned to evaluate project costs and anticipated benefits.	- Redesign the process for technology project approvals to address the customer "pain points" identified on the journey maps
Benefits Realized / Anticipated:	
- Informs work on IT's role and mandate, improving outcome of that opportunity - Investment process streamlined for customers making it easier to understand, more transparent and improving the overall customer experience	

2: Clarifying the Mandate
- This challenge has been found to be common across all enabling services and will be further defined and addressed as part of the Shared Challenges of the Internal Services ZBR focused on role and purpose.

3: Reviewing Application Portfolio Management (APM) Practices	
Actions to date:	**Future Actions:**

- Beniva Consulting Group delivered:
   o A detailed application Inventory
   o A business capability model
   o An application portfolio assessment
   o An APM process recommendations report
	- Enhance APM practice recommendations and develop an implementation plan
	- Validate and complete the application inventory
	- Embed use of the inventory in APM practices and customer interactions

Benefits Realized / Anticipated:	
- Accurate and comprehensive application set better informs decision making and helping IT and customers focus on the right things - Increased ability to justify acting in the interests of the corporation - Reduced costs. These savings are difficult to quantify, however, better decision making will help focus future investment and likely lead to the avoidance of future duplication (and related costs) - Simplified portfolio and all related support - Reduced risk – A simplified portfolio is easier to support which reduces the likelihood/potential for system outages and security threats	

4: Rationalizing the Existing Application Portfolio

Actions to date:	Future Actions:

- Beniva Consulting Group Delivered:
  o Four business cases on the top functional areas for duplication rationalization
  o A listing of quick win opportunities
  o An application risk assessment
  o Application portfolio recommendations
	- Act on quick win opportunities found
	- Validate business cases with customers / users
	- Implement the validated opportunities.
	- Continue the rationalization process, exploring the additional duplications identified by Beniva to identify and validate additional opportunities.

Benefits Realized / Anticipated:

- Quick win application rationalization resulting in $80,000 in cash savings and $320,000 in productivity gains upon full implementation (expected within two years)
- Business cases for detailed rationalization amounting to $400,0000 in cash savings and $220,000 in productivity gains upon full implementation

5: Tracking Total Cost of Application Ownership

Actions to date:	Future Actions:

- Beniva delivered a total cost of ownership model which enables IT to:
  o Consider the myriad of financial inputs related to applications
  o Inform customers of the full ramifications of any application decision (new or existing)
  o Inform decisions related to future funding arrangements
	- Validate all fields for internal use
	- Integrate the use of the model into informing client new decisions and funding arrangements
	- Using the model to review existing application support funding agreements and advising clients on which agreements need to change

Benefits Realized / Anticipated:

- Transparent and central hub for all application financials helps customers make more informed decisions
- Equitable, fairly negotiated and clearly understood funding arrangements
- Reduced future funding surprises
- Clearer ability to compare options (scenario analysis)

6: Agreeing on Levels of Service

Actions to date:	Future Actions:
- Developed a framework of key factors, to support discussions - Engagement with services - Service level reports developed for every Business Unit	- Distribute service level reports to Business Unit leaders - Engage leaders to ensure common understanding of business systems and support provided by IT - Utilize costing model to determine the financial implications of adjusting service levels to meet evolving customers and citizen expectations

Benefits Realized / Anticipated:
- Better value through improved alignment of system availability to meet business needs across the corporation
- Increased customer and citizen satisfaction
- Improved staff morale from a clear understanding of expectations and a clear basis for work prioritization
- Optimized costs

7: Providing the Right Hardware Devices to Staff

Actions to date:	Future Actions:
- Enhancing the device advisory service to assess workforce productivity and telephony devices needed by staff - Project manager assigned - Preliminary work with two Business Units to pilot methodology	- Review of all existing and new devices to limit redundancy and optimize their productive use

Benefits Realized / Anticipated:
- $785,000 in annual cost savings upon full implementation
- $3.85 million in annual productivity gains across the organization upon full implementation
- Support for flexible work and business continuity
- Reduced asset complexity
- Risk reduction

Appendix 1: Financial Gains Summary

	Commitment	Financial Benefits Upon Full Implementation	
		Cash Savings	Productivity Gains
1	Improving Customer Understanding	-	-
2	Clarifying the Mandate	-	-
3	Reviewing Application Portfolio Management Practices	-	-
4	Rationalizing the Existing Application Portfolio	$80,000 (Quick Wins) $400,000 (Business Cases)	$320,000 (Quick Wins) $220,000 (Business Cases)
5	Tracking Total Cost of Application Ownership	-	-
6	Agreeing on Levels of Service	-	-
7	Providing the Right Hardware Devices to Staff	$785,000	$3,850,000
	Total	**$1,265,000**	**$4,390,000**