Protegra™
Business. Technology. Solutions.

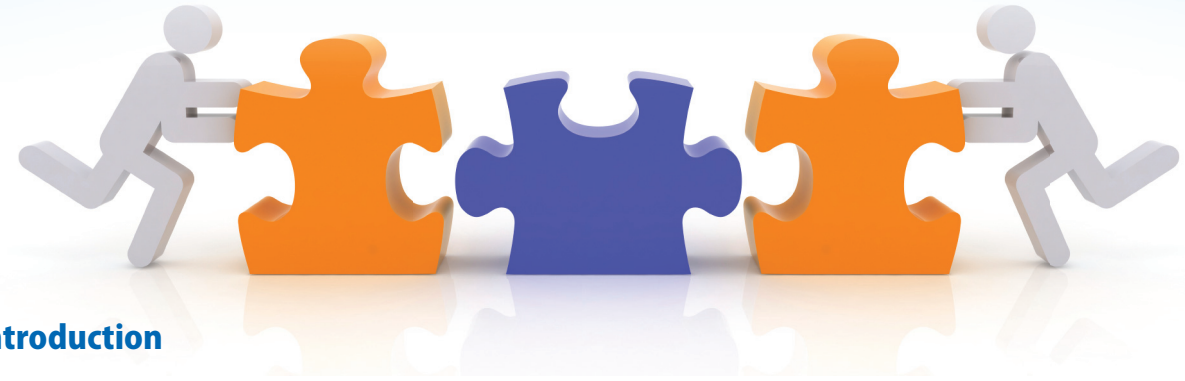
Value Generating IT Solutions: The Benefits of Custom Software

WHITE PAPER

Protegra™
Business. Technology. Solutions.

Value Generating IT Solutions: The Benefits of Custom Software

WHITE PAPER



Introduction

The impact of information technologies on business and the economy continues to revolutionize the way the business operates and direction it takes. In many ways, how, when and where the IT investment is made determines *the future of the company, the organization or in some cases, even the industry.*

Often it is an alignment of business innovations and new or advancing technologies.

There are companies where innovation is fundamental to their business or where technology is important to their revenue stream.

Other companies need technology to reduce the price point and increase service levels.

Ideas in Brief: Leadership and Innovation:

- Enabling Agile Business
- IT as an Investment Portfolio
- Business Driven Focus
- 100% Fit Solutions
- Operational Data Stores
- Architecture
- People & Team
- Process & Continuous Improvement
- Doing the Right Thing

There have been many fabulous success stories, as well as many failures. There have been false starts and also breakthroughs. Corporations are being redefined and recreated, while others are losing their significance. Completely new approaches are being fueled by advances in the technologies. New companies are rising over the horizon – the next leaders in the new economy.

What is it that makes the difference?

In this paper, we will profile two organizations in completely different industries that determined that they had to lead with business innovation and technologies.

Organization Number 1:

The Winnipeg Transit System (WTS) competes against the family car in transporting people to/from their places of work; shopping; meetings; appointments; sporting events and other entertainment.

The family car is perceived to be very comfortable, secure and perhaps most important: it is available, reliable and predictable.

That's tough competition for a public system. To compete against the family car, it must also be comfortable, secure, available, reliable and predictable. It also has to be affordable, even as the city sprawl grows and budgets remain the same.

Sure there are some people who for financial, age or disability reasons will always ride the bus. But, most transit riders have a choice and they are increasingly choosing the WTS.

Organization Number 2:

Global Portfolio Advisors and GPA Technologies together (GPA) form an organization that serves independent financial advisors, investment managers and security brokers in Europe and Asia.

GPA was the brain child of the founding executive of LPL Financial Services, the largest independent broker dealer in the USA. They had the vision to recreate their business model in Asia and Western Europe.

GPA Technologies chose to manage all aspects of IT development and support through the assignment of various IT portfolios for ownership by teams comprised of both employees and their trusted consultants from Protegra. They took on the challenge and succeeded in every aspect of their work. Their IT applications have been implemented in English, German, Japanese, Spanish and Portuguese.

GPA's competition is with any bank, brokerage, insurance company or investment firm that serves the independent advisor. They compete in the global market where real-time information, trading and other transactional services demand high levels of integrity, scalability and reliability.

What Do These Organizations Have In Common?

From public transportation to international broker dealer networks – both organizations share common principles and beliefs. First, they recognize that they are leaders in their industries and they must be innovative to succeed. And, the technologies and systems they invest in must be agile and aligned with the business. Both organizations recognize that to achieve their goals, they must leverage their IT portfolio and build on their success.

These two organizations have provided excellent annual returns and IT portfolio value growth for their respective businesses over an extended length of time.

Over the past 12 years, GPA has built a portfolio of strategic applications that has helped recruit to their network thousands of investment advisors throughout Germany and Japan. In every year, they have exceeded the service levels defined by the businesses, while keeping the annual maintenance cost well below the industry standard.

Back at the WTS, Bill Menzies, Manager of Service Development, speaks very highly of what the technology group at the WTS has been able to achieve: "There are more innovations in Winnipeg than in all other cities (across Canada), many with much larger budgets. The WTS had crossed hurdles years ago that other cities are still wrestling with."

Keith Martin, Manager of Operations, believes that "Winnipeg has the most sophisticated control centre in the country. We have 3 people who manage the control centre for the 1,150 drivers."

Catherine Caldwell, Manager of Handi-Transit, says that "Winnipeg has the best cost/ride in the country".

Here's how they did it.

1. IT as an Investment – Not a Cost:

Many organizations will have some applications or technology that defines them or their service. Distinguishing these from other systems and technologies is a very important first step in IT stewardship, especially in the area of realizing the benefits and driving up their stakeholders' value.

Tim Scatliff, retired General Manager of GPA Technologies and CIO of GPA, points out that these systems should be governed as investments that will grow in value, while producing high annual returns. They are corporate assets, not productivity tools or utilities. This is an important distinction in that these are corporate assets and reflect the corporate knowledge and wisdom that differentiates their organization from the competition. They are, by their very nature, critical to the success of the business, with all the risks and opportunities. These systems can be fundamental in allowing the business to realize the opportunities that drive the development of strategic systems and can be used to mitigate risks in the strategies themselves. Other applications and technologies may truly be utilities, but not these core strategic applications.

Bill Menzies highlights a key factor in their success has been the inclusion of IT management on the executive committee of the WTS. This keeps Herb Vossler, Manager of Information Systems, well informed and active in all areas of the business. His involvement in management strategies over the past 20+ years has been critical in the evolution of business processes to where they are today.

Similarly at GPA, the IT management participates from "day one" in the discovery, design, implementation and support of business expansion into each new country. Like its former parent company, LPL Financial Services, GPA differentiates itself from the competition with its technology and information systems.

Smart Buses

In 2009, WTS converted its entire fleet of 545 vehicles as smart buses. The project is a joint development venture with an external vendor. The onboard system uses automatic vehicle location (AVL) technology for determining the geographic location of a vehicle and relates this to its work assignment, which is updated daily before the bus leaves the garage. As it locates the first point, it can take over anticipating stops, providing real-time information and the current status to the drivers, passengers and centralized service desk. The bus will only report back to the centralized system when significant service exceptions arise. Onboard screens provide the current status and progress directly to the driver so they can act to maintain consistency with route, stops and times. They can predict where they should be as worked out by the plan and bus assignments. The WTS control centre staff can watch the city-wide maps as the buses traverse their routes. Exceptions flash on the screen in the exact locations where they occur. With accurate locations and dedicated voice and data communications between drivers and central operations, security and predictability are enhanced. This all means greatly improved service for the public and timely responses to exceptions.

What's next? Your PDA or cell phone gets a message from the WTS that your bus will be arriving 5 minutes late at your stop. Or, smart transfers where one bus knows to wait for the other bus that is just coming around the corner.

2. The Importance of an ODS:

A core component of such strategically important systems is an operational data store (ODS). It is perhaps the most essential or most vital part of the IT portfolio for both the WTS and GPA. The closer the fit to the business's domain, the more the data and information can be leveraged to existing and new applications. The accuracy of the information, timeliness of event and exception tracking, availability, responsiveness, scalability and maintainability are all essential to the overall integrity of the systems. The closer this model is to the real world, the higher the benefits and ultimate value.

Herb Vossler relates his experience: "Doing the service monitoring piece was an epiphany – the WTS systems would have to know everything ahead of time!!! To actively map every bus in the system at real-time and predict its arrival at the various stops on its route needed all systems to see the same accurate picture. Build interfaces or consolidate into ODS – ODS was the right answer! ODS has enabled the big picture (1995)."

All the strategic systems built since that day use the ODS as the heart. They were only able to advance quickly and effectively because the ODS existed already. It is a huge asset of the WTS.

Their ability to capture and report exceptions in a timely manner is key to their systems. Now with the smart buses, they are focused on identifying the source of issues, with the vision that they will capture this information in the ODS, making it even smarter for all systems to benefit from.

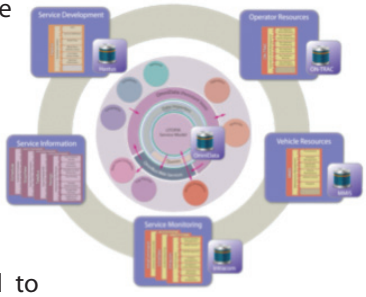
At GPA, Tim Scatliff related how it made sense for them to buy back office software and services to conform to the legal and regulatory issues within the various countries. There was nothing strategic about this software – all the competition had it, too. It also made it easier to communicate with local and global markets, banks, insurance companies, clearing houses, etc. using the standards accepted in each country.

However, for its strategic applications, it used its ODS to consolidate this information and "enrich" it so that all transactions and positions could be maintained indefinitely in the proper context that is so important for historical reporting, portfolio performance, portfolio rebalancing and "knowing your client".

The ODS can source its information from multiple back offices yet provide a single source for all client and advisor focused tools. The ODS allows GPA to differentiate itself from its competition. The existence and ownership of the ODS by GPA allows them to port its applications to different countries, languages and cultures in a timely and affordable manner.

You must fit the ODS to the business and not fit the business to the ODS. Innovations will evolve the model.

The Operational Data Store



For the WTS, the Operational Data Store (ODS) is the database and services at the centre of their systems called the "OmniData Service Data Repository".

Using the "Utopia Real-Time Service Model", it supports services for all other applications to access the transit network data definitions; geographic definitions; service definitions (schedules); service data import and export API's; pattern recognition; stop schedule generation; and operating exceptions.

WTS maintains information on each driver, their availability, rules related to the City of Winnipeg labour agreements, their work assignments, etc.. For each bus, complete maintenance records and maintenance schedules are kept and used to formulate assignments and maintenance appointments. A complete inventory of parts is maintained by the system to avoid any delays in service and availability. This complex management of drivers and buses assures that every planned route is serviced according to schedule every day.

Surprisingly, there are very few cities in North America who have created their own systems based around an ODS. The more common solution is to use separate applications to resolve individual applications. The problem is: the opportunity to see the whole system and its current status (or status of each component) is lost. The first version of the ODS was introduced at the WTS in 1988 as the central core of the bus driver resource management and a service planning application. They then added modules over the years, slowly building the ODS.

3. The Importance of 100% Fit Solutions:

The importance of 100% fit solutions applies to those applications or technologies that define the organization's business or services. It does not necessarily apply to the utility systems, such as payroll, general ledger, and other commonly solved problems.

Both at GPA and at the WTS, this is important for two reasons.

The first reason is that the solution can not compromise or give misinformation. Nor can it remain "silent" to the ODS, when the ODS and its applications should be aware of an event or exception. The solution must not misinterpret or ignore information that the ODS can provide. It must be a 100% fit with the ODS. Getting data and exceptions from one process to another accurately and timely is key to delivering the requirements of the users.

For both GPA and the WTS, having all systems see the same view is critical to its success. A centralized, complete and accurate view of this picture is required to communicate information with the degree of closeness to its actual (true) value at the point and time in question. This is important for both those that use the system and those that keep it running smoothly.

The second reason is to do with how the applications process or interpret the data and help manage the work flow.

Herb Vossler points out that some of the solutions require complex operational research for scheduling and optimizations. Without a 100% fit to the ODS, the algorithms would produce errors in the schedules and inefficiencies in the use of vehicles, manpower and route assignments.

In his work and travels with industry groups and conferences, Bill Menzies is happy to say that their Web-based trip planner (NaviGo) is perhaps the best in North America. The WTS is often asked how they do it.

According to Tim Scatliff, the 100% Fit Solutions gave GPA a competitive edge that were often named as the determining factor in the recruitment and retention of investment advisors, significantly increasing assets under management and revenue streams over the competition. The 100% Fit Solution served them and their clients better than what was otherwise available – so they came and they stayed.

You must fit the systems, processes, business rules and technologies to the business and not fit the business to the systems.

The Costs of 100% Fit Solutions:

There is a myth that 100% Fit Solutions cost more than packaged solutions. From Herb Vossler's experience, the cost of adapting packaged solutions initially as well as ongoing may exceed that of the custom solution. Moreover, the WTS found that the annual costs for the licensing and maintenance of packaged solutions further increased the advantage in favour of building the custom solution.

For their recent fiscal year, their actual software maintenance costs for their 100% Solutions were only 6.25% of the replacement costs of their applications - well below the 15-22% commonly quoted costs for packaged systems.

Ninety percent (90%) of the applications in the WTS IT Portfolio were built in-house by existing staff that were funded by redirecting unused maintenance dollars in their fiscal budget.

For GPA, in the leanest of times such as the global recession of 2008/2009, the actual software maintenance costs for their 100% Solutions were less than 1% of the replacement costs of their applications.

4. The Importance of Architecture:

Both the WTS and GPA have always recognized the importance of architecture. Certain governing principles addressed in the architecture and technologies include coding standards, scalability, security, privacy, accountability, compliance, accessibility, reliability, internationalization, extensibility, integration, maintainability, repeatability, quality, reuse, componentization, patterns and best practices, practicalities, and the inclusion of value-added features that cannot be purchased or provided by others. Isolating issues and concerns into frameworks has enabled the evolution or lifecycle of the strategic systems, allowing them to adapt without significant impact to their implementation.

5. The Importance of People & Team:

Over the past 20 years, Herb Vossler has built a team of highly skilled individuals who really understand the business and challenges of the WTS. They are passionate about the role public transit has in reducing Winnipeg's carbon footprint.

Bill Menzies, Keith Martin and Catherine Caldwell all concur that the IT group at the WTS are among the leading experts of their operations and processes. Combined with their in-depth knowledge of the applications and systems, their contributions can not be understated. In fact, they are crucial to the organization and its future. They rely on the IT team to help understand the opportunities.

Tim Scatliff credits the people and team for GPA's success. GPA's strategy has been to provide a core team of skilled professionals who will always be available, responsible and accountable for all aspects of IT support. Team building, skills retention and continuity have been vital to the organization's strength to lead and adapt. Giving people exciting and meaningful work cannot be understated. Loyalty, respect and ownership of the issues and challenges are some of many returns the people give back to the organization.

6. The Importance of Process & Continuous Improvement:

Next only to the people, process and continuous improvement were recognized as the real strength of the organization. It was critical to design the organization so that its values were held by every person and all worked as one.

Careful evaluation and judgment must be an integral part of each process.

GPA adopted Protegra's LifeCycle very early in its formation, which facilitates process, transparency, communication and provides templates for the creation of several artifacts: requirements, functional specifications (Waterfall methodology) or user stories and Test-driven development (Agile/Lean methodologies), detailed design and deployment documents.

It was the right decision.

7. The Importance of a Business Driven Focus:

A business driven focus is fundamental to the IT group's stewardship and drives much of the processes early in the lifecycle.

Solutions begin with the discovery and articulation of a common vision that is shared by all key stakeholders of the business, including what success will feel like and how it will be measured.

From there, strategies, measures, targets and corporate level initiatives are developed. Their impact on the organization is carefully considered and system opportunities evolve and mature until all stakeholders are comfortable with the solution concepts and their consistency with their vision for the business.

Both for the WTS and for GPA, this focus in turn drives the 100% Fit Solution.

8. Importance of "Doing the Right Thing":

Tim Scatliff recalls a favourite challenge often raised within team meetings by Wadood Ibrahim, President & CEO of Protegra: "What is the right thing to do?".

It is an especially useful test when tough decisions have to be made.

Protegra™
Business. Technology. Solutions.

Congratulations to the WTS for a job well done!

For More Information

Our contribution to GPA's success helped us move into a trusted advisor role. We continue to provide ongoing support and consulting for their strategic applications that surround the ODS. They are 100% Fit Solutions to the business.

Find out how Protegra can help you build long term value to your organization while delivering today's business driven systems and service.

Contact:
Protegra
1-866-956-2727
inquiry@protegra.com
www.protegra.com