



Executive Summary

“To fulfill our vision for academic excellence, we are uniquely positioned to further stake our legacy to society based on our commitment to technology and our leadership in marrying coursework, research and extracurricular pursuits in engineering, business, science, health sciences and arts.”

-Evolution to Academic Excellence

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Goal 1: Provide Comprehensive Customer Service

“Our students know they are the center of the educational process and all employees demonstrate an unparalleled commitment to creating a person-to-person connection”

-Evolution to Academic Excellence

At its heart, an IT organization is a service organization. At Clarkson, every IT effort will reflect a commitment to living out the Clarkson values, which includes caring about our customers, and ensuring the service we provide is comprehensive. To that end, we have crafted a variety of strategies to ensure we achieve our goal.

Working with Marketing and External Communications we will overhaul and significantly enhance the IT web presence to provide accurate and current information to all of our constituents. We will develop and deliver more self-service tools to allow our customers to get the information they need when they need it. Customers will be able to submit service requests at anytime, from anywhere, and will have access to knowledge base articles to assist them in solving their problems, or guiding them through processes. We will work with the HelpDesk to ensure the availability of tools to accurately capture, route, and solve customer issues in the most efficient and transparent way.

We will meet more frequently with the Administrative and Academic Technology Advancement Committees, and will form a Student Technology Advisory Committee to provide improved communications between the Office of Information Technology and our customer base. We will also expand our feedback mechanism beyond electronic surveys to include customer interviews and more face-to-face outreach efforts, to include participation in departmental meetings.

We will partner with Human Resources to ensure that all employees have access to training to allow them to become proficient in the technologies they need to efficiently and effectively accomplish their tasks.

Behind the scenes, OIT will continue to adopt principles of service management from the Information Technology Information Library (ITIL), to provide a systematic approach to delivering quality IT services. We will also transition our internal project management approach to reflect agile development principles, such as Scrum, which allows us to effectively manage our backlog of service requests.

These strategies will allow us to deliver IT services at a very high level, supporting faculty, students, and staff in their endeavors.

Goal 2: Grow and Sustain a Global, Agile Environment for Learning, Research, and Operations

“Our time is ripe to leverage the confluence of the achievements of our students, our faculty’s growing research success, and the influence of our alumni in society... a society that depends upon a workforce capable of creating, adapting, and managing technology regardless of discipline of study or natural individual talents”

-Evolution to Academic Excellence

Through the implementation of the previous Information Technology Strategic Plan, Clarkson successfully built a stable, reliable, and effective infrastructure to support the operational and educational needs of the institution. As technology continues to evolve at a rapid rate, we need to transition to an environment that is agile in its ability to support the wide every expanding range of needs of the learning and research communities. Additionally, operationally the university needs to strive to reduce costs, increase efficiency, and become more effective in the deliver of services to our students. The tools we employ must be flexible, easy to use, and they must enable the reuse and sharing of information across systems.

The strategies required to achieve this goal will require a holistic view of both the technology and resources involved. We cannot be agile if we have non-integrated systems and spend resources on siloed solutions.

We will employ a suite of tools to help both the teacher and learner in managing their academic information and enhance the learning process. We will continue the Moodle implementation, providing a common access point for all class related information. Moodle’s capabilities will be expanded with the integration of software to provide real-time collaboration, e-portfolios to catalog learner progress, and other functionality as needed. We will partner with the Center for Excellence in Communication (CEC) and the Teaching Excellence Committee of the Faculty Senate to provide workshops to faculty to develop their skills and provide pedagogical guidance on the effective employment of technology.

Classroom technology will be incorporated into a comprehensive plan to provide a common suite of capabilities based on the category of learning space. This plan will also include increased capability of to employ video conferencing and lecture capture.

Since learning occurs everywhere in a campus environment, a plan to provide pervasive wireless is essential. Additionally, we will deploy a virtual lab environment, allowing students to remotely access the resources they would normally get in a physical computer lab, anywhere they have Internet access. In time, this virtual lab will dynamically configure based on the students’ class enrollment.

Partnering with Marketing and External relations, we will oversee a web redevelopment effort to redefine the Clarkson web presence. This effort includes providing tools and training for departments and faculty to easily update their online content, and provide an authentic representation of the university to attract prospective students, provide current students with the information they need, and enhance the competitive position of the university.

Assisting faculty in their professional development will be accomplished by the complete implementation of the Digital Measures faculty activity reporting software. This software will allow faculty to track their academic and research activities, automatically creating a variety of reports and feeding their online faculty profiles.

Creating an agile infrastructure has traditionally been a challenge for IT organizations, both from a resource and equipment perspective. Recent trends in cloud computing, however, are rapidly changing the way in which servers and applications are delivered to customers. One of the strategies we will employ to achieve this agility is the establishment of an “internal cloud” architecture. This internal cloud will allow us to rapidly configure and deploy servers and applications for operational and research purposes. This cloud also enables us to create a virtual desktop environment for every student, giving him or her a dedicated academic platform, accessible from anywhere. This same technology will allow us to deploy administrative virtual desktops, significantly reducing the capital expenditures on equipment and drastically reducing the support requirements.

From an operational perspective, strategic management of PeopleSoft is critical to the ability of the university to service its constituents. Over the next 3 years we will be faced with upgrading financials from 7.5 to 9.1 (currently in progress), and the HR/Student module from 8.9 to 9.0 Campus Solutions. In addition to the two main upgrade projects, we also will need to migrate “shadow systems” into the PeopleSoft environment, as well as address several short falls in capability, most notable grants management. The strategic management direction for PeopleSoft will ensure that we are appropriately prioritizing projects and resources, reducing redundancy, and achieving operational goals.

Goal 3: Centralize and Secure Data, Enabling Data-Driven Decisions Across the University

"...when you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot measure it, you cannot express it in numbers, your knowledge is of meager and unsatisfactory kind..."

-Lord Kelvin

Clarkson is a data-rich environment, and that data provides many opportunities and challenges. Although we have made strides over the last eight years to centralize data in the PeopleSoft system, we are still very dependent on paper files. There is a wealth of information locked in file cabinets and desks across campus - information that cannot be measured.

Our goal is to provide tools and processes to digitize that data, make it available through PeopleSoft, and enable us to analyze (measure) it to drive decision-making. Our strategies are focused on creating an environment where the right information is available to the right people at the right time. Inherent in this is the need to centralize data, secure it, and ensure it is properly managed through its lifecycle.

We will work with departments on campus to review current processes and recommend improvements that will reduce the amount of duplicate data, while ensuring critical data is captured, stored and shared as appropriate. In this process we will also conduct risk assessments; identifying and classifying the data, reviewing storage conditions, and implementing appropriate retention strategies.

A key component to capturing data is the implementation of a document management system. This is much more than just scanning and storing paper documents; it entails establishing a structure to store all university data, and striving toward the goal of one virtual file per student, employee, or financial account as appropriate. Also included in this strategy creating electronic forms, reducing the need for scanning and printing traditional forms.

We will be in a much better position to secure the data from accidental breach or intentional disclosure by centralization. Data will not be stored on end-user workstations that are more vulnerable to malicious activity or accidental loss. We will employ automated scanning for Personally Identifiable Information (PII) to identify and secure data that is not stored in compliance with regulations.

We will enable analytics to be performed on the information we have and use it to drive decisions. Tools will be implemented and developed to allow end users to ask questions about the data we have, and seek new insights. We will develop and deploy real-time

dashboards to graphically show the information on campus and allow users to drill down to individual data sets if necessary to analyze and understand trends.

Technically, our strategy to realize this goal will be based on virtualization technology. It will allow us to separate our applications from the physical servers, allow us to have a highly available environment that is critical when you centralize your data. Virtualization will allow us to optimize our physical resources, and allow data to be seamlessly moved between physical locations, and even off campus in the event of a major regional disaster.

All of these strategies will move us forward to the goal of centralizing our data, using it to obtain information, creating knowledge, and obtaining the intelligence needed to successfully guide the organization.

Goal 4: Build University Reputation through Outreach, Community Engagement, and Technology Leadership

“The vitality of our regional economy and the vibrancy of our community...are critical to marketing Clarkson to the World. Clarkson must be a leader in developing intellectual property, transferring technology to the marketplace, and becoming a central part of the economic enterprise that values innovation, creativity and creates wealth.”

-Evolution to Academic Excellence

Clarkson is fundamentally a technology driven and oriented university. Our IT organization must reflect the level of technology prowess expected by our students, faculty, and peer institutions. Aside by being technically proficient, we must present a public face to that expertise. OIT’s involvement in the local area, the region, and on the national stage will reinforce Clarkson’s standing, while building the reputation of our students, faculty and staff.

Our continued involvement in the Adirondack North Country Initiative for Wired Work provides leadership on transitioning the regional economy to a knowledge-based workforce. Our work with regional middle and last mile providers has helped secure almost 2% of nationally available stimulus funds for broadband infrastructure. This work strengthens Clarkson’s position as a regional partner for economic development.

The county government continues to look to Clarkson for technology expertise, involving us in RFP reviews, technology conference planning, and as a resource to the board of legislatures. We will also play a role in working with area k-12 institutions in understanding how to fully leverage the recent changes in the E-rate program to provide broadband access to local communities.

We will continue to speak at local, regional and national conferences, highlighting the significant accomplishments of the IT organization at Clarkson. We will expand this effort by submitting article to trade magazines and journals.

One of the most intriguing strategies we will engage is the creation of a for-profit function. The region is lacking in technical expertise for small and medium size businesses and regional educational institutions struggle to attract and retain talent. Clarkson can help address this void by providing cost-effective consulting and technology management services to these entities, and the generated revenue can then be used to support economic development and reduce the cost of education for our students.

We will continue to seek partnerships with industry leaders, such as IBM, Verizon, AMD, and Qualcomm. We will embrace the opportunity to work with these leaders as they

support our research and operations. In these activities, we will look to the total cost of the engagement, and ensure the proposed partnerships have sustainable mechanisms for a successful long term partnership.

Finally, we will work closely with CICU as they develop the “Knowledgeny” information portal. This is an effort to create a statewide database/warehouse of information on the research and educational opportunities that the CICU and SUNY member institutions provide. It will help Clarkson get national and international exposure, as potential research partners and employers can quickly get information on our capabilities and centers of excellence.

Goal 1: Provide Comprehensive Customer Service								
Metrics:				Sustainability Impacts:				
<ul style="list-style-type: none"> • Every interaction is reflective of the Clarkson values • Customer satisfaction 95% • 90% cases closed within established guidelines • Technology training curricula for all employee categories • Self-service technologies implemented • Web redevelopment delivered on time, budget • ITIL implementation in network & application management • SCRUM implemented for Agile development 				<ul style="list-style-type: none"> • 				
	STRATEGY	Dependencies	Owner	Partner	CY 11	CY12	CY13	Budgeted?
1.1	Create an enhanced web presence for OIT	None	CIO	M & ER	X			Yes
Expected Deliverables: Clean, concise OIT website with information on services, applications, as well as strategies and goals								
Budget Estimate: \$2500 for student wages								
1.2	New HelpDesk software with self service capability	Identifying application to meet needs	CIO	Director of F&S	X			?
Expected Deliverables: Self-service ticket entry, searchable knowledgebase, customer information repository, room reservations searchable through Outlook								
Budget Estimate: \$0-\$60,000 depending on application								
1.3	Enhance and expand governance structure	CUSA, CUB, and GSA, Faculty Senate, TAC Committees	CIO	CUSA, CUB, GSA	X			N/A
Expected Deliverables: establish student TAC, Merge academic TAC & Senate IT committee, meet with TACs at least bi-monthly								
Budget Estimate: N/A								
1.4	Creation of online forms for internal administration	PS workflow training, process improvement	CIO	CFO (SAS, Finance, HR)	X	X		Yes
Expected Deliverables: Common administrative forms will be created in PS or Nolij, allowing for paperless processing of common requests and authorizations								
Budget Estimate: \$14,000								
1.5	Implement ITIL methodologies for IT service management	Scaling to fit OIT resources, HelpDesk	CIO	Director of F&S	X	X	X	N/A
Expected Deliverables: Process based approach to delivering IT services, reduced downtime, increased knowledge base								
Budget Estimate: N/A								
1.6	Implement agile development methodology (SCRUM)	None	CIO		X			N/A

	Expected Deliverables: Higher project completion rate, improved customer satisfaction, better visibility into projects and prioritization, better partnering with customers							
	Budget Estimate: N/A							
1.7	Training program for campus applications	Resources to conduct training, training lab	HR	CIO	X	X		No
	Expected Deliverables: Development of positioned-based curriculum, office productivity training, training component for on-boarding process							
	Budget Estimate: \$7500 for training lab (downtown), \$35,000 for trainer							
1.8	Create an outreach and customer feedback program	none	CIO	Division Heads	X			N/A
	Expected Deliverables: Phone follow-up with customers to rate service, participation in departmental meetings, presentations to different campus groups							
	Budget Estimate: N/A							

Goal 2: Grow and Sustain a Global, Agile Environment for Learning, Research, and Operations

<p>Metrics:</p> <ul style="list-style-type: none"> • 90% adoption rate of Moodle for basic class information • 70% adoption rate of Moodle for enhanced class information • Adoption of e-portfolios by 2 majors • 25% of faculty attend at least one workshop in the first CY • 8 faculty workshops per AY • Established & funded classroom technology plan • 90% adoption rate of Digital Measures for faculty activity reporting • Creation of an “Internal Cloud” architecture • Virtual Lab deployment by CY 2012 • Virtual Desktop for all students fall 2012 • PS financials 9.1 go live 7/1/11 • PS Campus Solutions go live 12/1/12 • Strategic Management Document for PS, endorsed by Division Heads, 1/1/11 	<p>Sustainability Impacts:</p> <ul style="list-style-type: none"> •
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	STRATEGY	Dependencies	Owner	Partner	CY 11	CY12	CY13	Budgeted?
2.1	Continue to expand the functionality of the Instructional Technology environment	Agreement on toolsets	CIO	Provost VP of M&ER	X	X		Yes
Expected Deliverables: E-portfolios, real-time collaboration (DimDim), others as defined								
Budget Estimate: \$6,000 for training								
2.2	Provide faculty workshops for Moodle & other classroom technologies	none	CIO	CEC, Faculty Senate	X	X		Yes
Expected Deliverables: at least 8 annual workshops, guest speakers, curriculum development activities								
Budget Estimate: \$ depends on the speaker, Teaching Excellence Committee has a budget for this purpose								
2.3	Creation & implementation of a classroom technology enhancement plan	funding	CIO	Director of F&S	X			Partial
Expected Deliverables: Common suite of technology tools based on classroom classification								
Budget Estimate: \$50,000 annually, current budget is \$20,000								
2.4	Establishment of pervasive wireless on campus	funding	CIO	Director of F&S, VP of UO&SA		X	X	Partial
Expected Deliverables: Continuous wireless coverage throughout campus								
Budget Estimate: still collecting information								

2.5	Creation of a Virtual Lab environment	Funding, proof of concept	CIO	Provost	X	X		Partial
Expected Deliverables: Lab environment delivered via virtual desktop, campus labs can run on reduced hardware								
Budget Estimate: ~\$200,000 initial investment, current technology cannot replace all labs, namely CEC and CSOE. Lab refresh funds generate ~\$250k every 3 years								
2.6	Redevelopment of the campus website		CIO/VP of M&ER	Division Heads	X			Yes
Expected Deliverables: Extensive redesign of the campus website to include web 2.0 technologies, an integrated approach to information, and digital literacy training for campus users								
Budget Estimate: \$xxx,xxx								
2.7	Establish an "internal cloud" architecture	Funding	CIO			X	X	Partial
Expected Deliverables: cloud based architecture where applications can be moved across physical resources to achieve optimum use of resource, flexibility for users, and the ability to rapidly provide capability for customers.								
Budget Estimate: ~\$80,000 annually (currently \$65K)								
2.8	Virtual desktop for every student at Clarkson	Funding	CIO			X	X	Partial
Expected Deliverables: VD environment for students for Academic use. Access to licensed software regardless of physical location								
Budget Estimate: Virtual lab can be leveraged. Estimated cost: \$200,000-400,000 depending on oversubscription rate and software access. Annually cost would be ~\$50,000 - \$90,000 once established								
2.9	PeopleSoft upgrades and Strategic Roadmap	Funding	CIO	CFO	X			Partial
Expected Deliverables: web based financials package, financial statements, ACH for AP, improved workflows; new environment for PS HR & Student; integration of hiring module & benefits, PeopleAdmin and SmartBen discontinued- functionality delivered in 9.0 ; Direction of PS for next 5 years, including new modules, functionality, etc. Plan to eliminate silos.								
Budget Estimate: in process								
2.10	Create plan to provide seamless integration of IT & Library systems		CIO	Director of Libraries	X	X		Partial
Expected Deliverables: standards and technology direction document ; shared delivery agreement for digital literacy, copyright and social media education, framework for shared systems administrator/systems librarian								
Budget Estimate: \$70,000 for salary & benefits								
2.11	Establishment of the Center for Advanced Analytics/Green Data Center	Funding	CIO	Provost		X	X	Partial
Expected Deliverables: Establishment of a Green Data Center in Old Main, providing analytical support for all research across campus, as well as establishing dedicated research computing capability and support.								
Budget Estimate: in process								

Goal 3: Centralize and Secure Data, Enabling Data-Driven Decisions Across the University

<p>Metrics:</p> <ul style="list-style-type: none"> • 75% of departments engage in a process review activity • 100% of divisions engage in a Risk Assessment activity • Implementation of a Document Management system <ul style="list-style-type: none"> ○ 100% of internal forms online by CY 2012 ○ 50% reduction in paper use ○ Single file storage for students & employees ○ Single file storage for financial accounts • All documents added with retention criteria • Continual PII scanning capability • Purchase and implementation of an analytics package <ul style="list-style-type: none"> ○ 75% adoption rate ○ Establish a datawarehouse • Development of Dashboards for cabinet members • 100% of servers virtualized • Alternate site restoral capability for critical systems (PS, Email, Moodle) <ul style="list-style-type: none"> ○ Establishment of a “mini-noc” in Clarkson Hall 	<p>Sustainability Impacts:</p> <ul style="list-style-type: none"> •
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	STRATEGY	Dependencies	Owner	Partner	CY 11	CY12	CY13	Budgeted?
3.1	Conduct Process Review activity with each department on campus	participation	CIO	Division Heads	X	X		N/A
Expected Deliverables: Identify technology options to streamline processes; Strive for consistency in data across campus; Opportunity to maximize enterprise applications (PeopleSoft, Nolij)								
Budget Estimate: N/A								
3.2	Conduct Information Risk Assessment activity with each division	Participation	CIO	Division Heads	X	X	X	N/A
Expected Deliverables: identify security risks, implement remediation plans								
Budget Estimate: none for assessment, may require \$\$ for remediation								
3.3	Implement a document management system <ul style="list-style-type: none"> • Retention criteria • Custom forms • Workflows 	Funding from divisions	CIO	Division Heads	X	X		Yes
Expected Deliverables: ability to scan paper documents to eliminate paper files, easier sharing of information, single file storages for students, employees, accounts.								
Budget Estimate: \$300,000 over 5 years. OIT will cover \$150,000. Agreement from departments to cover \$110,000. Still working on remaining \$40,000								
3.4	Implementation of analytics & dashboarding package	Funding/ adoption	CIO	CFO, Dean of Admission, VP of OPAR		X	X	No
Expected Deliverables: Creation of datawarehouse and standard reports to provide drill-down analytics for end-users; free up admin computing resources from report writing, dashboards for Division and Department Heads, graphical representation of key performance indicators.								
Budget Estimate: ~\$110,000 to \$300,000 depending on software, modules used, and desired capabilities								

3.5	Virtualization of all enterprise applications	2.7	CIO			X		Partial
Expected Deliverables: highly available “portable” application infrastructure								
Budget Estimate: see 2.8								
3.6	Establish a “mini-noc” in Clarkson Hall	2.7,3.5	CIO			X	X	Partial
Expected Deliverables: Development environment moved into Clarkson hall, providing for restoral of key applications in a degraded capacity.								
Budget Estimate: need to get construction costs, estimating \$50k								
3.7	Develop a Holistic budget model of enterprise IT spending		CIO	CFO	X	X	X	N/A
Expected Deliverables: Site licenses for common software, reduced overall IT spending through centralization, reduction of duplicate resources								
Budget Estimate: none								
3.8	Creation of administrative virtual desktops	Funding	CIO			X	X	No
Expected Deliverables: Move to thin-client technology for administrative desktops, centralizing resources and reducing equipment and support costs								
Budget Estimate: would require moving some of the money from departments that is spent on admin desktops in to a centralized fund								
3.9	Leverage technology for energy and building management across campus	Funding	Director Facilities and Services	CIO		X	X	No
Expected Deliverables: Improve BMS infrastructure to provide benchmarking data & efficiency improvements, networked meters across camps, improved reporting tools								
Budget Estimate: highly variable depending on selected technology and scale								

Goal 4: Build University Reputation through Outreach, Community Engagement, and Technology Leadership

<p>Metrics:</p> <ul style="list-style-type: none"> • Continued growth of the ANCIWW and sponsorships • Continued participation on the St. Lawrence County IT committee • Appointment to NYSERNet Board • 1 published article by IT staff per year • Speaking engagements by IT staff <ul style="list-style-type: none"> ○ 1 national conference/yr ○ 1 regional conference/yr ○ 1 local conference/yr • Successful implementation of the CICU information portal – knowledge project • Establishment of a “for profit” IT enterprise • One formal technology partnership established per year, resulting in a gift (financial or in kind) <ul style="list-style-type: none"> ○ Promote E-rate use in the North Country region 	<p>Sustainability Impacts:</p> <ul style="list-style-type: none"> •
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	STRATEGY	Dependencies	Owner	Partner	CY 11	CY12	CY13	Budgeted?
4.1	Support the Adirondack North Country Initiative for Wired Work, and the Adirondack Business Center.		CIO	President, VP M & ER, OPAR, Center for Entrepreneurship	X	X	X	N/A
Expected Deliverables: Economic Development in the North Country based on broadband activities, exposure of Clarkson as a leader								
Budget Estimate: N/A								
4.2	Participate on the St. Lawrence County IT Committee		CIO		X	X	X	N/A
Expected Deliverables: Influence county decision makers in efforts to establish St. Lawrence County as a leader in the knowledge economy								
Budget Estimate:								
4.3	Submit presentation proposals to national, regional, and local conferences	Selection of topics	CIO		X	X	X	Yes
Expected Deliverables: increase exposure for Clarkson, learning opportunity for staff.								
Budget Estimate: \$2000 per national and regional conference for fees, travel, etc.								
4.4	Submit articles to trade magazines for publishing	Write-up of current projects	CIO		X	X	X	N/A
Expected Deliverables: increase exposure for Clarkson, learning opportunity for staff.								
Budget Estimate: N/A								

4.5	Develop a “for profit” function for IT services	Business model & customer	CIO	CFO	X	X	X	n/a
Expected Deliverables: Showcase Clarkson’s technical leadership; benefit local colleges & businesses								
Budget Estimate: n/a								
4.6	Seek research and technology partnerships with industry leaders	Establishing relationships	CIO	OPAR, President	X	X	X	n/a
Expected Deliverables: Showcase Clarkson technical leadership, garner resources for the university								
Budget Estimate: n/a								
4.7	Assist in the implementation of the CICU information portal	CICU	CIO		X	X	X	n/a
Expected Deliverables: reinforce Clarkson’s leadership role in the CICU, showcase Clarkson research capabilities to a national and international audience								
Budget Estimate: n/a								

PeopleSoft 5 Year Look Ahead (DRAFT)

Module/ Calendar Year		2011	2012	2013	2014	2015	
FSCM							
Core Finance	General Ledger Purchasing Assett Management Accounts Payable	Currently Licensed					
	7.5						
	9.1						
Implementation							
Grants Mgt Suite	Project Costing Contracts Grants Expenses Billing Receivables	Additional License Needed					
	9.1						
	Implementation						
	CS						
	Core Student	Student Records Student Financials Financial Aid Admission Campus Self-Service HR/Payroll (8.9 only)	Currently Licensed				
		8.9					
9.0							
Implementation							
Contributor Relations		Investigating					
Implementation							
HCM							
HR Self Service Suite	HR/Payroll						
	Talent Acquisition Mgr Candidate Gateway	PeopleAdmin	3rd Party Applications				
	eBenefits	SmartBen					
	ePay eDevelopment eProfile Absence Mgt	Additional License Needed					
	Implementation						
	Constituent Relationship Management						
	Still researching modules, implementation, and integration with other products in the PS suite						
	LEGEND						
		Implementation					
		Go Live					
		End of life / Decommission					
		Third Party Application					