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PWC Business Challenge
Step Up: Algorithmic Business

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PWC is a company that is always looking for the best for their customers. Being the strong consulting firm they are, providing the latest technology for business solutions is not only desired, but necessary. RPA and AI technologies have disrupted the business world in unprecedented ways. It is essential to form strategic alliances that will further strengthen PWC's place as a top-notch business solution provider for their clients worldwide.

Algorithmic Business:

Businesses across the globe are constantly looking for ways to increase efficiency whilst still maintaining their level of excellence to their customers. The AI continuum has been evolving exponentially over the last few years, and it is empirical that PWC focuses on implementing these new technologies in their consulting services so they can stay relevant to their customers and current businesses alike.

At the beginning of the AI continuum, we see the use of Business Process Automation (BPA). BPA is a process of managing information, data and processes to reduce costs, resources and investment. It is geared toward implementing software applications to automate routine business tasks through initiation, execution and completion, while achieving enterprise-wide workflow efficiency (Technopedia). Nowadays, most businesses are already using BPA in their daily operations, leading them to continue moving forward in the continuum, by working on Robotic Process Automation (RPA).

As the name implies it, RPA mimics high-volume, repeatable human tasks, leaving more abstract duties such as relationship building to the humans (SmartSheet, 2019). PWC has gone one step ahead from RPA and is beginning to implement Intelligent Process Automation (IPA), thus adding the use of

Machine Learning in their consulting services, through partnerships with companies such as WorkFusion, Google DeepMind and IBM Watson.

Although PWC is providing up-to-date consulting services, implementing BPA, RPA and IPA can take anywhere between one to two years. With the exponential increase of technologies, PwC's focus should be on staying ahead of competitors and providing a unique service that takes their clients' business processes beyond IPA. This is when Algorithmic Business Models comes in. According to Gartner (2019), Algorithmic business is the industrialized use of complex mathematical algorithms pivotal to driving improved business decisions or process automation for competitive differentiation. Through the use of algorithmic business, machines can be trained to make decisions that were once made by humans. This process can be an incredibly useful tool for CFOs, where Asset Management can be fully automated, reducing overall costs and increasing efficiency.

Asset Management:

Asset management focuses on the processes by which an organization plans, identifies, documents and manages the assets within the organization (Carnegie Mellon University, 2016). Algorithmic business can be applied to all four of these stages, for exemplification we will be focusing on the documentation stage – which takes place within the finance & accounting department.

Traditionally assets have been tracked physically by people. Technology has allowed for Smart Asset Management to develop, where real time information is collected through sensory nodes in an information center. This allows for source oriented, flexible, and knowledge-based asset management decisions.

However, this is where most industries stop and let strategic decisions for assets such as purchasing, maintenance and repair be made by managers. Through AB, machines can make these decisions for you.

Once an asset has been selected and purchased, the system will recognize the length of the asset's useful life as per the pertinent fiscal law and the company's chosen type of depreciation. This will feed into the Robotic Process Automation (RPA) for monthly deduction until the end of the fiscal year. The system will in this case renew a new cycle of depreciation as long as the asset's new value is still greater than 0. Up until this level, RPA did the job with Intelligent Process Automation (IPA) making it better over time with historical and newly gathered data.

If the asset has reached the end of its life cycle, then the system will continue to analyze the conditions surrounding the asset to identify whether if it is still needed or not, this is where Algorithmic Business (AB) comes in. If the asset is not needed anymore, the department will continue to write the asset off and decide to sell, donate, recycle or trash it, again through the usage of AB to analyze different scenarios and conditions to make the best decision. If the asset is still needed, then the algorithm will again evaluate the conditions, requirements and scenarios to decide whether a new asset is required or if maintenance or refurbishment of the asset is enough to lengthen its life. In either case, the new value needs to be updated in the system and the process starts over again.

As you can see, with the right data input, algorithmic business is able to make decisions for you, reducing the time invested by a company's human resource in the evaluation of all the factors that affect the decision process for asset management. As a matter of fact, it allows you to run many simulations of many scenarios in a matter of seconds, allowing the decision process to be objective, reliable and free of bias, not to mention quick and accurate. For further reference, see Exhibit A.

As mentioned previously, asset management is a process that includes all the steps from identifying the need for the asset to the disposal of it and everything in between. Algorithmic business is a versatile solution that can be applied to any process within the company, leading to impactful results in efficiency, productivity as well as cost reduction if placed in the operational functions.

For example, if we were to expand the use of algorithmic business to the actual management of the asset within a manufacturing plant – through predictive maintenance – you would be able to see a reduction of 20% in equipment downtime. Machines will schedule timely interventions for preventive and predictive maintenance, as well as set purchase requests and work orders for said interventions. Therefore, your production and consequent revenues will remain undisturbed. In addition to it, automating manual registration of assets can reduce labor cost by 15-30% (Bloomberg, 2017).

As the advantages of using AB for business have been established, we propose an alliance with a company that is in the technological foreground, always innovating and allowing PWC to offer the best options to their clients. The company we are proposing is NetObjex.

Partnership with NetObjex:

NetObjex specializes in providing Integrated platforms that optimize the seamless flow of real – time data across your entire business process (Decentralized digital asset management platform). NetObjex builds customized IOT/AI devices as per client requirements making it client specific solutions. Since NetObjex offers simple and standardized devices, it is also easy to scale it or reuse it for other clients that require similar business processes automation. NetObjex recently acquired Servntire - a Kerala based blockchain company to add blockchain to its other AI products (Staff,

Inc42, 2018). NetObjex has also proven experience with Asset Management working with clients across Manufacturing, Supply Chain and Logistics industries.

Why NetObjex?

PWC has the best BPA/RPA/IPA partners. We believe just selecting the right RPA vendor will not differentiate PWC from its competitors. A completely automated business process package is the way forward and this is where netObjex adds value. NetObjex will deliver the final AI layer to the existing PWC's solution (BPA/RPA/IPA).

How will the partnership work?

PWC works with its client to design a solution to automate their business process. This is developed as business process flow with different nodes where decisions are made with the help of NetObjex. PWC identifies all possible scenarios that need to be considered for decision making at each of the nodes. NetObjex helps build the customized devices and integrates them into one product using algorithms and Machine Learning. NetObjex gets paid for licensing these devices annually and PWC helps with future algorithm enhancements and consulting services.

Revenue Split: See Exhibit B.

Benefits for PWC:

PWC will have a first mover advantage over its competitors. PWC consulting hours are expected to increase dramatically through the designing of scenarios and logic for how each decision-making node should work. By implementing algorithmic business PWC also increases clients' switching cost significantly making them loyal PWC clients. Many companies like Google, Amazon, Uber have already moved to Algorithm run business model to optimize their overall

process and reduce human intervention. This solution would make PWC future proof for the next 5 to 10 years. Algorithms can also be reused that reduces the future implementation costs and time for PWC. While companies take a few years to implement their solution, PWC can finish implementation with a much shorter time span using its algorithm template.

Conclusion:

We believe this alliance will prove to be quite fruitful for PWC and their clients, as the technology is really applicable to many scenarios other than that explored in this paper. The possibilities for each unique industry within PWC's client base are practically endless. Through this alliance, PWC could cement their status as a number one solution provider for their clients, stepping up before the competition does. The technological world keeps changing day by day, and its up to us to catch up with it and keep insuring we are on top of the innovations, namely to "step up" or step down.

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EXHIBITS:

Exhibit A: Asset Management Flow Chart

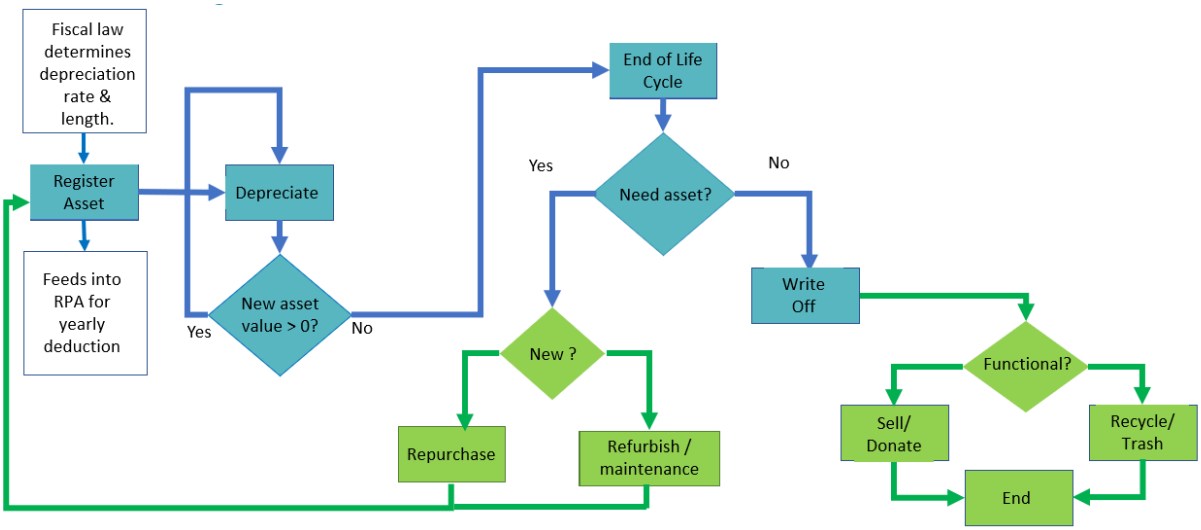

Exhibit B : Revenue Split

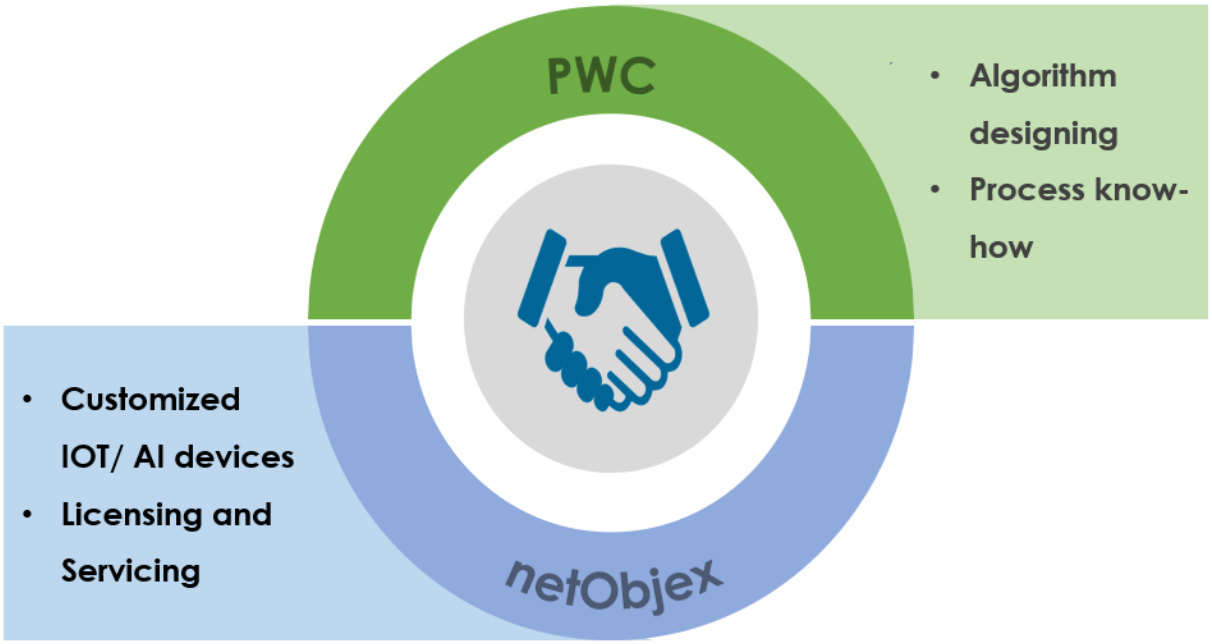

Exhibit C: Cost Estimates

RPA – Project Cost Estimate

Complexity	No. of Days		
	Simple	Medium	Complex
Build	20	25	30
QA	10	10	15
Prod Rollout & Warranty	15	15	20

Role		Cost/Hr	Simple		Medium		Complex	
			FTE	Total Cost	FTE	Total Cost	FTE	Total Cost
Build								
Manager		$ 120.00	0.25	$ 4,800.00	0.5	$ 12,000.00	1	$ 28,800.00
Onshore Lead		$ 90.00	0.5	$ 7,200.00	1	$ 18,000.00	2	$ 43,200.00
Offshore Developer		$ 30.00	2	$ 9,600.00	3	$ 18,000.00	5	$ 36,000.00
				$ 21,600.00		**$ 48,000.00**		**$ 108,000.00**
QA								
Manager		$ 120.00	0.125	$ 1,200.00	0.25	$ 2,400.00	0.5	$ 7,200.00
Onshore Lead		$ 90.00	0.25	$ 1,800.00	0.5	$ 3,600.00	1	$ 10,800.00
Offshore Developer		$ 30.00	1	$ 2,400.00	2	$ 4,800.00	3	$ 10,800.00
QA Lead		$ 70.00	0.25	$ 1,400.00	0.5	$ 2,800.00	1	$ 8,400.00
QA Tester		$ 25.00	1	$ 2,000.00	2	$ 4,000.00	4	$ 12,000.00
				$ 8,800.00		**$ 17,600.00**		**$ 49,200.00**
Prod Rollout & Support								
Manager		$ 120.00	0.125	$ 1,800.00	0.25	$ 3,600.00	0.5	$ 9,600.00
Onshore Lead		$ 90.00	0.25	$ 2,700.00	0.5	$ 5,400.00	1	$ 14,400.00
Offshore Developer		$ 30.00	1	$ 3,600.00	2	$ 7,200.00	3	$ 14,400.00
				$ 8,100.00		**$ 16,200.00**		**$ 38,400.00**
Total Cost				**$ 38,500.00**		**$ 81,800.00**		**$ 195,600.00**

Exhibit D: Business Model CANVAS