

Making Technology Work for You

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A Bit About Me

- I'm a millennial
- Son of an IT professional
- Degree in Electrical Engineering
- 10 years experience in enterprise software development



How to Drink From the Firehose

- Get you up to speed on current technologies
- How to identify what is relevant to you right now
- How to calculate your return on investment (ROI)
- Choosing vendors and partners for a high rate of success

Buckle up!

A BRIEF UPDATE ON THE STATE OF TECH

Artificial Intelligence (AI) / Machine Learning (ML)

- Software that can learn to do things it wasn't explicitly programmed to do
- Must be trained with large data sets
- Very good at identifying patterns
- Can be used to try to predict future events



Internet of Things (IoT)

- Computers are being embedded into everything
- 100's of computers per person on earth
- Cellular and WiFi enable enormous amounts of data
- Enable push notifications / alerts, fine grained insight, remove human error



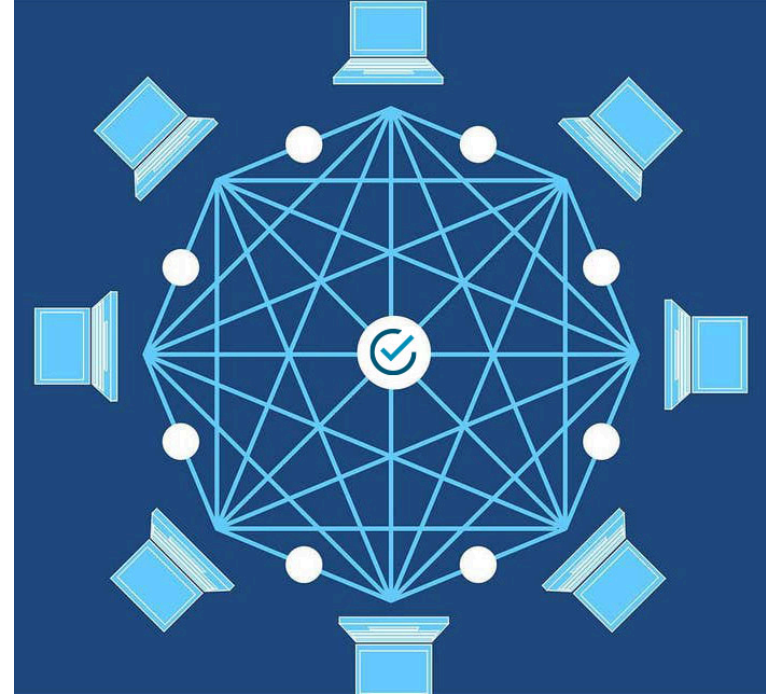
Big Data

- Data sets that are too large to be dealt with by traditional data processing software
- Millions of data points per second
- Fueled by IoT devices and other data capture mechanisms
- Analysis is difficult, but can yield valuable insight



Blockchain

- Computers work to solve cryptographic puzzles (mining)
- Solutions are used to do things like guarantee immutability, achieve consensus in distributed systems, etc.
- Applications in banking, real estate, critical recordkeeping



Cloud Computing

- Powerful compute resources maintained by a 3rd party
- Dedicated, high-security facilities not otherwise available on a budget
- Reduces IT staff and maintenance costs
- Instant procurement / scalability
- Serverless software



Enterprise Mobility

- Sophisticated line-of-business applications on your phone or tablet
- Enables complex workflows at 'the edge'
- Make decisions and catch errors in real-time
- Bring Your Own Device (BYOD)



Robotic Process Automation (RPA)

- Automation of repetitive, manual human processes
- Checking boxes, sending emails, generating reports, even customer service
- Frees your staff to do more valuable tasks



Virtual Reality (VR) / Augmented Reality (AR)

- Ability to interact with a simulation in 3D space
- Insertion of computer generated images into real space
- Applications include training, on-site support, safety
- Reduce costs with remote experts



Now take a minute to breathe

Identifying What is Relevant to You

- What problem are you trying to solve?
- Is that really the problem you should be solving?
- What is currently your company's biggest pain point?
- If you can't answer this immediately, talk to your staff

Common Pain Points

- We're spending too much time entering data into computers.
- I keep having to send techs back to the job site to fix mistakes.
- We're getting bitten by legal issues because we have incomplete documentation.
- It takes too long for us to realize failures have occurred.
- Our systems are always down.

RPA
Mobility

AR / AI
Mobility

Blockchain
Big Data

IoT / AI

Cloud
Big Data

Don't Try to Boil the Ocean!

- You might be thinking of several pain points
- Don't try to tackle them all at once!
- You can easily become paralyzed by trying to solve all your problems at once
- Find a narrow solution that solves a specific problem
- Or find a vendor who offers multiple services you can grow into

How to calculate ROI

- Figure the time it takes to do the task manually
- Multiply by fully-loaded cost of staff
- Add the cost of errors
- Repeat the calculation assuming a solution is in place
- Figure the savings from the solution
- $ROI = \frac{\text{savings}}{\text{cost of solution}} * 100$

Data Entry Example

5000 Services / month

Without
Solution

Category	Count	Cost	Total
Data Entry Staff	5	\$3,520.00	\$17,600.00
Inspectors	100	\$1,250.00	\$125,000.00
Errors (1%)	50	\$250.00	\$12,500.00
		Monthly Cost	\$155,100.00

1250 Services / month

Category	Count	Cost	Total
Data Entry Staff	1	\$3,520.00	\$3,520.00
Inspectors	25	\$1,250.00	\$31,250.00
Errors (1%)	13	\$250.00	\$3,125.00
		Monthly Cost	\$38,775.00

With
Solution

Category	Count	Cost	Total
Data Entry Staff	1	\$3,520.00	\$3,520.00
Inspectors	85	\$1,250.00	\$125,000.00
Errors (0.1%)	5	\$250.00	\$1,250.00
Licenses	85	\$100.00	\$8,500.00
Support		\$1000.00	\$1000.00
Setup		\$1000.00	\$1000.00
		Monthly Cost	\$100,270.00

Category	Count	Cost	Total
Data Entry Staff	0.5	\$3,520.00	\$1,760.00
Inspectors	21	\$1,00.00	\$21,000.00
Errors (1%)	1	\$250.00	\$250.00
Licenses	85	\$100.00	\$2,100.00
Support		\$1000.00	\$1000.00
Setup		\$1000.00	\$1000.00
		Monthly Cost	\$27,110.00

5000 Services / month

ROI

Category	Monthly	After Two Years
Cost Without Solution	\$155,100.00	\$3,722,400.00
Cost With Solution	\$89,770.00	\$2,154,480.00
Savings	\$65,330.00	\$1,567,920.00
Cost of Solution	\$10,500.00	\$252,000.00
Net Savings	\$54,830.00	\$1,315,920.00
	ROI	422%

1250 Services / month

Category	Monthly	After Two Years
Cost Without Solution	\$38,775.00	\$930,600.00
Cost With Solution	\$23,072.50	\$553,740.00
Savings	\$15,702.50	\$376,860.00
Cost of Solution	\$4,100.00	\$98,400.00
Net Savings	\$11,602.50	\$278,460.00
	ROI	183%

Lab Processing Example

Cost of Doing a Break

Step	Without Solution (min)	With Solution (min)
Find Cylinder	5	2
Break Cylinder	1	1
Enter Data	2	0
Cleanup	2	2
Total Time	10	5
Cost	\$5.00	\$2.50

ROI on Break Solution

Breaks / month	2500	250
Cost Without Solution	\$12,500.00	\$1,250.00
Cost With Solution	\$6,250.00	\$625.00
Cost of Solution	\$125,000	\$125,000
Pay Back Period (months)	20	200
ROI after 5 years	200.00%	-70.00%



Not a Good Investment!

CHOOSING PARTNERS FOR SUCCESS

What to Look for in a Vendor

- Understands your business needs
- Won't make you change your processes
- Is on the leading edge of technology, not the lagging edge
- Follows security best practices
- Can guarantee service availability and quality (SLA)
- Provides a range of services you can grow into

Things to Avoid

- Outsourcing to India
- Expensive software packages that offer no customization
- Requirements to run on legacy systems or to *not* apply updates / patches
- Unproven or experimental technology

Questions?



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