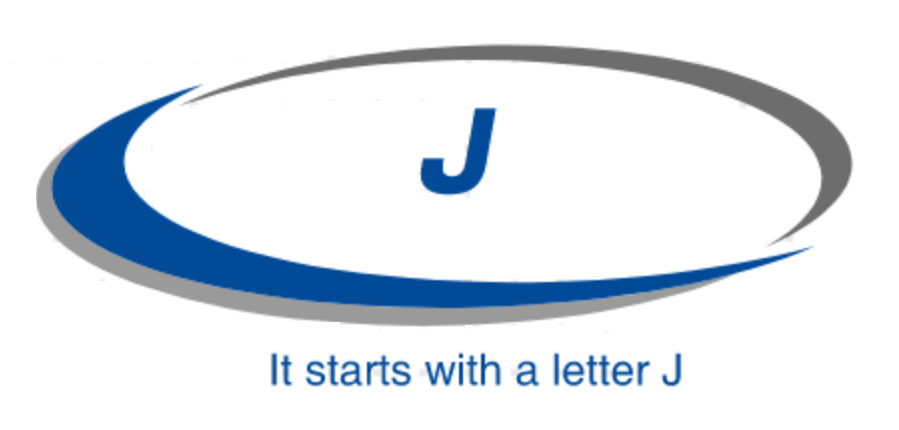
# RMIT University

# —

# COSC2196

# Introduction to Information Technology

# Assessment 2: Team Project

****Team J

**Teams Link:**

<https://teams.microsoft.com/l/team/19%3a20df69a9464942a0a04927d809cfc828%40thread.tacv2/conversations?groupId=99a57ac0-501d-4e94-9c9a-e7d9006972a2&tenantId=d1323671-cdbe-4417-b4d4-bdb24b51316b>

**Meet the team:**

**Don Vu**

Name: Don Vu

Student Number: s3398720

Background:

I am a Vietnamese decent born in Australia. I currently working fulltime and studying remotely. I have a young family with an energetic 4-year-old son that occupies most of my free time.

Education wise, I have completed my year 12 a while ago. Since then, I have completed a Diploma in Financial planning and few IT Industry Certifications (ITIL, CCNA, Azure Administrator, MSCA)

Hobbies:

I enjoy recreational fishing, playing with new IT equipment and games.

IT Interest:

The reason I chose to be apart of the IT industry, is so that I can help people solve issues using IT. I enjoy the thrill of troubleshooting the problem, brainstorming the problem and offering a solution to resolve their problems.

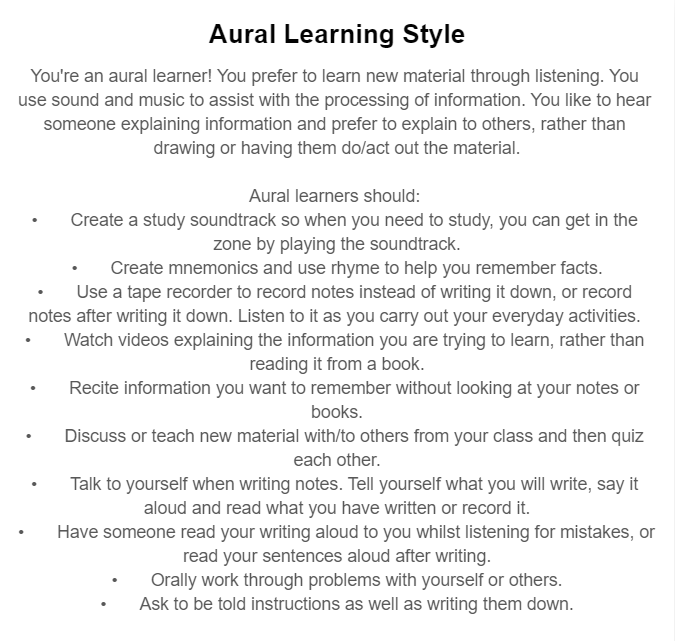
IT Experience:

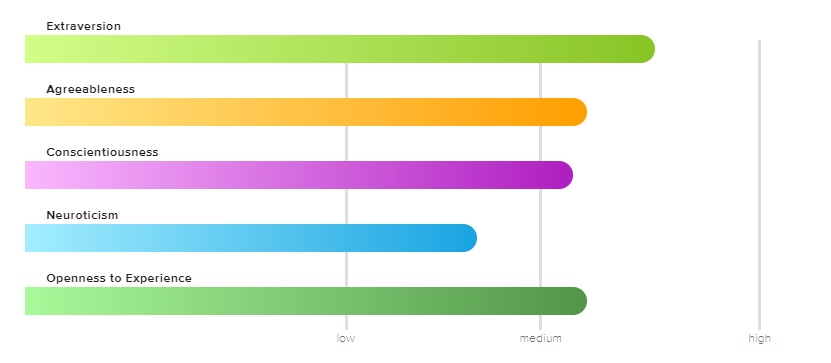
I have spent 2 years working for a logistics company as their Level 1 Service Desk Support back in 2015.

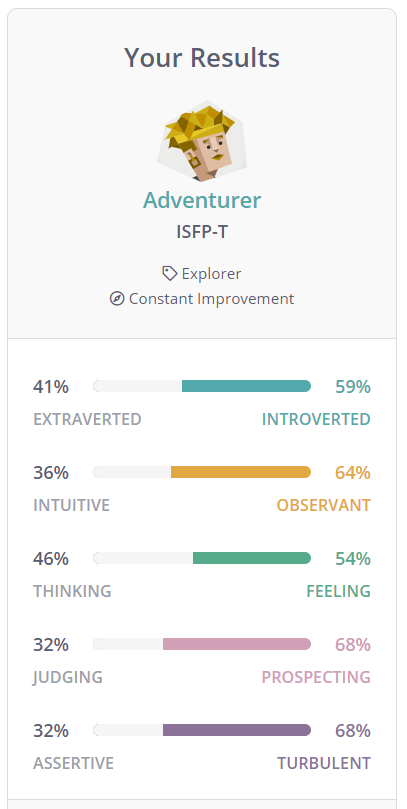
I left the industry and got back into it in 2018 when I became an IT Administrator for a private prison. There I was encouraged to peruse certification in networking, systems, cloud computing and ITIL processes.

Test Results:

I believe these test results will help the group understand me better and it should demonstrate to them what my expectation of from them as members of the group







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**James Eland**

Name: James Philip Eland

Student Number: s3909450

Background:

I am an Australian, my father is English and mother is of South African descent.

I went to Chipping Norton Public School from 2008-2014 and Holsworthy High School 2015-2020.

I speak fluent English and a bit of Japanese. I have done GKR Karate for 12 years and am the 2012 national Karate Champion. I also can swim very well; over the years I have qualified to zone swimming for 7 years straight and attended regionals once.

Hobbies:

I enjoy playing video games but favor the PS4 games over the others. I enjoy watching anime and watch YouTube particularly about rubix cubes and gaming

IT Interest:

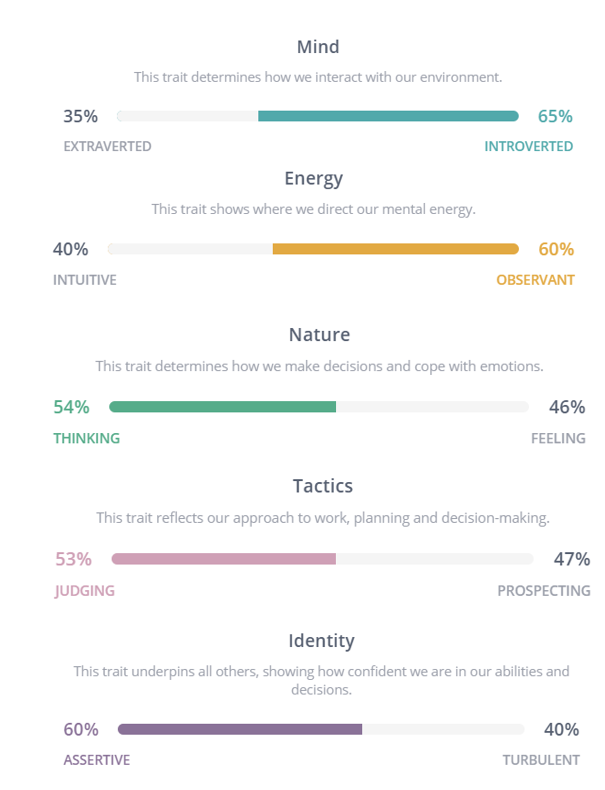
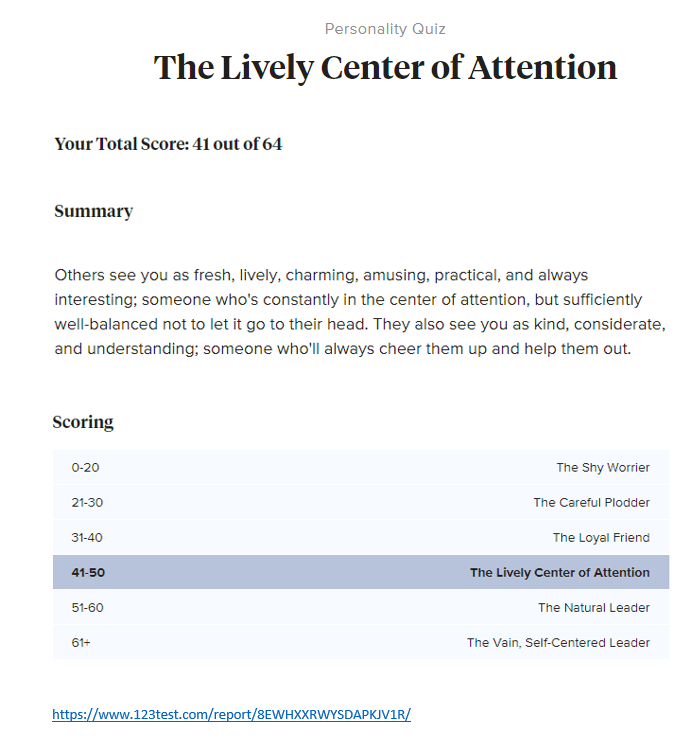
I enjoy learning about what IT can do and achieve and wish to learn more about it to help me in the future if I decide to learn about animation or game development.

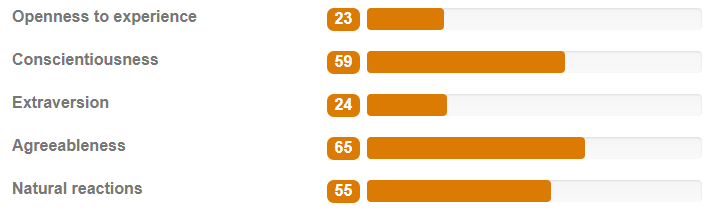
IT Experience:

I do not have any industry experience as I have recently finish school.

Test results:

I believe knowing these rest results can help me understand the dynamics of the group and shows how much leadership and self-drive I will need to show to achieve the groups goals.





**Jonathan Hazell**

Name: Jonathan Hazell

Student Number: s3908219

Background:

I am from Chicago Illinois but have spent a large amount of time in Houston Texas, where I lived and worked and my two sons where born.

I lived in a lot of Countries growing up, due to my dad job as an Engineer. My education to date, is 3 years at the University of Texas but had to drop out due to work and family obligations.

One fact, I was a commercial pilot and have logged about 15000 hours in the air.

Hobbies:

I am an ice hockey fan both watch and play and love to read.

IT Interest:

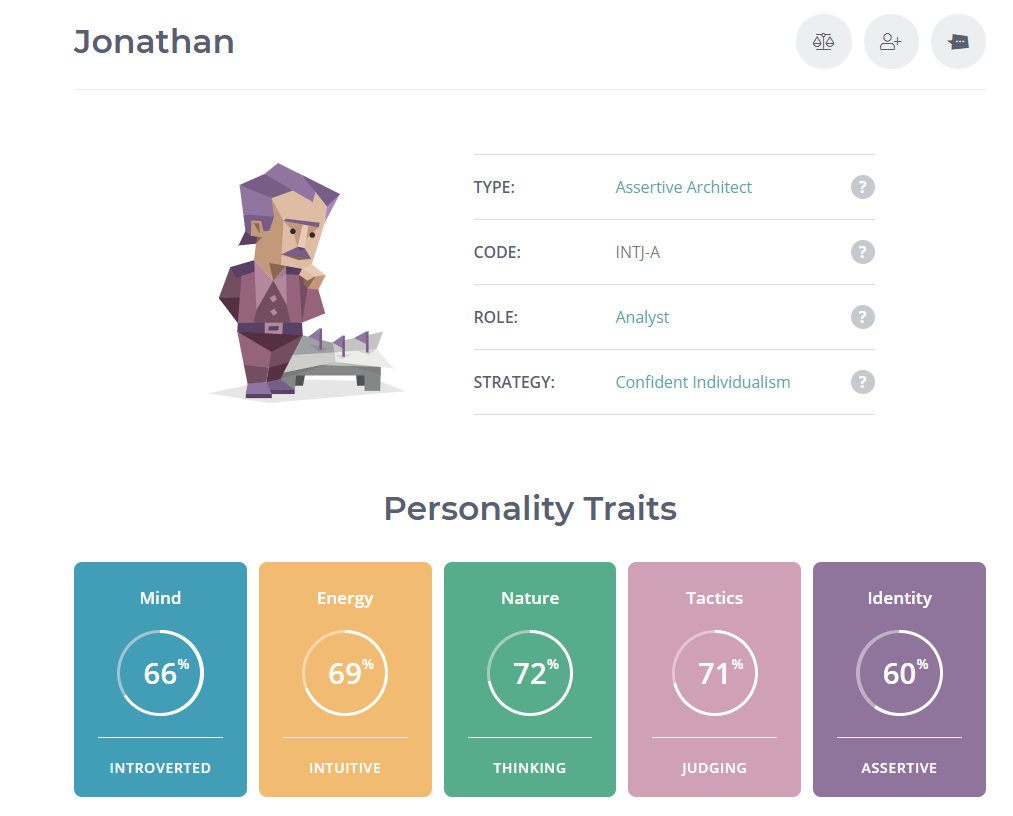
I have always been interested in how thing work and mechanical ideas. My Interest in IT started when I was about 12, when I visited my father’s office in San Francisco, and he showed me the computer department. The mainframes where fascinating. Throw in a few movies, a Commodore 64 and I was plugged into the future. I still remember the first time I used the internet, the old-fashioned way, putting the handset of your rotary phone in the modem cradle and dialing into a Usenet site. How times have changed.

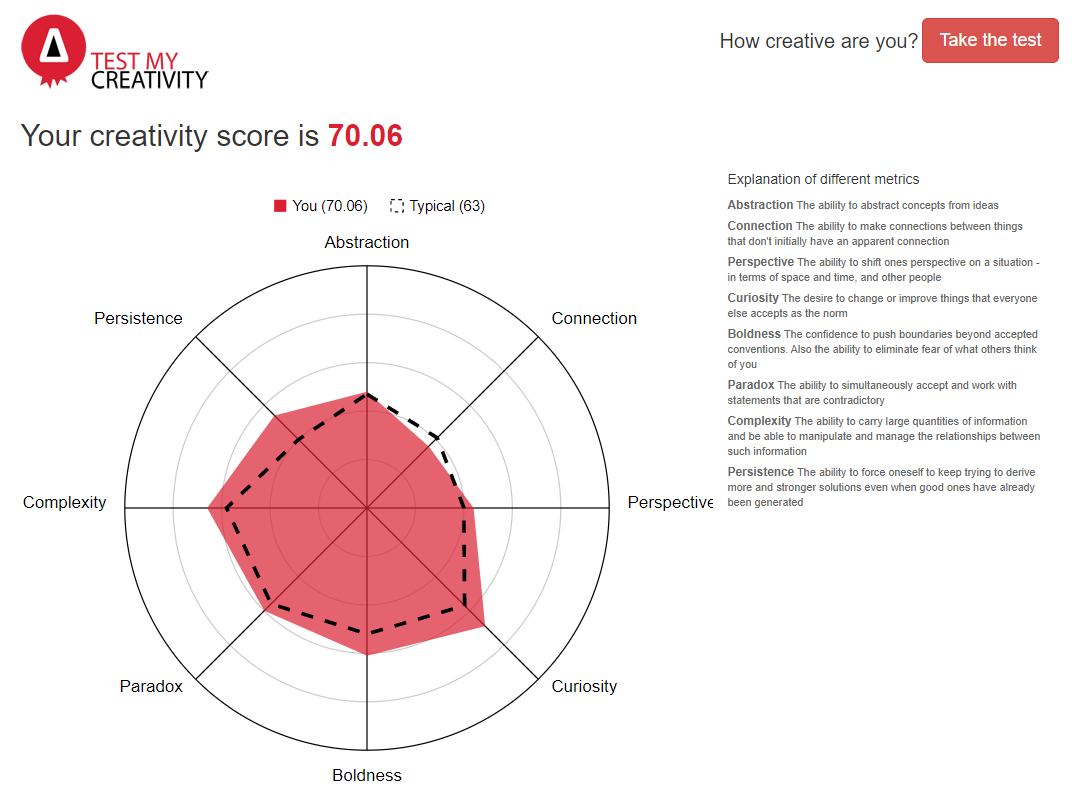
IT Experience:

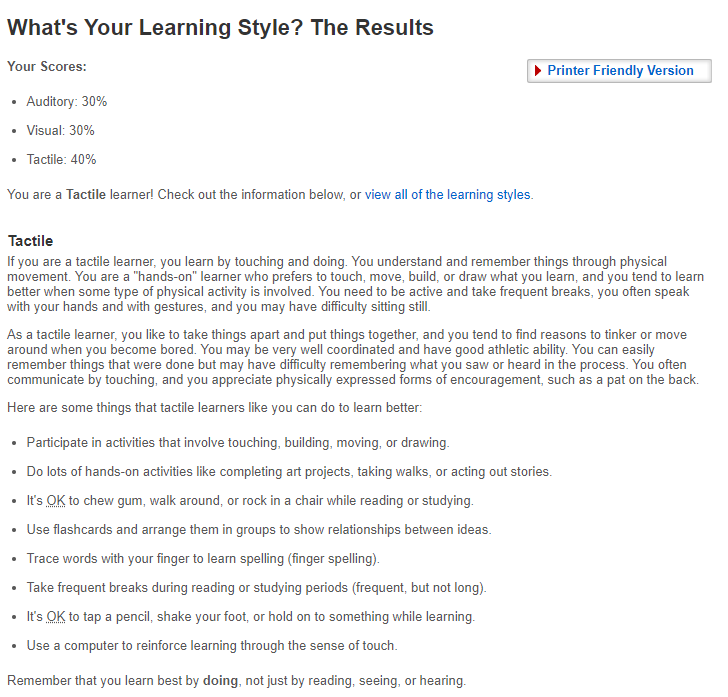
My IT experience, is 25 years as a Unix/Linux systems administrator, looking after large-scale Unix/ Linux systems, webservers, e-mail servers Network file servers etc. Worked at IBM and Texas Instruments in Texas, and AT&T in Chicago.

Test Results:

In my opinion I am not a believer in these kinds of personality test. I believe the results are greatly influenced by how my mood is for that day. If I am in a good mood, bad mood, aggressive. But overall, I think the best way for the team to understand me and know how I work is to talk with me and lay out team expectations







**James Parker**

Name: James Parker

Student Number: s3905759

Background:

I come from a background of sales and marketing, specialising in social media influencer marketing. This job revolves around my main hobby which is bodybuilding

Hobbies:

Bodybuilding

IT Interest:

The interesting aspect in IT that has caught my attention is it made me realize how important IT is to the future and the development of the society. I believe that the advancement of IT and technology will be the prerequisite for the further advancement of technology and knowledge. This is the reason I wish to partake and contribute to this.

IT Experience:

My experience in IT is just beginning with this degree, as my only prior experience was in high school to a small degree.

Test Results: I am fairly neutral regarding this but the group may note my learning language test results as it shows how I retain information best.

Myer Briggs - ENFJ

Learning Language;

- Auditory: 30%

- Visual: 40%

- Tactile: 30%

Big 5 Factors;

Extraversion - 90

Neuroticism – 94

Agreeableness - 83

Conscientiousness - 62

Intellect – 46

**Stefan Siotos**

Name: Stefan Siotos

Student Number: s3894025

Background:

My father is a first-generation immigrant whose parents came from Greece and Australia, and my mother is Australian I have a pretty standard Australian culture at home with both parents only speaking English.

My education is year 12 VCE at Bellarine secondary college and I enrolled into Engineering course in Deakin and completed the first year but it did not interest me. I later changed courses and completed the first year of Commerce at Deakin University as well.

On the right, is my beloved Denvor, a German short hair pointer.

Hobbies:

My hobby is spending time with my Devor. His favorite hobby is chasing frisbees which is perfect for me as I play disc golf casually on weekends so when I am practicing, I don’t have to go and pick up my disc because Denver brings them back to me

IT Interest:

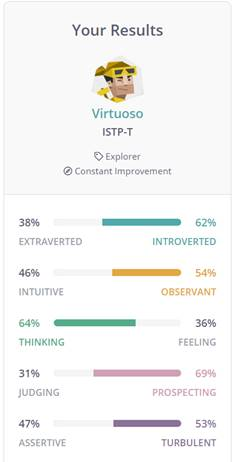
My interest in IT started in 2004 when I first playing RuneScape, I played for many years on and off. Although a video game is what first peaked my interest in computers and IT it has continued to grow, recently the inspiration of my interest in IT has been from the lex fridman podcast https://www.youtube.com/user/lexfridman I am interested in all areas of IT but lately been more focused on Machine Learning and AI.

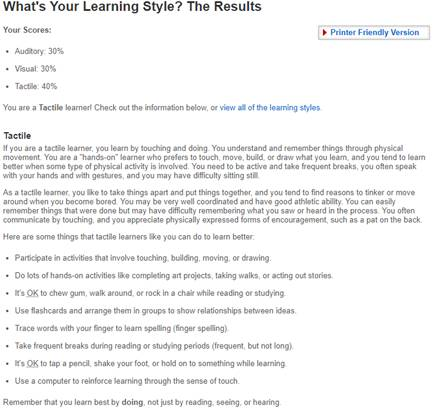
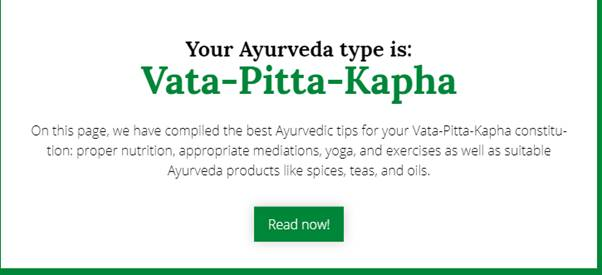
IT Experience:

My It experience has been in a recreational setting as well as a professional. My recreational Experience ranges from hobbies such as Arduinos and setting up servers for video games I.e (Minecraft) and my professional experience ranges from helping vet new software for the law firm that I was working at and acting as a first point of contact for IT support.

Test Results:

This will help the group realize I tend to stress and my emotions become turbulent. They will need to keep this in mind and keep my emotional levels in check to ensure I am calm and thinking straight. This will help me and them achieve our united goals.





**Jordan Uhe**

Name: Jordan Uhe

Student Number: s3907253

Background:

Hello, I am Jordan Uhe, I was born in Traralgon Australia (about 2hrs east of Melbourne) and I am 18 years old (as of 2021), my family has German, Swiss and English roots, with my ancestors migrating to Australia in the early 1900s. Although that is where my family comes from, I have little connection with those cultures apart from some of my relatives still living there. I have graduated from Lavalla Catholic College in Traralgon in 2020 earning myself a VCE certificate and am currently working towards a Bachelor of Information Technology at RMIT.

Hobbies:

I am an active member of the Traralgon Tennis Club playing every Thursday night and I have done so for over 5 years, sadly not winning any finals; I have also helped the club out with working bees and setting up for tennis tournaments. Apart from tennis I used to play soccer for Olympian’s soccer club, and with them I have been a part of 3 grand final winning teams, sadly I am not currently playing with them because work and study has taken up too much of my time.

IT Interest:

My Interest in IT was sparked by my father who brought home 3 old computers from work as a Christmas gift for me and my brothers. Being given a computer with nothing on it led me to playing the default games loaded on it (pinball and solitaire) but there is only so much of those games you can play without being bored. This led me to messing around downloading stuff from the internet, and eventually getting a virus, this virus made my poor computer unusable, and I was too embarrassed to confess what I had done to my parents, so I learned how to reimage a computer, and that’s where my love for computers and problem solving started

IT Experience:

As I am fresh out of high school, I do not have any professional IT experience. My experience involves me exploring with the computer my father gave me and researching on different capabilities computers can do.

**Ideal Job Analysis Matrix**

To view in-depth analysis according to the matrix, please click on the links in the boxes below

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| VS | Don Vu | James Eland | James Parker | Johnathan Hazell | Stefan Siotos | Jordan uhe |
| Don Vu |  |  |  |  |  |  |
| James Eland | [Analysis 1](#_Analysis_1_1) |  |  |  |  |  |
| James Parker | [Analysis 2](#RANGE!_Analysis_2) | [Analysis 6](#RANGE!_Analysis_7) |  |  |  |  |
| Jonathan Hazell | [Analysis 3](#RANGE!_Analysis_3) | [Analysis 7](#RANGE!_Analysis_8) | Analysis 10 |  |  |  |
| Stefan Siotos | [Analysis 4](#RANGE!_Analysis_4) | [Analysis 8](#RANGE!_Analysis_9) | Analysis 11 | Analysis 13 |  |  |
| Jordan uhe | [Analysis 5](#RANGE!_Analysis_5) | Analysis 9 | Analysis 12 | Analysis 14 | Analysis 15 |  |

To view members ideal job, please click on the link below

* [Don Vu’s Ideal Job](#_Don_Vu’s_Ideal)
* [James Eland’s Ideal Job](#_James_Eland’s_Ideal)
* [James Parker’s Ideal Job](#_James_Parker’s_Ideal)
* [Jonathan Hazell’s Ideal Job](#_Johnathan_Hazell’s_Ideal)
* [Stefan Siotos’s Ideal Job](#_Stefan_Siotos’s_Ideal)
* [Jordan Uhe’s Ideal Job](#_Jordan_Uhe’s_Ideal)

# Analysis 1

What common elements are there, if any?

Both roles work closely with SLA and ITIL procedures. Both looks at resolution capabilities but at different levels. The expectation of the two roles is similar yet different at the same time.

What differentiates each position from the others, if anything?

Don’s ideal job classifies to be a senior management role where there are more responsibilities and people management as well as high tier escalation points. Don’s Operations manager role is the point of escalation from Tier 1 and Tier 2.

Compared to James role, as an Analyst he is responsible for Tier 1 and Tier 2 as well as project work. James’s role has a broader coverage of the business and tends to resolve issues internally; whereas Don’s role is to escalated the issue to relevant vendors and work with them to resolve the issue as it cannot be resolved internally.

# Analysis 2

What common elements are there, if any?

Both Don and James ideal role belong to the management cluster. They are usually appointed to people with 10 plus years of experience in management. Not only are they expected to fulfil their own SLA but they need to manage their teams and external vendors to completed set projects and tasks.

What differentiates each position from the others, if anything?

Don’s role includes managing service providers and becoming an escalation point for Tier 1 and Tier 2. Overall, still working closely with the floor to achieve and resolve issues. James role however, looks at innovation and ways to improve the business in regards to IT.

# Analysis 3

What common elements are there, if any?

Between Jonathan and Don’s ideal job there isn’t much of a common element. Overall, the skills and experience are required in both roles. There is a common ground in all recent IT positions whether it be managerial or administrator; the need to understand and practice ITIL is expected as a base line knowledge for anyone entering the industry.

What differentiates each position from the others, if anything?

The most obvious differentiation that is evident between the two positions is Don’s role is a managerial role and Jonathan’s role is an Administrator role. Managerial role is more of a middle man between escalation points internally or external vendors. Whereas an Administrator role will resolve the issue internally or be the first point of escalation

# Analysis 4

What common elements are there, if any?

Common element between the two positions is they both require to engage with the user. They both work with the user in a specialized way to achieve the desired outcome. Although with Stefan role it is a specialist role but the same concept can be applied to Don’s managerial role as well.

What differentiates each position from the others, if anything?

As mentioned before Stefan role is a very specific and specialist role that cannot be taught or trained anywhere else. Its very specific focus on supporting the scientific team to achieve their outcome. Whereas Don’s role focuses on high level resolution with external vendors to achieve the best results for the business.

# Analysis 5

What common elements are there, if any?

Both of the roles fit the mangers profile. Both looks at issues that require reevaluation, designing and implementing new solutions to achieve an outcome.

What differentiates each position from the others, if anything?

The thing that differentiates the two positions is that one focuses on cloud solution and other focuses on a broader aspect of IT. It can be infrastructure, cloud or anything that Tier 1 and 2 can escalate up to the operations manager and he will need to liase with the specialist to accommodate the solution.

# Analysis 6

What common elements are there, if any?

There is not much common in these two jobs in comparison. They are on opposite sides of the spectrum and as such are difficult to compare between an analysist role and a project manager role.

What differentiates each position from the others, if anything?

One is focus on Tier 1 and 2 ground floor issues and the other looks at projects. These two roles

# Analysis 7

What common elements are there, if any?

The common elements in these two jobs from Jaems and Jonathan is that they both are Tier 1 and 2 based. They focus on issues that users experience on the floor and hope to resolve it within an agreed time frame.

What differentiates each position from the others, if anything?

The difference between the two position purely resides in the nature of the role. One focuses on Linux based systems with Tier 1 and 2 support. Other focuses on infrastructures and CISCO devices.

# Analysis 8

What common elements are there, if any?

Both roles look at supporting end users on the floor. It looks at issues that may arise that will affect the users and work out a solution for the users.

What differentiates each position from the others, if anything?

In Stefan’s ideal job, it shows that his role requires him to develop additional software and application to cater for the needs of his users. Whereas James role looks at supporting and escalation points.

# Analysis 9

What common elements are there, if any?

Between the two roles, there are very little to no common elements between the two.

What differentiates each position from the others, if anything?

Once again, the two roles are different as one is a role is an administrator role and the other is an operations manager role. Not only do the scope of the position are incomparable but the nature of the work is difficult to compare.

# Analysis 10

What common elements are there, if any?

Minimal common element between the two position.

What differentiates each position from the others, if anything?

James’s role is a Senior Project Manger as his role focuses on project development, monetary budgeting, commissioning, designing etc.…whereas Jonathan role is an Administrator role that is design to respond to issues from end users and prevent issues from occurring by monitoring and updating systems.

# Analysis 11

What common elements are there, if any?

The common elements in these two roles although they are on different levels, is that they both develop and implement solutions for the end user.

What differentiates each position from the others, if anything?

Stefan’s role is a very unique and specialized role, James however focuses on project development and budgeting. The two positions focus on different aspect of the IT life, Project needs to be designed and completed and used before Stefans role can be placed in to support and uphold the system.

# Analysis 12

What common elements are there, if any?

Common element between the two roles is that they both are in the senior management area. They both plan, design, implement and manage resources and budget to achieve the solution

What differentiates each position from the others, if anything?

The only different element between the two is that one is a cloud based service provider and the other is a general project manager.

# Analysis 13

What common elements are there, if any?

Common elements between the two roles here is that both roles work very closely to the end user. They are expected to develop and assist their end users use the system to the best potential.

What differentiates each position from the others, if anything?

Both roles are very specialized and unique in their fields. Stefan role will be very unique and incomparable to others as it’s a specialist role that you will not see in other IT fields.

# Analysis 14

What common elements are there, if any?

The two positions are very different from one another.

What differentiates each position from the others, if anything?

Jonathan’s role works off the ground with the end user. His role requires him to resolve user issues, monitor systems and perform upgrades/patch work etc. Whereas Jordan’s role is a Clouds operations manager where planning and development is the only aspect his role will focus on.

# Analysis 15

What common elements are there, if any?

No common elements evident.

What differentiates each position from the others, if anything?

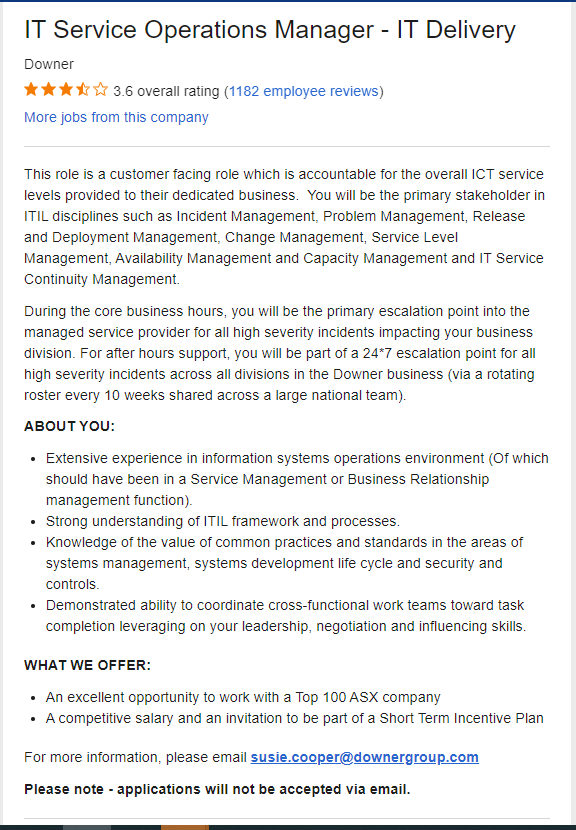
The different elements between the two roles here is one is a specific specialize role that incorporates troubleshooting, developing and implementing. Whereas Jordan’s role is a Clouds operations manager where planning and development is the only aspect his role will focus on.

# How similar or different are your career plans across the group?

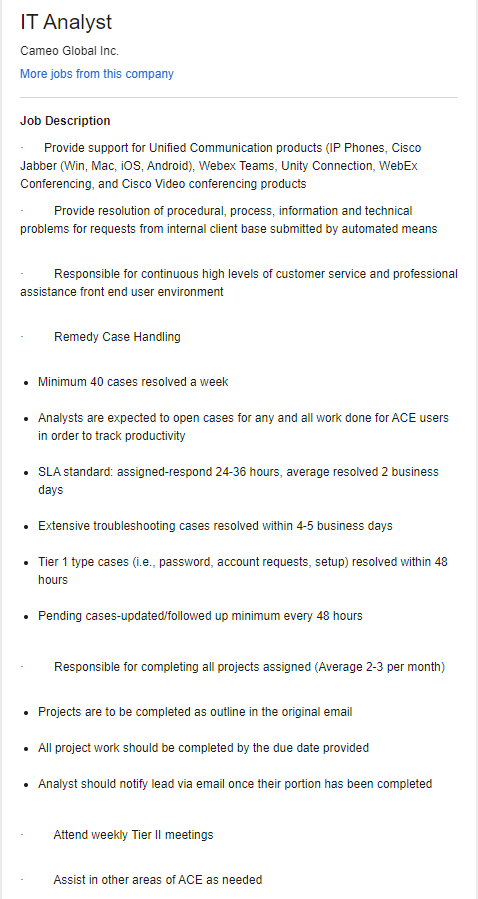
Overall, the groups career plans is very diverse, we have members whom are aiming for administrator roles, specialist roles, managerial roles and even senior management roles. The group dynamic is so complex as many of the roles are in different specialization fields within IT. There are similar elements in some members but at the end of the day the final destination goal is to achieve our desired jobs.

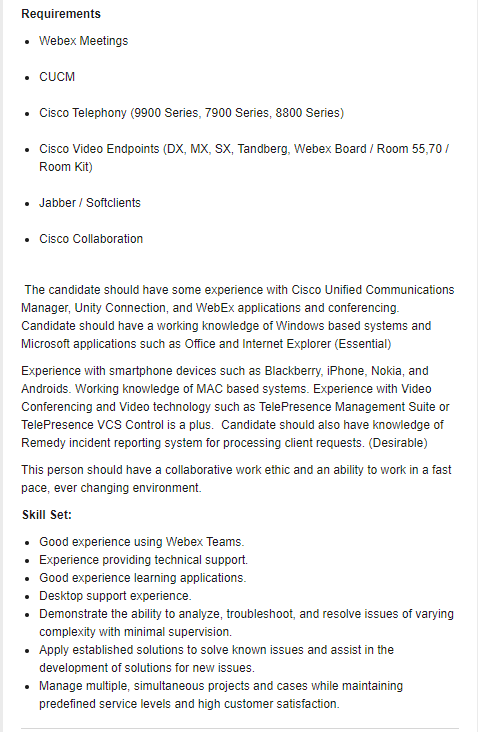
**Ideal Job Page**

# Don Vu’s Ideal Job



# James Eland’s Ideal Job



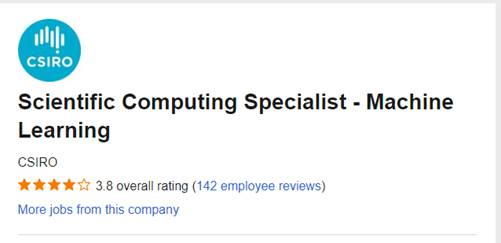


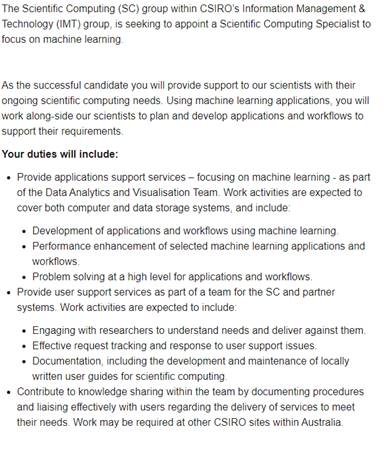
# James Parker’s Ideal Job

# Johnathan Hazell’s Ideal Job



# Stefan Siotos’s Ideal Job





# Jordan Uhe’s Ideal Job

Cloud Operations Manager

• A description of the position

This position involves managing cloud services infrastructure and integrating it into existing ICT services. It also involves making plans on how cloud systems would be operating, designs and implemented as well as making sure the servers follow security regulations.

There is also some troubleshooting of hybrid cloud environments which can be mission critical.

I have always found Complex systems fun to try and simplify and fix, which means a mess of cloud servers would be a challenge which I might find fun. I aspire to be a manager of a department or at least high in the chain of command, so a manager position is appealing.

• skills, qualifications, and experience required for the position.

-Experience and skills in cloud operations, server Management, user privileges, computer use monitoring, and systems automation.

-Excellent communication and negotiation skills, with the ability to simplify complex ideas so that laymen can understand

-Ability to think about and imagine different possibilities and transform them into a reality which can be produced by other people

-The ability to work around strict conditions such as limited resources

-Able to negotiate and communicate effectively with clients and contractors

Industry Data

General skills highlighted yellow

James Eland – IT Analyst – Rank 5

Skills:

* Good experience using WebEx Teams. - No rank
* Experience providing technical support. . - No rank
* Good experience learning applications. . - No rank
* Desktop support experience. . - No rank
* Demonstrate the ability to analyze, troubleshoot, and resolve issues of varying complexity with minimal supervision.  Rank – 2, 7.
* Apply established solutions to solve known issues and assist in the development of solutions for new issues. Rank - 2
* Manage multiple, simultaneous projects and cases while maintaining predefined service levels and high customer satisfaction. Rank – 13.

Don VU – IT Service Operations Manager – Rank 192

Skills:

* Extensive experience in information systems operations environment. - No rank
* Strong understanding of ITIL framework and processes. - No rank
* Knowledge of the value of common practices and standards in the areas of systems management, systems development life cycle and security controls. . - No rank
* Demonstrated ability to coordinate cross-functional work teams toward task completion leveraging on your leadership, negotiation and influence skills. – Rank 5, 11

James Parker – Senior IT Project Manager – rank 67

Skills –

* Communication skills – rank 1
* Leadership skills - rank 11
* IT experience – ranked 16 in general

Jonathon hazel – System Administrator (Linux) – Rank 8.

Skills:

* Day to Day management of Linux environments – Rank 7
* Linux Management: RedHat Enterprise Linux - Rank 7
* Networking: Virtual Network Infrastructure - rank 52
* VMWare Virtualization technologies - rank 141
* Australian citizen
* Practical experience in the configuration and management of Administration and monitoring ICT systems
* Cyber security toolsets
* Development and maintenance of Standard Operating Procedures and ITIL practices.

Stefan Siotos – Scientific Computing Specialist – Machine Learning Role – No rank

Skills:

* Experience with programming languages such as Python, R, JavaScript, MATLAB, Fortran, C, and C++. – rank 2, 12, 22, 166, 101,
* Experience using machine learning applications Computer vision, Natural language or a tradition tabular data-based ML algorithms. – no rank
* A tertiary degree in either science, engineering, computer science, information technology or a relevant field. – no rank

The three highest ranked IT skills that are not in our skill set are SQL(rank 1), Microsoft Windows(rank 3) And Microsoft c#(rank 5)

And the three highest ranked general skills are Communication skills(rank 1), Organisational skills(rank 3) and Writing(rank 4).

Having looked at the burning glass data my ideal job hasn’t changed, this is because even though my ideal job may not be the most in demand, I would be happy doing other things until the opportunity arose itself. So I don’t see a point in focusing on something I am less interested in when a lot of the skills are transferrable anyway for example going from a PHP developer to a web developer a lot of the skills and networking you will do in both jobs will be similar.

Jordan Uhe – Cloud operations manager

Skills:

* Experience and skills in cloud operations, server Management, user privileges, computer use monitoring, and systems automation.(rank 158
* Excellent communication and negotiation skills, with the ability to simplify complex ideas so that laymen can understand (rank 1)
* Ability to think about and imagine different possibilities and transform them into a reality which can be produced by other people (rank 4)
* The ability to work around strict conditions such as limited resources (rank 13, rank 19)
* Able to negotiate and communicate effectively with clients and contractors (rank 1)

The three highest ranked IT skills that are not in our skill set are SQL(rank 1), Microsoft Windows (rank 3) And Microsoft c# (rank 5)

And the three highest ranked general skills are organisational skills (rank 3), Writing(rank 4) and Planning (rank 7)

Having looked at the burning glass data my ideal job hasn’t changed, this is because even though my ideal job may not be the most in demand, I would be happy doing other things until the opportunity arose itself. So I don’t see a point in focusing on something I am less interested in when a lot of the skills are transferrable anyway for example going from a PHP developer to a web developer a lot of the skills and networking you will do in both jobs will be similar.

IT Work

\*\*\*\*\*\*\*\*\*\*\*\*Interview\*\*\*\*\*\*\*\*\*

**IT Technologies**

**Autonomous Vehicles**

There are currently around 40 companies working on autonomous vehicles including automotive heavyweights like Toyota, Audi and Honda as well as tech heavyweights like Tesla, Waymo and Comma. Ai , for the sake of simplicity we will be focusing on only two companies as who are taking different approaches to self-driving vehicles and are at different steps along the way. The Society of Automotive Engineers have released a 6 Level system for defining what level of automation a vehicle has. ( SAE 2018, sec1 , paragraph 1) The levels are represented as a level 0 which is a vehicle that has 0 self-driving features and the driver is still in control of the vehicle and a level 5 is represented by human driving being completely eliminated and do not require human attention.

We will start by talking about Tesla a company that many know as the “King” of electric and self-driving vehicles. In October of 2016 Tesla released an article stating that all of the cares produced will no have the hardware to enable level 5 autonomy although the software was not quite ready. (Tesla Team 2016, Sec 1, paragraph 2) In the article they state that they will further calibrate their self-driving system by using millions of miles of real world driving experience taken from the users. Currently they are at level 4 on the SAE Rating system however Elon Musk CEO of Tesla Motors believes that they are very close to level five autonomy and believed that they would have the basic functionality of level 5 autonomy by the end of 2020 and that there are no fundamental challenges left of reaching that level (Elon Musk 2020, 1:00). Some of the Hardware developments that were required for level 5 autonomy were the development and improvement of Tensor processing units (TPU) which are designed to make neural net training and predictions a magnitude faster. The way Autonomous vehicles use deep neural Networks (dnn) is by feeding the neural network information from various sensors which are fed through a neural network to make sense of the environment and then create a decision on how the car should behave.

The second company I will be talking about is Waymo which began as googles self-driving car project in 2009 its mission statement is to make it safe and easy for people and things to get where they’re going. Currently waymo believes that they are at level 4 autonomy meaning that no human driver is necessary in there defined operational conditions (Waymo 2021) . Waymo works by first going into a new area or city and maps the area including details like stop signs and cross walks and then instead of relying on data such as a gps it uses its detailed maps and sensor data to determine its current location. Waymo currently has two services a Ride Hailing Service and a Truck service. Some of the Sensors that Waymo uses to feed data to its custom neural networks are Lidar, Cameras and radar. As well as many backup systems a secondary computer and backup collision detection systems in case the primary systems fail. One of the problems that waymo currently has is that they rely on their detailed maps so as you start mapping bigger areas this turns into a large challenge. Waymo are also using a TPU after partnering with google brain to train their Machine learning algorithms.

The development of autonomous vehicles will has the potential to have large impacts on many industries and the general public. In a study by the university of Michigan they believe that the number of vehicles owned per household could reduce up to 43 % (Brandon Schoettle and Michael Sivak 2015, section 1 paragraph 1) This reduction in vehicles could have large impacts on the automotive industry as the number of vehicles needed to service the population would be reduced due to return home features of self-driving vehicles. Another potential impact is on industries like mining where autonomous vehicles (avs) can operate in areas that are high risk by taking out the drivers which will increase worker safety and productivity this however also will displace many people who work in industries that rely on someone controlling a vehicle, This will also effect industries like farming, truck driving and ride sharing services or taxi companies that can rely on AVs to do the job instead of human operators. The people who will be most effected are the people who work in these industries as the US department of commerce believes that 15.5 million U.S workers are employed in occupations that could be affected by the introduction of AVs (US department of commerce 2017) there are also some new jobs being created from the development of AVs, an example is at Waymo when one of their AVs comes up to a situation that it doesn’t know how to deal with it will send the information out to a human who then makes the decision on how the car should proceed this happens when an unusual occurrence happens such as road work or a police officer directing traffic.

As AVs continue to develop and become more available my life and the life of my friends and family will be affected in a multitude of ways. One of the ways it will affect me is by the large displacement of the work force who will lose their jobs to AVs these people will need to find new jobs and careers and will increase the amount of competition for various careers, a number of new jobs will also be available which could impact which career I end up in the future. Another positive way it could affect me and my friends is the possibility of longer commutes to work being less time consuming as you will be able to do other things while you drive, such as catching up on sleep or reading. This will make jobs in areas outside of where I currently deem an acceptable commute to become more attractive opening up the number of jobs I can target.

Some of my Family members are elderly so AVs could change their lives dramatically as they are losing confidence driving some of them are stuck to public transport and being from a rural town that dramatically increases the times that they can travel to the places they want to go and will reduce the time that it takes them to travel to places. As with AVs they may not even need to have a licence to be able to drive a car. This will also impact people with disabilities who aren’t able to drive and have to rely on taxis or public transport, while I was working one day a lady came in who could no longer drive and she had to cancel her appoint 2 times due to no taxis being available nearby to take her to her appointment, I’m sure if you asked her what she thought about a car that she could own that would be able to drive itself she would be over the moon.

**Cloud Computing**

Cloud computing is one of the buzz words in today technical jargon, as indeed it should be, as the capabilities of cloud computing are endless. Most people think that cloud computing is a relativity new concept dating back the last 10 to 15 years, but this is not the case. Let us take a brief look at the history of cloud computing. Since the 1950s, due to the prohibitive costs of mainframes and computers organizations have been using a more complex and ever-changing ideas to process their data. To do this they implemented the idea of time sharing, where several users could access the mainframe from there dumb terminals (terminals with no processing power) and utilizing the maximum efficiency of the mainframe. Sharing the power of the mainframe by many remote users was the foundation of the cloud computing. The idea of sharing resources continued throughout the fifties until the 60’s when an American computer scientist named J.C.R. Licklider came up with an idea for an interconnected system of computers. The idea of interconnected computer systems was taken up by a division of the American military called The Defence Advanced Research Projects Agency. DARPA was asked by the US Government to create a network of connected computers that could talk to each other and keep government departments connected in the case of nuclear war. This revolutionary idea helped Bob Taylor and Larry Roberts develop something known as ARPANET (Advanced Research Projects Agency Network). This was mainly a series of connected computers located at the department of defence and a number of Universities such as Cal Tech and Berkley. The internet or ARPA net grew into a worldwide network of computers spanning the globe, giving everyone cheap access to processing power and Web. This has led to the development of the cloud and the services it provides. There are three types of cloud types, **Public Cloud** which is owned and managed by a combination of businesses, universities, government organizations and their services are shared among multiple customers. **Private Cloud**, where the cloud service is not shared with any other organization and **Hybrid cloud** which refers to a mixed computing, storage, and services environment comprised of on-premises infrastructure, private cloud services, and a public cloud. There are several major Cloud providers today, Amazon Web Services, Microsoft Azure and Google Cloud Platform to name the biggest of the cloud companies. In this article will discuss AWS or Amazon Web Services, since it is not only the biggest but also considered to be the forerunner of cloud services.

So, what does this all mean for businesses, organizations in general. Cloud providers such as AWS basically provide on demand delivery of IT resources a service in that they basically provide the hardware, software, data storage, databases and networking to companies or institutions to use for a price, of charged as per instance or when you actually use the services. This in turn means that companies do not have to buy physical data centres and servers, networking, data storage, data processing, computing power and software licences. Nor do they have to worry about the upkeep of these systems or hiring people with technical expertise, AWS can provide all this and more as a complex ever evolving infrastructure in 3 major services categories, infrastructure as a service (IaaS), platform as a service (PaaS) and packaged software as a service (SaaS).We will touch briefly on each one as well as the other services Amazon offers.

Infrastructure as a service (IaaS), is basically what it says, you avoid the expense and complexity of buying and managing your own physical servers and other data centre infrastructure. Each resource is offered as a separate service component, and you only need to rent a particular one for as long as you need it. In addition, it quickly scales up or down rapidly meeting your organizations needs and you only pay for what you need. Its basically the foundation for the other service.

Platform-as-a-service (PaaS) is a service that delivers a platform to clients, enabling them to develop, run, and manage business applications without the need to build and maintain the infrastructure such software development processes typically require.

Software as a Service (SaaS) is a cloud service where instead of downloading software to your desktop or business network to run and update, you instead access a wide range of software applications, business application, communication applications via an internet.  SaaS offers lower upfront costs than traditional software download and installation, making them more available to a wider range of businesses, and the advantages this brings. Since it runs through a browser you do not have to worry about hardware and software compatibility, patching, upgrades and maintenance. AWS Elastic Beanstalk offering is an easy-to-use service for you to deploy web applications and services developed with Java, .NET, PHP, Python, Ruby, on familiar webservers servers such as Apache and Nginx. You can simply upload your code from a Git repository and Elastic Beanstalk automatically handles the deployment, provisioning, load balancing, auto-scaling to application health monitoring. At the same time, you retain full control over the AWS resources powering your application. These are just some of the services AWS offers, there are many more, block chain, compute, web hosting, IOT (internet of things), databases, game development, Quantum Computing and Technologies. This is a rapidly developing field, with many advances being developed every day. As you can see cloud services depends a lot on network infrastructure, bandwidth and download and upload speeds are critical. Advances in wireless such as 5G and greater are critical to cloud services, as are advances in the speeds of the physical servers in the Data Centres that so much of this relies on. The faster the servers and support equipment is the faster everything will work. The processing power of Quantum Computers being developed by Google and others well offer great leaps forward in the quality and speed of service. The advances made in artificial intelligence will play a major role in creating new algorithms that can improve on cloud throughput, load balancing and sequencing.

The affects of cloud services are many and will eventually affect all aspects of business and industry. It is reshaping technology. Companies no longer have to purchase expensive hardware or maintain in house systems they can simply buy time on AWS, they no longer have the cost and overhead of application development, it can all be deployed in the cloud. Companies can move so much of there services online, banks being a prime example. I use several online banks, that have no physical stores. Development and design of manufactured items can be moved to the cloud using Cloud compute and machine learning as can supply chain. Media, human resources and government departments and functions can all be replaced by cloud services. This is going to affect people’s jobs, companies are not going to need as many IT staff, companies that can move a lot or all their services to the cloud and online will downsize and reduce physical staff, less office space to be leased, assembly line workers can be replaced by robots run from the cloud, driverless cars and delivery trucks. Cloud companies such as Sales Force or SAP can take over all a company’s services such as accounting, pay role and many others. On the other end of the spectrum researchers, engineers, scientists will be in demand developing the next cutting-edge technology as cloud services continue changing and evolving. A simple example of how cloud architecture can change a whole business model is Amazon online shopping. It not really a matter of what cloud technologies will change, its more a matter of what it will not change.

The cloud affects my life in multiple ways, just about everything I do involves the cloud in some way or another. I am writing this article on Office 360 a cloud-based app, it stored on a cloud server, I am accessing it through a cloud-based web browser. I bank online, I use a cloud-based map to get around, I do all my shopping online, my movies and my music are from a cloud-based service. I administer Linux servers located on a cloud somewhere in the world. Everyone, my friends, colleagues, family all utilize a cloud-based service at some point during the day, we communicate through SMS, WhatsApp, WeChat. The only way to avoid this would be to disconnect from the internet and live in the woods. Even then I am not sure if that is possible. As technology progresses and the internet and cloud services become cheaper and faster and more sophisticated everything will be connected to the cloud and everyone will utilize some form of cloud-based service. It will no longer be a cloud more like a hive mind.

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