Combined Analog Analysis: A Technique for Identifying Technology and Stakeholders for Cloud Businesses

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The Cloud is a new world of its own – unlike anything seen before and potentially even unimaginable – where performance, convenience, and benefits outrace logos. But beware, many technology companies promise to deliver incredible results using the cloud with few specifics beyond their own technology. It is in their self-interest and not necessarily yours to do so because that's how they make their money. Such a myopic perspective blocks how to best view the true cloud since The Cloud is the ethereal clump of collaborative electrons where people's actions and philosophies collide with the unintended consequences of every and all technology interacting ubiquitously. Restricting oneself to one particular type or stack of technology (especially one's own) slows the journey to The Cloud; get your business to The Cloud faster by accepting that The Cloud is an already existing, immersive, seamlessly interactive, and technology-brand-neutral ecosystem where you can do whatever you want.

To put your business mission in The Cloud, begin with the premise that everything you want to do can be integrated with access to whatever technology you need, on demand, in ways that work transparently for you and your customer.

Seriously.

Unless you are truly a visionary with a firm grasp on what you think tomorrow looks like, you likely have no idea which technology, or whose, will be able to do what tomorrow, let alone next week, next month, or next year. Even if you truly **are** that visionary, you may ***still*** have no idea what technology will be used to do what tomorrow. That is the challenge for any business looking to move into The Cloud.

One way to conceptualize the future is to look back at the past. Think of how things have changed in the last decade. For example, people watch TV on phones now, something once inconceivable, let alone not possible. They listen to the radio on the TV. They make phone calls on radios. Cordless electricity exists today. Ubiquitous virtual reality (making simulated environments less "fake") is coming, as is augmented reality (where people can more deeply experience what is physically around them). Why? Because it can be done and people will pay for it. Wireless technology companies are constantly evolving and finding more ways to extend their reach and performance so they can get more customers or charge their existing customers more for what they offer. Incredible innovations today become the installed base common to all that tomorrow's users will leverage in ways now incomprehensible to us but obvious and logical then – sort of like how Velcro didn't exist one day and then we wondered why WE hadn't thought of it as we stuck Velcro strips everywhere – even replacing shoelaces, zippers, and buttons. So, to put your head in The Cloud, you need to think today like the technology user of tomorrow. This monograph explains how to think about your mission in The Cloud through Combined Analog Analysis.

Technology users tomorrow will become very much like most car drivers today – blissfully unaware of the actual mechanics and physics that it takes to make their vehicle move. Car drivers, for the most part, just want to use their car to get safely from point A to point B without

having to know how internal combustion works. They want to be able to use their car without knowing how the hybrid car next to them works – they just want each driver to perform together with open communication about intended behavior so nothing bad happens. Drivers today don't care if the road surface they drive on is macadam, glasphalt, concrete, or dirt, as long as it's a reliable platform for them to get their job done. Similarly, details about the actual technology are not the most important part of understanding The Cloud. Unless you are directly in the business of technology itself, focus first on the intended results you want from The Cloud without considering the specific technology you need to get there. Use Combined Analog analysis to enable you to imagine the outcomes from your journey to The Cloud.

Combined Analog analysis: step 1:

Step1: Ignore technology to begin with – focus first on the resulting outcome benefit (ROB) you want from your business mission in The Cloud.

If you can imagine technology that you need for your business mission in The Cloud, but it hasn't been invented yet, never fear! There is undoubtedly a geek in a garage somewhere right now trying to make it happen ☺. So, if you are not a technical genius, you can still make money off the cloud as a cloud entrepreneur through good, old-fashioned business models that meet the needs and demands of the market. Businesses that succeed do so because they deliver a benefit that people reward. Understand first and foremost what need your mission addresses and what benefit your mission brings to the equation.

Here are sample resulting outcome benefit (ROB) statements

- [Continued living] through (healthy) {eating}.
- [Community or environmental interaction in person] through (safe) {physical transportation of people}.

Notice the pattern to these ROB statements. Three sections have been highlighted for your attention – a section that announces the ultimate resulting outcome benefit within square brackets [], accomplished by the actions or means listed in the section with squiggly braces {} in the manner called for (part of what we'll call the philosophy) by the content of the section with parentheses (). Not to be too formulaic with the approach, define your resulting outcome benefit with enough specificity strong enough to support analysis as we move forward, such as "Continued living through healthy eating." This example works whether the business is presently internet-based or not, whether the business offers goods or services for sale, whether the business is for profit or for charity. All outcome-focused efforts are easier to accomplish intentionally when intentionally focused through such outcome statements.

Exercise 1: List one resulting outcome benefit (ROB) for your reason for using The Cloud. Include the reason why someone wants you to succeed in your mission (the ROB), the actions or

means intended to produce the benefit (in eight words or less), and the philosophy that will be used to evaluate the success or failure in meeting the goal of the benefit.

- People or businesses want my mission in The Cloud to be successful because it will help them to _____ (resulting outcome benefit). For example "people want my mission in The Cloud to be successful because it will help them to continue living."
- The resulting outcome benefit will be accomplished by _____ (eight words or less). For example "the resulting outcome benefit will be accomplished by eating."
- Write one word that describes what you would ask about if someone came up to you and screamed "Oh no! Something went wrong with this!" _____ (evaluating philosophy). For example "Oh no! Something went wrong with health!"

Now, take those three ideas and put them into one sentence. For example "Continue living by eating healthy" or "Continue living by healthy eating." You try it now in the space below:

My mission will help people or businesses (8 words or less):

How (8 words or less):

And you'll know it went wrong because of (8 words or less):

Put it all together now:

There! Now you have a ROB statement to use in your analysis moving forward.

Step 2: Declare and broadly define the starting analog to use with the analysis

Next, determine your starting analog that delivers the resulting benefit. An analog is something that stands in for something else, like a clock with numbers and hands for denoting time. Sometimes an analog enables us to understand something better. However, a more proper definition of analog would be "a person or thing comparable to another." There's also a definition that fits The Cloud better: "of or relating to a mechanism that represents data by measurement of a continuous physical variable." Consider these examples:

- A doctor's stethoscope is an analog for a healthy lung or heart that can measure heart beats and heart rate.
- A video image from a camera is an analog of the person or thing being broadcast that can measure various visual attributes of that thing.
- A fork is an analog for food or eating that can measure quantities of food.

Using the technology customer of tomorrow as a car driver analogy again, an analog might be something you'd see on the signs at the side of the road alerting us to what we'll find at the next off-ramp. It's okay to start an analysis with a forced analog that comes from pre-existing business efforts as long as the later analysis steps are not biased by continuing to "keep the thumb on the scale."

Sample starting analogs for previous sample resulting outcome benefit (ROB) statements

- [Continued living] through (healthy) {eating}.
    - Declare the source analog: a fork
    - Define the analog: a fork is a device that supports continued living through healthy eating by putting nutritious food in our bodies.

- [Community or environmental interaction in person] through (safe) {physical transportation of people}.
    - Declare the source analog: a car
    - Define the analog: a car is a device that promotes community or environmental interaction in person through safe physical transportation by physically moving our bodies to those communities and/or environments

When declaring the source analog, feel free to pick anything you want. If you think something makes perfect sense as an analog use that, regardless of how nonsensical it may seem to start. The rest of the analysis will confirm if it's truly a viable analog to use as the cornerstone to your success. Truth be told, you probably already had a source analog in mind when you wrote the ROB, but just in case you didn't, please understand that it is perfectly ok to arbitrarily pick any analog you want for analysis – as long as you can define the analog with specific criteria that makes rational sense for your situation or environment.

The analog definition needs to be both specific and generic – specific that it narrowly identifies the relationship between the analog and the ROB, generic in that it needs to be broad enough that other analogs might fit the same definition. In the sample analogs given (fork and car), the definitions are broad since a fork could be a knife, spoon, or plate, since knives, spoons, and plates could all put nutritious food in our bodies, while a car could be a bicycle, motorcycle, or a

piggyback ride that help us physically interact with our community as a car does, but the definition examples we've used for "fork" and "car" are specific enough that a fork could not be a car.

Exercise 2: Declare and define the starting analog to use with your analysis

- Use the ROB statement from the previous exercise to begin
- Declare your source analog based upon whatever criteria you'd like
- Define the relationship between the analog and the ROB (how does the analog that you've declared fit in with the outcome you'd like to see in The Cloud?)

Go ahead and use the template below to keep track of all this:

ROB statement from previous exercise:

Declare the source analog:

Define the source analog:

There! Now you have an analog to use in your analysis moving forward.

Step 3: List other analogs that fit your source analog definition and Step 4: List stakeholders interested in those other analogs

Combined analog analysis takes advantage of trends in technology that have been going on for decades to merge features and functions. Entertainment companies provide experiences today where their customers can pause the show they are watching on one device in one room and start it back up at the same point immediately on a different device in a different room – or even the car. Cloud technology companies are today building the data storage and transfer infrastructure for their proprietary technologies – it will not be long before they realize that a rising tide floats all boats and they begin to use open collaboration protocols that will share data more freely than today. Think Bluetooth on steroids and you'll get the idea. Bluetooth is current technology (as I write this) that allows any device that is actively seeking other Bluetooth devices to share data wirelessly. Bluetooth can pair mobile phones with car sound systems so that the car essentially becomes a speakerphone. If you use a phone in a car with Bluetooth

while sitting in a parking lot, can the car cease being an automobile and just become a phone? Analogs can be combined any way you think it makes sense by using the following steps:

a. Begin with the definition statement from the previous exercise
b. Breakdown the statement into the component pieces that form the measureable or verifiable part of the definition
c. Identify data types for each component
d. Brainstorm a list of analogs for each component data type

Using the fork example and "putting nutritious food in our bodies," like the peas and carrots of Forest Gump there are three parts to explore – nutritious, food, and in our bodies. A fork in The Cloud should be able to share data about nutrition, food, and our bodies. See the following table for some examples:

Nutrition data from food contents on fork	**Food data from fork surface**	**Body data from saliva with contact with fork**
Recipe ingredients	Temperature	DNA
Vitamins & minerals	Pathogens in sample	Diabetes?
Dairy content	Weight or Mass	Lactose intolerance?
Gluten content	Quantity or Volume	Blood type?
		Pregnancy?
		Other medical conditions determined clinically or from blood tests

Use the data types you come up with to prompt recognition of what other analogs do the same thing. Again with the fork example, see the following table:

Nutrition data from food contents on fork	**Food data from fork surface**	**Body data from saliva with contact with fork**
Mass spectrometer	Thermometer	Hypodermic
Chemistry lab kit	Chemistry lab kit	Swab kit
	Scale or Measuring cup	

These analogs just identified can be used to prompt an understanding of the stakeholders interested with the source analog now that it's in The Cloud. Here's a partial listing of people or groups who might be interested in the analogs we identified in our previous step.

Mass spectrometer	Chemistry lab kit	Thermometer	Hypodermic	Swab kit
Scientists	Police	Cooks	Hospitals	Doctors
Researchers	Scientists	Weathermen	Insurance companies	Nurses
		OSHA	Patients	Detectives

Or, listed uniquely:

- Cooks
- Detectives
- Doctors
- Hospitals
- Insurance companies
- Nurses
- OSHA
- Patients
- Police
- Researchers
- Scientists
- Weathermen

Let's do this step again using the car analog example. Remember, here are the steps to identify other analogs

a. Use the analog definition statement
b. Breakdown the statement into the component pieces that form the measureable or verifiable part of the definition
c. Identify data types for each component
d. Brainstorm a list of analogs for each component data type

The definition we gave to cars earlier said that they "physically move our bodies to those communities and/or environments" so we can interact. Once again there are three parts to explore – physically move, bodies, and communities/environments interaction. A car in The

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Cloud should be able to share data about physically moving, our bodies, and community/environ interaction. See the following table for some examples:

Physics (moving) data	Body data	Interaction data
Time, Rate, Distance	Driver Identity	Driver record/history
GPS Coordinates	Passenger identity	Social media for area
Traffic conditions	Weight (for fuel consumption)	Social media for destination
Road conditions		Social media for point of origin
Weather conditions impacting driving		Phone/Text/email
Engine condition/Gas/Energy		Radio/TV

Using the data types we just came up with, here are some potential analogs for comparison:

Physics (moving) data	Body data	Interaction data
Radar Gun	Facial recognition tools	Government records
Navigation systems	Scales	Social media tools
News reports (radio, TV)		Smartphones
Operating controls (gas gauge, speedometer)		Radio/TVs

These analogs just identified can be used to prompt an understanding of the stakeholders interested with the source analog now that it's in The Cloud. Here's a partial listing of people or groups who might be interested in the analogs we identified in our previous step.

Radar Gun	Navigation Systems	Radios/TV	Controls	Facial recognition	Scales	Government Records	Social media	Smartphones
Police	Drivers	Reporters	Drivers	Drivers	Drivers	Drivers	Drivers	Contacts
Drivers	Passengers	Drivers	Other drivers	Passengers	Passengers	Passengers	Passengers	
Other drivers	Other drivers	Passengers	Gas station owners	Police	Bridge operators	Other drivers	Other drivers	
		Advertisers	Mechanics			Police	Police	
						DMV	Friends	
						Insurance companies	Strangers	
							Advertisers	

Or, listed uniquely

- Advertisers
- Bridge operators
- Contacts
- DMV
- Drivers
- Friends
- Gas station owners
- Insurance companies
- Mechanics
- Other drivers
- Passengers
- Police
- Reporters
- Strangers

What can you do with this type of analysis? The power of the Combined Analog Analysis comes from the next phase where we identify relationships of mutual benefit between cloud stakeholders, a step that Combined Analog Analysis calls "Logical Linking" which we'll explore after you do this next exercise for your own mission benefit.

Exercise 3: Identify analogs and stakeholders for each component data type

- Use the definition statement from the previous exercise to list other analogs that deliver the same mission
- Break down the statement into the component pieces that form the measureable or verifiable part of the definition
- Identify data types for each component
- Brainstorm a list of analogs for each component data type
- Identify who might use or be interested in each analog

Go ahead and use the template below to keep track of all this:

Define the source analog components:

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Component data types:

Component data type analogs:

Analog stakeholders:

Step 5: Logically link your analogs to other analogs and missions

Combined Analog Analysis is intended to prompt your thinking about what the world of The Cloud truly may look like, especially when you consider the impact that everything will have on everything else. You chose your analog because you want to get something done in The Cloud. Other people have analogs of their own to do the things they want done. Sometimes your mission will be solely yours, sometimes you share goals with others, and then again other times you may be at cross-purposes with people's goals when they use their analogs. To have success in The Cloud with your approach, look for opportunities to link, to support the mission of others so they'll support your mission. This is done through Logical Linking.

Logical Linking combines principles outlined in powerful negotiating techniques like Principled Negotiations and quality management processes like Define, Measure, Analyze, Improve, and Control (DMAIC) in Six Sigma. These methods focus on common core goals shared by stakeholders, something we took advantage of in the previous step that found a set of analogs serving an ultimate benefit for a body of interested stakeholders. Now, Logical Linking looks for the mutual benefits that can be found across those stakeholders.

Here's how:

a. Pick two of the stakeholders listed in the previous exercise
b. List the positions of each in the pairing
c. List the interests of each
d. Find common interests to identify mutually satisfactory outcomes

Such detailed analysis at this step may not be necessary since some mutually satisfactory benefits present themselves easily. For instance the fork example calls to mind scenarios where forks are wirelessly enabled to transmit data about what is resting or impaled upon their tines. Hospitals, doctors, and nurses would want to know if their patients are eating properly or not and be able to judge their progress. So would insurance companies paying for the meals being served in a hospital want to know if the meals were eaten. Hospitals and patients both benefit when the fork used to eat also does bloodwork to confirm no adverse reactions to food or other treatment. Insurance companies and hospitals mutually benefit when the fork can be used to minimize waste and cost.

The car example brings forth easy opportunities for mutual benefit such as the potential for gas station owners to promote competition and generate more business for themselves while keeping drivers informed of local conditions. Imagine that cars are constantly pinging the area they're in looking for data about a variety of factors – road conditions, weather, locations of service plazas, food, etc. Now imagine gas station owners reach back to cars to get data about things like fuel levels and alert drivers to the gas station wares for sale. If all the gas stations in the area do this and each advertises their price for fuel, thus promoting competition that leads to lower fuel prices for consumers, then everybody wins.

Let's take a look at the car example in more detail using the structured approach:

The ROB statement: [Community or environmental interaction in person] through (safe) {physical transportation of people}.

- Define the analog: a car is a device that promotes community or environmental interaction in person through safe physical transportation by physically moving our bodies to those communities and/or environments

Stakeholder 1: Car controls – fuel gauge

Stakeholder 2: Gas station owners

List positions each stakeholder would take regarding the data they need to share to accomplish the ROB:

Positions of Car controls – fuel gauge	Positions of Gas station owners
"I keep track of the amount of fuel remaining and the distance that fuel can move us."	"I want to make as much money as possible selling my gas and other wares."

Clearly, car fuel gauges, an analog for distance, are intended to help the car mission (moving people) which would require an understanding of how far the car can actually move. This distance relies heavily on fuel stores that are contained within the space that is monitored by the fuel gauge. Meanwhile, gas station owners simply want to sell gas and other profitable products. When one examines both positions at straightforward intent, there is no obvious relationship between them, no mutual benefit that immediately jumps out. Fuel gauges just want to move, gas station owners just want to make money. Fuel gauges would be perfectly content to ignore gas station owners as long as they can, gas station owners don't care if they sell their gas to cars, lawnmowers, or people looking to start bonfires. We need to find a mutual benefit if we want to get into The Cloud. Let's figure out why they take the positions they do – what motivates them as their base interest?

"Base interest" means "because:"

Base interests of Car controls – fuel gauge	Base interests of Gas station owners
"Because the car I'm in needs fuel in the space I measure to physically move the driver and passengers from one place to another."	"Because I'm…
	"…supporting a family"
	"…greedy"
	"…a responsible business owner"
	"…interested in being paid to help people physically move from one place to another"

What are the interests on both sides – the interests in common? List those here:

Common interests
"Because the car I'm in needs fuel to physically move the driver and passengers from one place to another."
"…interested in being paid to help people physically move from one place to another"

Clearly both parties would like to move people. One does it for money while the other is doing it for whatever reason they have, but, ultimately, both have the same interest in keeping people moving. Investments in the designs of fuel gauges and gas stations that focus on promoting the common interest of moving people with payment to gas station owners, will benefit both fuel gauge owners and gas station owners.

Remember when doing this analysis to also consider the negative actors in the ecosystem that might choose to exploit other people. There's no judging meant to happen here, just objective assessment of the ease of access for criminal or malfeasant motives and the impact that such access might bring. For instance, insurance companies might want to fine diabetics who consume too much sugar, or maybe gas station owners will use the competitive information they share with the public to raise their prices if others do, similar to how airlines price their airfares. The idea with this analysis is to produce a clear picture of what the world looks like when you have your head in your cloud.

What are the opportunities for exploitation between fuel gauges and gas stations? List those here:

Potential exploits
Gas station monopolies – excessive prices when supplies are scarce
"Bait and switch" – advertise low prices that aren't actually on offer
"False lighthouse" – advertise gas stations that don't exist (for the purpose of luring travelers to points of ambush in lonely locales)

Clearly, there needs to be mechanisms built-in or provided to protect consumers and/or punish bad actors. Don't just rely on laws and courts for protections, build protections against exploit into the technology when possible. Tesla's electric cars have dashboards which indicate the closest recharging stations – it might be nice to know from social GPS if they're in high-crime areas when looking to top off at midnight on the way home from the airport. Just be careful to do an impact analysis of protections that you plan to build in – Microsoft faced significant user adoption issues with Windows 7 because the security protocols that constantly prompted users to authorize transactions were a constant annoyance to users who found they preferred easy, convenient access over security prompts that interrupted them. Microsoft addressed this in their next operating system release by letting people be more and less dangerous at the same

time – more dangerous because they gave users greater autonomy for what they could do when their actions would harm only their own devices or data, less dangerous in that Microsoft tightened down security at junction points where other users might impact each other.

Exercise 4: Logically link your stakeholders and analogs

- Pick two of the stakeholders listed in the previous exercise
- List the positions and interests of each stakeholder
- Find common interests to identify mutually satisfactory outcomes
- Identify where and how some stakeholders might choose to exploit others

Use the template below to keep track of this:

List the two stakeholders you identified in the previous exercise:

Stakeholder 1 _____

Stakeholder 2 _____

List positions each stakeholder would take regarding the data they need to share to accomplish the ROB:

Positions of stakeholder 1 _____	Positions of stakeholder 2 _____

Why do they take those positions – what motivates them as their base interest? List those here:

Interests of stakeholder 1 _____	Interests of stakeholder 2 _____

What are the interests on both sides – the interests in common? List those next:

Common interests

What are the opportunities for exploitation? List those here:

Exploits

There! Now you have common interests for two stakeholders in your cloud to use in your analysis moving forward.

Step 6: Examine every one of the relationships in your ecosystem with Logical Linking

So far our analysis has produced a list of analogs that can accomplish mutually satisfying goals between two players involved in your mission in The Cloud. There are probably more than 2 people or viewpoints involved in your situation. In the examples we've been using so far, the fork and the car, we identified 12 and 14 unique stakeholders respectively and we weren't exhaustive with our list. When you take the time to list out a stakeholder, be exhaustively inclusive with the mutual benefit analyses so that **all** stakeholders are reflected in the design considerations. There's a formula to tell us how many pairings are needed: N(N-1)/2. For our given examples so far, the fork needs 66 pairings and the car 98. Thus, you can see that the number of pairings required for analysis grows quite quickly as more stakeholders are identified.

The extra effort from listing more stakeholders is worth it since it pays off in a thorough and detailed analysis that can produce a very solid understanding of the market involving your cloud mission and the analog designs people and companies need and/or want. The more you examine the core root interests at common to multiple stakeholders, the more you can see the central themes that your mission needs to support. The more you support these central themes, the more your analogs can support the analog of others. The more you support the efforts of others the more they promote your own since it benefits them to do so. All the large technology companies now reward partners that work with their technology. If you execute your mission in The Cloud in ways that all technologies can exploit, all technologies are equally likely to embrace your design. THEY will figure out how to make the technology work for YOU, thus solving the challenge we faced at the start of this piece that perhaps we don't know the technology today we can use for the cloud tomorrow.

In summary, Combined Analog analysis can help you understand how your goods or services might fit in to the technology world of tomorrow using a structured format described in these steps:

Combined Analogs, Logically-linked and Numerous

1. Ignore technology to begin with – focus first on the resulting outcome benefit (ROB)
2. Declare and broadly define the starting analog to use with the analysis
3. List other analogs that fit your source analog definition
4. List stakeholders interested in other analogs
5. Logically link your analogs to others
6. Examine every one of the relationships in your ecosystem with Logical Linking

There's an acronym you can use to help remember these steps in order:
Combined
Analogs,
Logically
Linked
And
Numerous

or CALLAN. Use the CALLAN cloud analysis technique to produce market descriptions that support the plans of the four roles of Business Ownership, Design, Execution, and Value Delivery.