Redefining the role of the Project Manager in the age of Digitalization

Sub-Theme-*Project Management Leadership > In a Rapidly Changing World*

Author: Sriharsha Makkuva

Abstract

As Digitalization gains momentum with every single industry facing disruptive forces we can see an increased obsession among the C-level executives over their organization's digital imperative. While the senior management drive their organizations' high-level strategy by talking digital, it's the project manager who is ultimately responsible to do the ground work and give shape to the vision charted out by their senior management. The role of the project manager has never been more important than in these times when each and every organization is looking to be included into the digital verse.

In this paper, we chart out a strategy which can be adopted by the project managers to drive the digital initiative in their respective organizations. Project Managers have to pivot from their traditional project management role and identify themselves more as a digital leaders to drive their organization's digital initiative. If the organization is digital mature, the project manager has his work cut out in managing continuous change management and high stakes stakeholder management.

This paper will provide a clear roadmap to all the digital leaders on how they can not only expedite their organization's digital transformation but also how they can achieve market leadership. What it means to be fully digital and give a ring-side view of how organizations are prepping themselves to win in this digital economy.

To quote an INSEAD article on digital leadership '*Digital is business and business is digital*'.

Keywords: Digital Transformation, Industrialization 4.0, cloudification, machine learning

Table of Contents

Introduction

"Whatever logic is good enough to tell me is worth writing down," said the Tortoise. "So enter it in your notebook, please.
We will call it E. If A & B & C & D are true, Z must be true.
Until I've granted that, of course I needn't grant Z. So it's quite a necessary step, you see?"
"I see," said Achilles; and there was a touch of sadness in his tone.

--What the Tortoise told Achilles, Lewis Carroll

While each and every role in the organizational hierarchy has been defined and re-defined, the role of the project manager has stayed the same that of the chief interlocutor and the prime fire fighter when it comes to dousing any conflict between the multitude of the teams involved in project execution. Its time the role of the project manager is positioned more as a digital leader rather than someone who manages the projects within the budgetary timelines.

Project Manager while acting as a crucial link between the senior management and the delivery teams is most aptly positioned to lead the organization into the digital age. With the advent of the digital age and with the onset of a new set of challenges the most important being meeting the continuously changing end-user/stakeholder expectations, project manager's role has to be pivoted so as to position it as the de facto digital leader to lead the enterprise wide change.

These digital leaders have been the traditional executioners of the enterprise vision of the CXOs driving change from the ground up and are well positioned to drive the digital

transformation programs. If the incumbents are truly looking towards extracting the best possible business outcomes they need to get a buy-in from the delivery teams who either need to be re-skilled or need to know their value addition if they continue to support the core systems not undergoing transformation.

Enterprises are facing a new kind of challenge in retaining their core systems while coming up with solutions that can be implemented digitally to complement the already existing as-is systems. While digitizing the core modules is often risky and fraught with lot of technical challenges, building the digital services around these core modules to achieve economies of scale and maximize the ROI is the best way forward.

Digital is Business and Business is Digital

Most of the companies are still trying to gauge the avalanche of benefits their organizations can gain if they choose to go digital. Board level meetings and the senior management strategy meetings tend to revolve around how is this affecting them and how can they get on to the digital band wagon.

Digital transformations are the order of the day and if an organization in the traditional industry or a digital non-native does not have a digital transformation strategy in place investors start predicting its extinction event. CEOs have to have a digital strategy in place to share along with the quarterly and annual results. The software services industry is now reporting their digital business outcome separately so as to keep a track of the amount of digital transformation they are affecting amongst their various clients spread across various industries.

Digital is in a way becoming an ersatz for all things business and that's the way forward. Germany considered a pioneer in manufacturing with a contribution of more than 20% to its GDP can be seen digitizing its entire manufacturing process. This will give it an uncanny edge over the rest of the world.

Dubbed Industrialization 4.0, the digitalization of its production and manufacturing is a great step forward towards automation and high quality output. According to a recent study by the Deutsche IT industry association BITKOM in partnership with Fraunhofer Institute of Industrial Engineering, this digitalization in the manufacturing industry will lead to as much as 5% increase in employment opportunities which will translate into significant rise in the country's GDP.

What with the advent of the digital technologies traditional industries are getting disrupted globally from hitherto unknown scenarios. We can see Uber disrupting the

Project Management National Conference, India
Project Management - *Powering India's Global Leadership*
15-17 September, 2017, Chennai

HOSTED BY
PMI
CHENNAI CHAPTER

CO-HOSTED BY
PMI

entire transportation industry, Netflix the way content is delivered disrupting the entertainment industry and AirBnB, which has market capitalization more than the Hyatts and Hiltons of the world, has shown the incumbents on how to achieve the economies of scale by not owning any actual physical assets. All these pure play digital natives are disrupting the traditional incumbents at a never before anticipated pace.

If you went *to* bed *last* night *as an industrial* company*,* you*'re* going *to* wake up *today as a* software *and* analytics company.

- *Jeffrey Immelt, CEO, General Electric*

Project Manager as the Digital Leader

The world is at an inflection point. Industrialization 4.0 is forcing organizations to either face the digital head winds head long and win the digital wars or face their own *Kodak moment*. As organizations try to pull in all stops to win in this new digital economy, it's the imperative of the project manager to make it happen from the ground up.

The digital transformation should be a bottoms-up approach with the core processes and the core delivery team getting a buy-in in to the whole digital story.

The digital economy has resulted in the creation of two kinds of players globally, the digital non-natives and the digital natives. The digital non-natives are those incumbent companies who are seeing their traditional models being disrupted in this new digital economy. The digital natives are the new pure play digital companies, the Ubers and AirBnBs of the digital world, disrupting the traditional players and envisaging new solutions to the hitherto dormant models of doing business.

The digital non-native companies are the ones who are responding to or rather trying to combat the digital natives by drawing up huge digital transformation programs to get more value proposition from these programs while still running their core legacy systems. Their core legacy systems are as much important as the new digital initiatives. Bimodal IT, with two-part teams, one looking at the more stable core system, and one looking at the digital transformation programs go a long way in maintaining the status quo of the incumbents.

Most of the core modules of these huge enterprises run on the erstwhile legacy platforms. Migrating these core systems to the modern infrastructure is both risky and

cost intensive as Commonwealth bank of Australia found out after it embarked on replacing its legacy systems which cost it a whopping $749.9 million.

Another organizations' efforts to migrate its legacy systems resulted in a never-ending nightmare and had to be abandoned mid-way which was wastage of precious time and money. So, organizations must look to build digital capabilities around these core systems and need capable hands to lead this initiative.
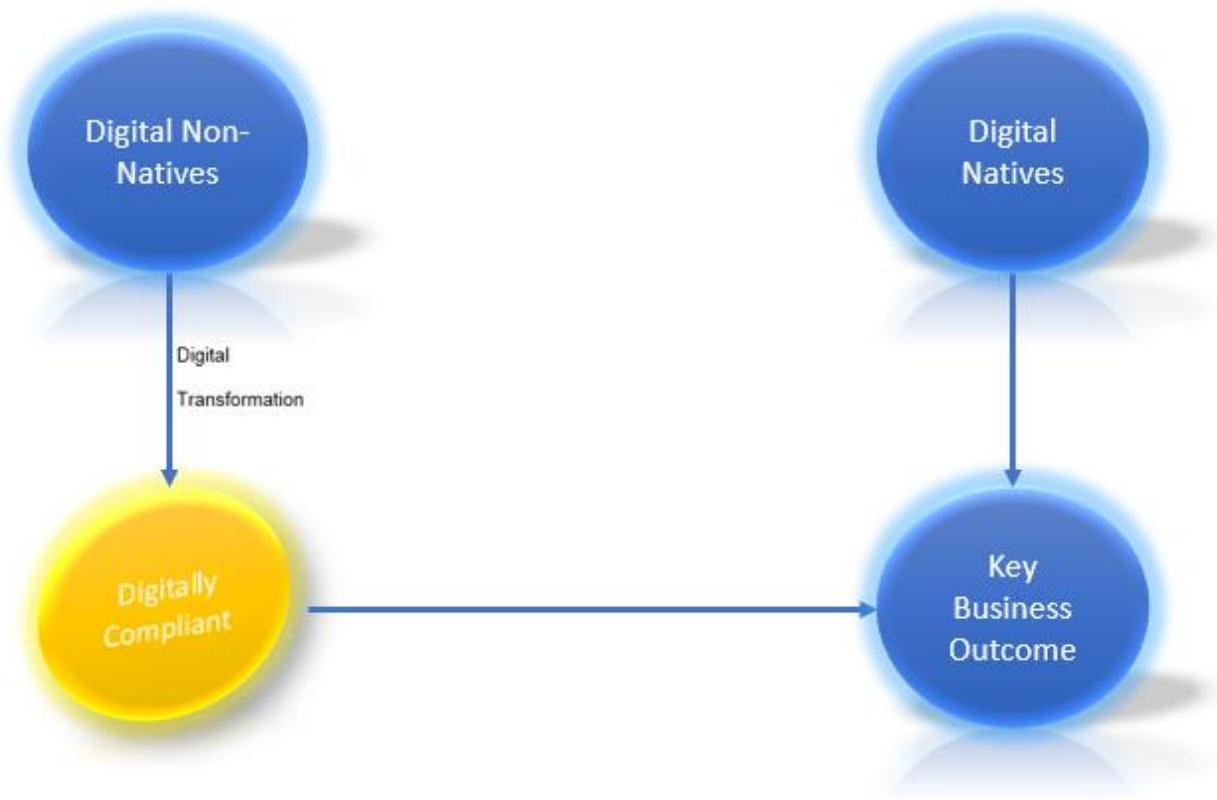
The digital transformation program will make the incumbents digitally compliant which will drive them to achieve the required key business outcomes just as the digital native. This is where the role of the project manager is the most crucial. Project Manager plays a pivotal and central role in both the digital transformation and running the core legacy systems. More often than not the project manager has their hands in both of these areas and is placed at a good vantage point to be able to take key decisions on which are the core areas that are to be left untouched and which have to be included in the digital transformation programs. Project managers along with enterprise architects have a key role to play in making these key decisions.
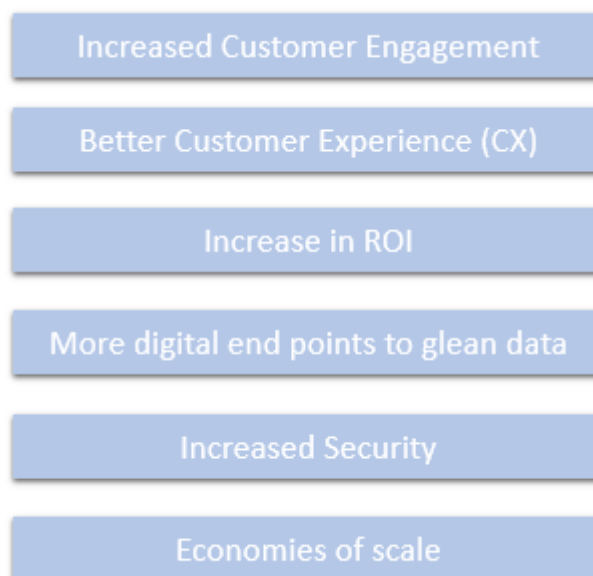
What did the Tortoise tell Achilles?

Digital transformations if not planned properly most often will be fraught with wastage of precious resources and a literal monetary black hole. As was the case with Achilles who was led by the clever tortoise in to an infinite regression, if not planned properly the digital transformation might be one endless "If this then that" scenario which not only eludes ROI but also defies logic.

Digital transformation programs if executed efficiently can reap in benefits both short-term as well as long-term and position the organization in the best position to take on the digital natives. The successful execution of the digital transformation program is the key and the project manager has to drive this success across the board.

So, what kind of digitalization efforts must the enterprises at large invest in? While the use case for each enterprise digital transformation may be different the final outcome is one of the following in most of the cases.

Organizations undergoing digital transformation should be aiming for these key outcomes.

| Increased Customer Engagement |
| Better Customer Experience (CX) |
| Increase in ROI |
| More digital end points to glean data |
| Increased Security |
| Economies of scale |

Successful digital transformations must have a chief digital evangelizer or a digital leader to get all the stakeholders on board to elucidate them on the multitude of benefits that can be reaped by going digital. Outcomes should not be measured by the

number of apps that have been pushed into production or the amount of automation achieved. Actual metrics should revolve around the level of customer engagement and the customer experience (CX) score that can be captured by conducting surveys or through effective gamification techniques.

While ROI is a good metric for digitalization, it is considered to be a much short-term metric which organizations can use to measure short-term benefits of any of the pilot programs. With the increase in the amount of digitalization of the processes by either automation or converting the entire process into an app accessible through the mobile channels, gives the organizations more end-points to collect end-user data which can in turn be used to customize the apps or come up with other use cases thus achieving the necessary economies of scale.

What is Digital Transformation?

Digital Transformation in a nut shell is how organizations use technology to streamline their existing processes and achieve new economies of scale. How technologies like big data and cloud can be leveraged for effective data mining and increased security. Digital Transformation covers all the following and even more of them. Use of IoT to collect more data at various home and industrial touch points. A network industrial machinery in manufacturing industries can now be controlled through a network of sensors without any manual intervention.

Stölzle Oberglas, a leading Austrian glass producer, provides a good use case of how digital transformation can ensure customization and better CX (customer experience) of their end products. It can now process a lot of ad-hoc requests from customers made at a very short notice. Along with Actyx, its software provider, it can now respond to such requests as a COTS (customized-off-the-shelf) product instead of treading the whole manufacturing life cycle again. By integrating effective big data analytical techniques with cloud technology, the product specifications now flow real-time into the production process.

APIs have revolutionized the Fin-Tech industry. Banks now use third party APIs to integrate the various disparate digital payment systems which act as point-of-sales. APIs have provided banks with never before thought of use cases that helped them

increase their digital footprint resulting in increased customer engagement and better customer experience.

Machine Learning can be used to study the end-users and customer's behavior to customize the products to suit their requirements. Using Natural Language Processing, machine learning algorithms are being trained to sift through troves of obscure legalese in contracts into language that the attorneys could easily understand, thus saving them precious time. Based on supervised and non-supervised learning specific use cases can be designed to learn various scenarios. Machine Learning was used in the field of Healthcare to review the mammography scans of women who would be diagnosed with breast cancer, by actually predicting it a year before.
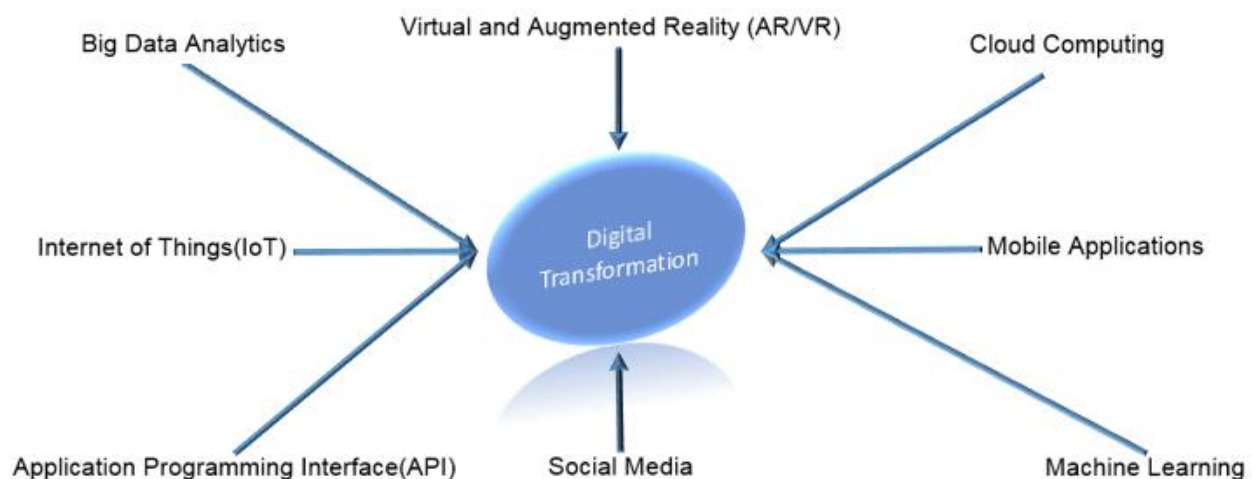
Alcoa, a US based, 128-year old mining company, uses a combination of IoT and smart sensors to control its machines, digital radiography to do a real-time testing of the ductility and tensile strength of its metals. The light metals manufacturer is using 3D printing for its metal powder production facility which will be used in 3D printed aerospace parts.

Boeing is looking at cost saving of more than $3 million per jet as it uses 3D printing technology for its titanium parts that will go into its 787 Dreamliner. That's significant cost savings if we look at traditionally how much the airlines manufacturing industry loses while manufacturing a single jet.

There are umpteen use cases that can be implemented with the application of digital technology to specific problems.

Digitalizing also encompasses how organizations react to the changing market dynamics at a much faster pace.

Speed is the currency of the digital economy.

-Marc Benioff, CEO, Salesforce

Organizations need to move faster if they are to compete and win in this economy. This can only be achieved by strategizing on how the new digital technologies can disrupt their industry and with a combination of both Agile and DevOps have to get the product or service to the market as fast as possible.

With faster adoption of Agile and DevOps, and efficient release cadence, organizations can experiment, fail fast and implement the lessons learnt in the next iteration. There is no such thing as the final product or outcome in the digital economy as the customer expectations keep changing and new features are to be added to the product on an on-going basis.
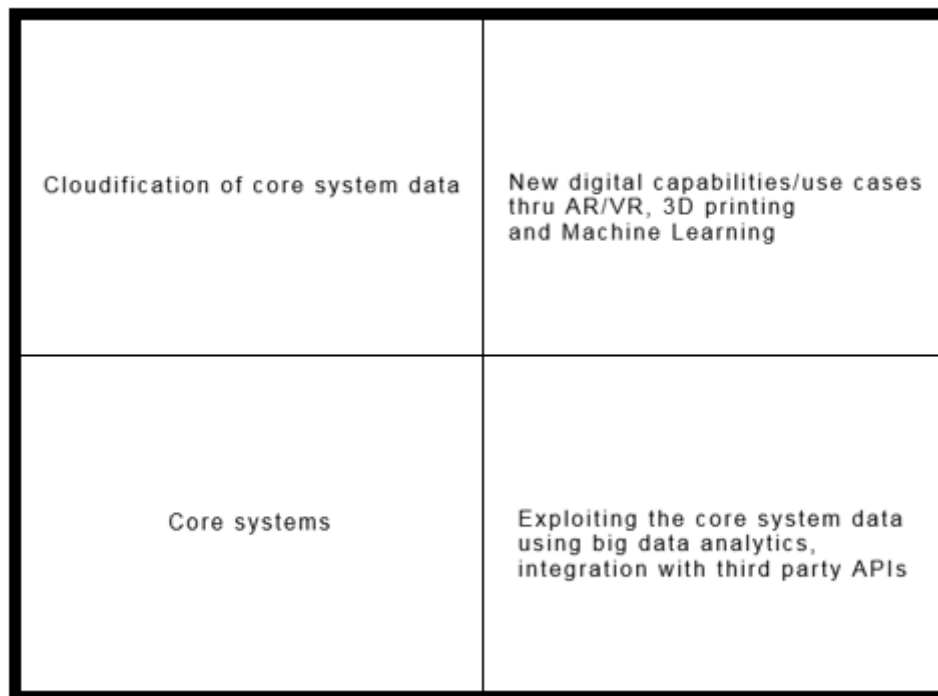
The Digital Transformation Framework

By codifying the process of digital transformation through a broad rule-based framework digital leaders can not only get a buy-in from the stakeholders but also drive successful transformation programs that lead to all the key business outcomes.

The framework is applicable to any and every industry disrupted by digital technologies. Digital leaders need to apply this framework to discern on which are the systems that can be transformed, on the core modules that can be left untouched. What are the new use cases they can generate using the new digital capabilities like AR/VR, 3-D printing and Machine Learning.

Leveraging digital capabilities to achieve economies of scale

Cloudification of core system data	New digital capabilities/use cases thru AR/VR, 3D printing and Machine Learning
Core systems	Exploiting the core system data using big data analytics, integration with third party APIs

New use cases around legacy core systems

The digital transformation framework is divvied up into 4 quadrants. The bottom most quadrant constitutes the organization's core systems that would lend the organization its stability. This quadrant is to be quarantined from the rest of the 3 quadrants. It retains its opaqueness and interacts with the newly available capabilities through external data stores built to collect and analyze the legacy data.

The top-left quadrant deals with the cloudification of the legacy data and the incumbent enterprise data. Again the decision entirely rests with the leaders on the amount of cloudification and if legacy data should actually be migrated to cloud. Cloud not only brings data security but also ensures optimum use of the compute resources, scalability, atomicity and durability of the data. This is a strategically important quadrant as this deals with the enterprise data.

The bottom-right quadrant deals with exploiting the existing capabilities by effective use of big data analytics and third party APIs. Organizations especially those in the Fin-tech industry can integrate their existing systems with the newly mushrooming payment applications or with those of social media apps which are now being used to make payments. Big data analytics can be used to study the customer churn

and provide targeted customized solutions to the customers by anticipating their needs.

The most important and that which requires audacious and radical thinking is the top-right quadrant. This is where the organizations build new digital capabilities. By placing new use cases in this quadrant the organizations will be looking at new economies of scale, increased customer engagement and faster go-to-market strategies. Using technologies like 3-D printing and Augmented/Virtual reality incumbent organizations can build new digital capabilities.

Google with its AI (Artificial Intelligence)-first strategy is marking a conscious shift towards bringing machine learning to its 2 billion + mobile devices running on Android. Its newly designed Tensor Processing Unit (TPU) chip in conjunction with TensorFlowLite will now drive the Google Assistant and Google Home. With Google releasing the first ever machine learning chip, the TPU, which gives us a processing power equivalent to chip technology fast-forwarded seven years, a leap in three generations of Moore's Law, compared to the incumbent GPUs, we are looking at never before speeds. Harnessing these speeds gives us access to never before seen efficiencies of scale which will open up new avenues for better customer-centric use cases.

Managers have to divide their organizational strategy into these four quadrants and prioritize the use cases which needs immediate action. For organizations looking to leverage their core systems, the bottom-right quadrant must be their top priority. Using big data analytics and machine learning they might try to glean crucial data points on customer behavior.

If managers are looking to securitize their enterprise data and make use of cloud analytics, the top-left quadrant needs a look in. They must see which data needs to go into the cloud and decide on what kind of cloud suits their needs. Once the data is migrated to the cloud, a decision is to be taken on what needs to be done with it.

To achieve new economies of scale, digital leaders have to be more aggressive and look at emerging technologies such as augmented reality/Virtual reality (Merged reality) and 3D printing. Disruptive thinking is the need of the hour and these new technologies will open up new avenues of revenue and never before seen cost savings to the enterprises. Incumbents are always caught with their guard down when a new start-up springs up and tells them how things are done in an entirely never before thought way. It happened to the taxi industry with Uber and the Hospitality industry with AirBnB. So, incumbents must always have active projects going on in this quadrant, so they can take these disruptive start-ups head-on and stay relevant.

By effectively placing their enterprise IT architecture in this digital transformation framework, digital leaders can discern on how it will look after the digital transformation takes place. This framework will provide them with good measure of how the current as-is model will look in comparison to the to-be model.

While we can see the CXOs waxing eloquent about digital transformations in their respective organizations, it's the project managers, the new-age digital leaders who have to give life to their vision and lead their respective organizations into the digital future.

Conclusion

It's the new digital leaders forked out from their traditional roles who are best placed to lead the organizations digital transformation programs. Project managers are excellent executioners and have to take a more upfront leadership role to lead their organizations digital transformation programs.

By applying the digital transformation framework, leaders can ensure their organizations shift towards the digital future is swift and fruitful. To ensure their organizations are not led into a never-ending infinite regression (*the way the Tortoise led Achilles into*), leaders have to set up digital end-points, based on release cadence, which can be used to gauge key outcomes. These outcomes can then be used to get further buy-in from the stakeholders for lobbying more budget to scale-up the transformation programs.

Here's wishing the new-age digital leaders successful digital transformations, to transform their respective organizations into masters of the digital verse.

To digital and beyond.

References:

[1] http://www.allthingsdistributed.com/2017/05/industry-digitalization-value-creation.html

[2] https://knowledge.insead.edu/leadership-organisations/11-leadership-guidelines-for-the-digital-age-5516Alcoa opens 3D printing metal powder plant

[3] https://www.theverge.com/2017/4/11/15256008/3d-printed-titanium-parts-boeing-dreamliner-787

[4] https://thenewstack.io/cobol-everywhere-will-maintain/

[5] https://www.youtube.com/watch?v=qav1y7G15JQ

[6] https://www.forbes.com/sites/bernardmarr/2016/09/30/what-are-the-top-10-use-cases-for-machine-learning-and-ai/#94c900c94c90

[7] https://cloudplatform.googleblog.com/2016/05/Google-supercharges-machine-learning-tasks-with-custom-chip.html