# ECOSYSTEM CONSIDERATIONS FOR DIGITAL TRANSFORMATION PROGRAMS

**Abstract**

One of the most important topics in recent years on CXOs minds is how to manage digital transformation and its associated digital ecosystems. There are already multiple ways/ models, the ecosystems have been adopted across industry verticals. Scientific definition of "ecosystem" means entities/ communities interacting with each other in specific environment. The ecosystem encompasses various entities which are not limited to the specific organization or the industry but also involves technology, partners, employees, customers, competitors, regulatory agencies, and many others. Therefore, the need for democratizing interactions, building services/solutions for openness and flexibility is increasing. With multiple maturing digital technologies and hyperscalers around, organizations are keen on utilizing these to build appropriate ecosystem to derive the optimum benefits. They are investing heavily in developing ecosystem as they consider the ecosystem itself as value generation strategy.

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In today's crowd of multiple digital technologies, the key aim to achieve the final business goal should not be lost. Ecosystem strategy if developed by following others blindly most often creates hindrance in the transformation journey. Therefore, it is critical to understand the role of ecosystem while industrializing maturing technologies to achieve business objectives. This paper intends to help organizations understand the different types of challenges and navigate them to realize their ecosystem strategy.

Following are few scenarios from our experience where enterprises have wanted to embark on a path of digital transformation with specific objectives. It's interesting to see how these objectives drive the need of an "Ecosystem" strategy. While working as a system integrator for these organizations, we were working in different capacities such as consultants, system integrators, ecosystem designers as part of their transformation journey. Below are some examples of their objectives:

1. **Agility while delivering enhanced services:** A betting service provider wants to revamp existing architecture which will enable quick launch of upgrades on multiple channels with enhanced operational reliability, availability & integrity.

2. **Lanuch new products & services:** An Oil & Gas company aims to transform the traditional fuel retailer business into consumer services hub (retail convenience stores,electric car charging stations) & achieve business growth.

3. **Partnerships to generate new revenue streams -:** A telecom provider partners with content/media companies & health system providers and provide service differentiation to generate new revenue streams.

4. **Business Continuity:** A large IT company wants to enable Work From Home, online trainings, virtual events for more than 200k employees in short span during "Covid19" situation.

5. **Improve IT standardization:** A telecom provider wants to conceptualize IT solutions (such as ecommerce, self-care) as central product development and roll out for more than 15 operating countries to avoid duplication of development efforts.

6. **Community engagement:** A large IT organization wants to extend their internal platforms to enable community programs and run multiple community engagement projects at scale.

While various industries may have differing needs and objectives, these fall into 4 broad categories

| Increase Revenue | Optimize Cost | Business Continuity | Community Engagement |
|---|---|---|---|
| • By introducing new products and services<br>• By partnerships<br>• By selling existing products and services at scale | • By reducing Time to market for new products<br>• By reducing cost to serve the customer<br>• Improve IT standardization | • By increasing operational reliability<br>• By ramping up alternate working mechanism | • Enable multiple community programs at scale. |

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## Why is an ecosystem needed?

In today's IT landscape, value is delivered not by a point solution but by ensuring different moving parts come together and operate in a seamlessly interconnected manner. We have seen various issues being part of large transformation journeys where appropriate ecosystem components were not in place or had issues in operationalizing the ecosystem. Following scenarios explain the need to have an efficient ecosystem in place.

### Typical challenges & associated impacts seen in large transformation programs –

**Lack of extension & integration utilities impacting cost of implementation** – Integrations with local systems & customizations to suite geography specific requirement are common scenario in case of multi-geo implementation. System integrators tend to build custom solutions if ways to integrate and localize are left to interpretations via verbose documentations. Customizations increase the cost of implementation. Solutions being built using latest technologies in silo is not enough in this case as the ecosystem will have multiple local systems & geo specific regulations. This needs an extendible platform as a foundation for solution development and utilities to generate boiler plate code for extensions and hooks for integrations. Focus on automation tools to verify the sanity of upgrades / enhancements post integrations & localization is key to building long lasting maintainable solutions.

**Unavailability of prototype verification & feedback facility adding more risk** – Without a rapid prototype verification facility for an innovative offering, an enterprise must depend upon imagination to gauge the success. Having a facility to build rapid prototypes and trial out the minimum viable prototype for select few customers is needed to quickly roll out innovative ideas.

**Lack of efficient methods to establish revenue distribution model impacting product launch timelines -** Partnership ecosystem needs ways to define new business process, revenue sharing mechanism, system integrations and audit after business growth. A strong ecosystem providing building blocks like, workflows, revenue model calculation framework, security, partners can collaborate within shortest time for a new service offering and focus only on business rather than technical hurdles.

**Lack of auditability & observability impacting revenue loss** – A manual error while configuring complex systems (e.g., banking, ecommerce, insurance), can cause huge revenue losses within few minutes. Digital ecosystem providing auditability & observability features to find out changes, anomalies with actionable insights is needed.

**Slow responses to build business continuity triggering penalties -** Large organizations struggled to enable work from home efficiently during COVID-19 situation. Without a proper multi-channel strategy in place, organizations spent money on buying multiple tools/ technologies catering to specific needs (collaboration, training, service etc) and this approach created more issues due to silo implementation.

**Red tape processes impacting timelines of transformation journey** – Digital transformation journey needs efficient & agile review processes. Old style ARB review processes create hindrance to roll out new features minimizing the effectiveness of digital ecosystem being built. This also demands a different working culture.

Challenges described above highlights need of various components/capabilities in an efficient ecosystem such as extensible platform, prototype verification facility, collaborative models, processes, culture. It also highlights a need of balance among technology, process, culture & innovation. Focusing on only one aspect is not sufficient to succeed in transformation journey.

# Key Capabilities needed for successful Ecosystem:

## 1. Evolvable Platform:

A digital platform with re-usability, integratability and inter-operability as the core principles should be the foundation to build a strong ecosystem. Platform should enable building & launching new products, services within shortest possible timeframe. This would mean the platform will provide all technical capabilities required to build a functional product or service. Benefits:

- This will enable teams to focus on domain/functionality rather than thinking about technical capabilities such as authentication and authorization, data storage, caching technologies, ability to manage APIs and events, DevOps, elastic infrastructure, configuring and managing batches, configurable business workflows, notifications.

- Platform can provide domain specific configurable templates to build specific features.

- A platform built on strong Architecture principles such as Interoperability, Configurability, Extensibility, Swap ability, Upgradability, Usability, Scalability, will make it evolvable with gradual changes in technology, ecosystem, and business.

- Interoperability, Observability, and Auditability makes the platform – "a platform of choice" while building collaborations by integrating with different organizations, collaboration platforms.

- Heterogeneous computing, extreme automation, resilience are the key dimensions which will make platform strong in case exponential growth.

- With the help of "plug-n-play" configurable components which are agnostic to specific product or service, building domain specific products or services will be much easier and maintainable in longer run.
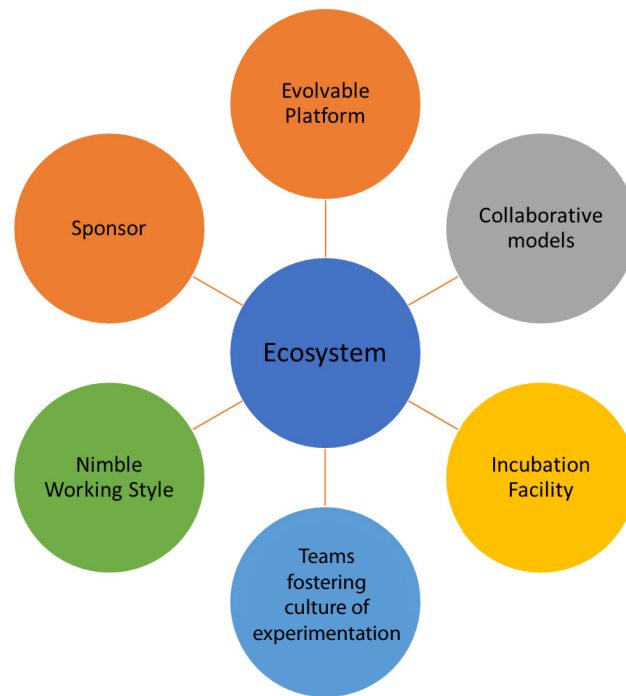
- Auto Quality Checks – Platform will facilitate automation tools to verify design modularity, code quality, test coverage, security vulnerability and multiple rule-based validations. This will greatly reduce the burden from manual review processes.

## 2. Ability to define collaborative models and measure the benefits –

Business can grow much faster if collaborated with right partners. Partnerships can be technology partnership, partnership for business capabilities, partnership for new customers, partnership for expanding territories etc. The criteria to choose right partners is beyond the scope of this paper but ecosystem should provide capability to define the financial revenue sharing models and measure the success of it on regular basis. Ability to define charging, billing and payment models between business partners should be the basic capability of ecosystem. Ways to detect frauds & design process flows should be well defined in the ecosystem.

It's essential to know that platform can become accelerator to provide these capabilities but it's not a showstopper to have the mechanism for calculating success of partnership.Process to effectively track these models is a pillar of ecosystem.

Centralized platform explained in first point can play important role here. API monetization, event monetization, configurable components to listen and record specific business events becomes basis to calculate customer growth or revenue sharing. Platform capabilities like reporting, feed/ file processing to import SLAs/ thresholds, notifications can help to track the revenue sharing.  Platform can accelerate implementing use cases like fraud detection which needs mechanism to gather data from various sources and analyze with data analytics and / or machine learning algorithms. With these foundational elements in place, domain architects and engineers can focus on writing ML algorithms rather than worrying about the preparation. Data being one of the hyperscalers cannot alone provide the desired value if not used with other platform components and ecosystem ability to define fraud criteria, business process and financial models associated with this.

### 3. Incubation Facility –

Enterprises always look for a facility to trial out their proposition before they invest in services from partners. This provides a great opportunity for organizations to become digital incubators for potential partners by providing an ecosystem which would help to build prototypes, rollout for select few customers. Incubation facility itself can become a revenue generation model.

There are various ways this can be achieved –

**Developer Portal & Test Environments:** Partners should be able to access API details (API specifications, sample payloads, error codes, access details, and limitations, if any) via this portal. This portal can help to educate developers and allows them to register their apps. This is one channel where organization will be able to receive feedback and suggestions from potential partners and developers about APIs exposed by them. Event portals provide features like tracking and billing for monetizing public access to event notifications. Ecosystem should provide test environments for potential partners to trial and test APIs or events.

**Digital Studios with smart device deployment and management facility:** This is a key aspect and needs considerable investment. Use cases like recommendations based on number plate detection of a car needs IoT device deployment and management at scale. These kind of use cases need prototyping, to build a right strategy for deployment, activation, and security of IoT devices. Prototyping may also want to test network availability from various network providers. IoT being one of the key hyperscalers cannot alone promise desired successful implementation without an ecosystem to test it for deployment, management, and integration.

Studios with rapid prototyping tools, low code no code platforms and few designers to help in user experience development will give added advantage.

### 4. Teams fostering Culture of Experimentation

An ecosystem with great platform, collaboration model and fabulous incubation facility will not be able to deliver desired results if organization doesn't focus on culture. Culture to invest on people believing the benefits of experimentation, Individuals ready to take risks, leaders having right acumen to put bets on new concept/products/services, teams always keen on developing innovative solutions/ utilities and a governing model which takes few ideas for industrialization are the pillars of successful ecosystem. The mix of these pillars can conceptualize, build, refactor, rebuild and balance most successful ecosystems in the industry.

### 5. Nimble working style

Nimble working style includes speed, curation of behavioral data, velocity of ideas and responsiveness to market forces across key dimensions - Hyper Productivity, Competitive Advantage, Responsiveness, Networked, Sentient, Smart Workplace & Agility.

Enterprises should strive becoming the "Live Enterprises" to leverage ecosystem efficiently.

This will need tools, techniques, willingness to remove unwanted processes, analyze employee data to understand and provide them more useful information while working.
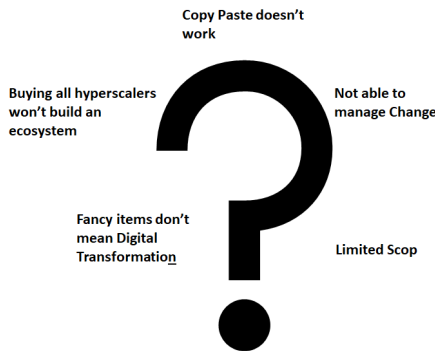
### 6. Sponsor:

Building an ecosystem is a first step. Making all stakeholders use it is the key thing for success. Stakeholders will believe if the message is delivered from a right level with a trust. "Ecosystem for everyone" should be the principle and sponsor should advertise the principle and advantages at all possible levels. Building and running a new ecosystem needs considerable amount of budget as well which should not become a hurdle at the time of building or operating the ecosystem.  Hence role of sponsor becomes important.

## What are the Problems while implementing Ecosystem – System integrator View

*Strive to enter through the narrow door; for many, I tell you, will seek to enter and will not be able.*

**Copy Paste doesn't work**

**Buying all hyperscalers won't build an ecosystem**

**Not able to manage Change**

**Fancy items don't mean Digital Transformation**

**Limited Scop**

There are many organizations who tried and are trying to build a successful digital ecosystem but very few are successful. Following are the reasons/ lessons learnt:

1. **Copy paste doesn't work** – This is a common mistake which was seen in multiple CXO level consulting engagements. CXO coming from a different successful organization, institution wants to build similar kind of ecosystem at new place. This usually fails because the environment, culture, region, market can be completely different even though it looks similar from outside. Building, replicating an ecosystem without knowing the environment is a plan for failure.

2. **Aiming ecosystem end state with limited Scope** – Many times, organization take capabilities into consideration, and it looks all good while they start the journey of new ecosystem. But the ecosystem starts showing its own limitations if the end goal to cater is very limited. Not thinking end to end user journeys and associated impact in future is the key reason for this. Ecosystems are not built-in short span, and they need to live for longer duration and hence thinking about limited scope can become a problem.

3. **Tactical ideas don't help Digital Transformation** – Launching a new mobile App in quick time span or changing the theme of a web site for a new look or rolling out a new "nice to have" feature doesn't mean you have achieved digital transformation. Neither it's a sign of a successful ecosystem. Not having measurable SLAs to gauge the success of ecosystem is one of the key problem areas.

4. **Buying all hyperscalers won't build an ecosystem** – Buying a cloud platform, data analytics product doesn't mean you have built an ecosystem. These are just few components of one of the key capabilities of ecosystem (e.g Central Platform). Unless and until you have all capabilities mentioned above working together, you are still working in silos. Multiple times, infrastructure head wants to showcase the success of buying cloud platform while the applications are not cloud ready. Channel's head may start new channels/ devices but probably he/she is creating silos for each channel and quickly it becomes a large problem for launching a new service consistently on all channels.

5. **Change is the most complex factor** – When organization build a new ecosystem for better future, older processes, tools, culture is bound to change. This would mean few of the old roles will be of no use or the ecosystem would demand new skills for specific roles. This may create uncertainty in people's mind about jobs, relevance, authority. This becomes major problem while rolling out new capabilities of ecosystem. And hence change management if not handled from the beginning can become showstopper for ecosystem rollout. Balance of people's aspirations and new ecosystem is must.

## How do you build a successful ecosystem?

**Align Organization Structure** → **Design the platform for evolvable scope** → **Create a roadmap considering all participants**

### Align Organization Structure -

There are two approaches to achieve organization alignment.

A - Build a new organization focusing on measurable KPIs of new ecosystem. There are two advantages of new structure. Leadership is certain that the budget allocated will flow completely into new initiate and while the new ecosystem is being built the core business with older structure remains intact. But there is always a risk that new ecosystem is not adopted by existing organization culture as they will see the new ecosystem as an outsider who is challenging the existing well-oiled machine.

B. Pilot the new ecosystem in a department and create catalysts/ brand ambassadors - Piloting the new ecosystem for a small group of people within same organizational structure, creating a success story and then passing the message via brand ambassadors is seen as successful strategy at many places. Speed of implementation will be slow in this approach.

Digital transformation needs a culture to respond to market changes and find opportunities to innovate. But for large, incumbent organizations with complex systems, it is not always easy. As several of them embark on their digital transformation journeys, the opportunity to transform into agile, responsive entities, at enterprise scale is a compelling opportunity. In other words, the need to become a Live Enterprise - that continuously evolves, learns, and innovates, becomes an imperative. And hence organization should use change management effectively to align the organization for new ecosystem.

## Design the Platform for evolvable scope –

New ecosystem should keep an eye of unexplored opportunities while analyzing end to end user journeys of existing and new customers. It's not needed to build the platform for all integrations and functional capabilities, but the future scope should aim on ever evolving capabilities based on end-to-end user journey of customer. It's always not possible to build all platform capabilities (technical / functional) inhouse and it's not a bad idea to buy few of the components / elements of the platform if they abide the architecture principles of evolvable platform.

## Create a roadmap considering all participants –

"Ecosystem for all" should be the moto while designing the roadmap. Ecosystem should consider all possible participants and roles (including the existing ones which might not be relevant in future) and map the ecosystem capabilities with benefits to them at every stage of the roadmap. This mapping shows the efficient way to maximize the impact. The places where benefits are more should take the priority while building ecosystem capabilities. This becomes the basis to plan for initiatives of the roadmap. Following points are important while defining the roadmap -

a. **Defining Value:** Associating incremental value based on mapping explained above and which can align to leadership vision is key to build successful roadmap. Securing senior management commitment and budget is the success criteria of a good roadmap.

b. **Foundation comes first:** Its necessary to have strong foundation before we built more capabilities. Foundational initiatives like building horizontal technical capabilities of platform should be the first part and then move to domain specific configurable components/functionalities.

c. **MVP / Build small, Test Quickly and scale for success** – Identifying an MVP use case /product line/service line requires effort. This MVP will get priority in the roadmap. Business and IT can work collaboratively to prioritize use cases and decide the scope of MVP which can potentially create a positive wave. This should be a project with significant reward and manageable risk. Consider enabling the MVP for selected few / loyal customers who can become brand ambassadors of new initiatives.

d. **Skills & change management** – Major transformation needs core skills for successful implementation. Initiatives to upskill, retrain and hire should be a separate measurable initiative. Change management is a vast topic but it should not be ignored in the event of building new digital ecosystem. Empowering people to work in new ways is mantra for success.

e. **Roadmaps are built to evolve** – Evolvability should be a key characteristic while building roadmaps. Tracking, room for changes and impact analysis should be estimated and communicated to senior management while building the roadmap.

f. **Operating Model & Governance** – Creating a "digital way of working" requires top-down communication, incentivized initiatives and appropriate tools and techniques. Governance should not be red tape but as an accelerator for this transformation.

As Organizations are actively involved in building ecosystems, they should focus on following best practices and avoid the problem areas explained in this paper.

The balance of nature always makes sure that ecological systems are usually in a stable equilibrium. The theory has been used to describe the relationship of all elements within ecosystems and relationship between ecosystems. The same principle applies to digital ecosystems which play key role to achieve stable equilibrium of enterprises.

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