# Readiness

## Readiness Overview

As mentioned in the introduction, the purpose of the readiness phase is to prepare the enterprises and organization for the blockchain effort and define the required capabilities. The generic structure of the blockchain readiness phase is similar to that of any other emerging technology readiness guideline or strategy framework such as M3 but there are nuances specific to Blockchain that should be understood, undertaken and considered before calling an organization ready for a blockchain initiative. The purpose of this section is to highlight these blockchain-specific nuances in the context of a generic framework like M3, which are well understood by the government agencies.

### Key Goals

The key goal of readiness phase is to prepare the government agencies and organizations for blockchain effort and define the required capabilities, readiness phase should aim to meet the following goals to increase the likelihood of success of the following program:

1. Stand-up Blockchain governance office
2. Define scope of blockchain services and governance processes
3. Assess risks and establish risk mitigation processes
4. Assess existing system's integration readiness
5. Assess selected KPIs evaluation readiness

### Key Participants

Apart from the “assessment” phase participants, the key participants in blockchain readiness phase include blockchain subject matter experts, who may or may not be from the agency initiating the program, subject matter experts from lines of business and systems with which the proposed blockchain is supposed to integrate and a blockchain enterprise architect who has the responsibility of creating the governance framework and leading the capability definition exercises.

### Approach Guidance

In most cases, assessment phase will precede readiness to ensure the use case selection and business relevance has been determined. In other cases, government agencies may actually have assessment and readiness phases running in parallel. This is specially true when an agency has already completed a PoC and a larger project is being planned or when the respective agency is integrating as a participant or a user with an external agency which has already implemented the distributed ledger.

The following graphic details the key activities, inputs, enablers and outcomes an that are advised to ensure the completeness of the readiness phase:

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### Key Activities

A. Stand-up Blockchain PMO and governance office

A.1 Establish PMO Processes

A.2 Establish Enterprise Architecture Guidelines

A.3 Conduct Procurement Planning

A.4 Estimate initial Cost for the selected Business Case

A.5 Create Expected Benefits Chart

B. Define scope of blockchain services and processes

B.1 This will also help in identifying systems to be integrated, SoR, SoE etc. alongwith associated risks

B.2 <M3 Playbook> has good material but we need to choose what is most relevant for a blockchain initiative B.3 Establish Enterprise Architecture Guidelines

C. Establish risk processes

C.1 Establish Risk Management Processes

C.2 Conduct initial Risk identification and mitigation

C.3 Prioritize risks based on criticality and area affected e.g. data security, change management etc.

D. Assess existing system's integration readiness

D.1 Define AS-IS system context

D.2 Identify SMEs and PoCs for affected systems and interfaces

D.3 Define System Integration Management Plan

E. Assess selected KPIs evaluation readiness

E.1 Reprioritize KPIs with the new understanding of risks and scope

E.2 Define baseline metrics for selected KPIs

E.3 Conduct new value "discovery" - not all the benefits of new technology can be defined by existing KPIs

### Expected Outcomes

The two-pronged strategy to prepare the agencies for blockchain efforts as well as define key capabilities should result in the outcomes depicted in the graphic above. At the end of this phase, the agency should be able to answer the following questions:

1. Who are the key participants in the proposed blockchain initiative?
2. How will the security be managed for the key participants?
3. How will the onboarding/separation happen for members?
4. In case of cross-agency collaborations and open-source consortiums, who will be responsible for managing the changes?
5. What are the key technological, business context, security, performance, user experience, program management and governance related risks specific to the proposed DLT solution?
6. What is the proposed governance and management structure?
7. Who, what and how will they be impacted by the proposed solution? What is the strategy to manage the change?
8. Are the KPIs defined and baselined?
9. Does the initial schedule and estimated cost allow for agile product development where the time and cost can be recalibrated based on on-going learnings?
10. What is the procurement strategy for the proposed program?
11. What are the key business capabilities of the proposed system?

## Key Considerations

Distributed Ledger Technology is yet to be proven at production scale for stereotypical public sector enterprises and hence best practices from production implementations are yet to emerge. Following are some key considerations that blockchain evangelists, CIOs and enterprise architects should consider as they conduct the readiness phase activities:

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| --- | --- | --- | --- | --- |
| **No.** | **Key Consideration** | **Description** | **Analysis** | **Takeaway** |
| 1 | Project Management Approach | Decide on a project management approach that allows management of all the network participants and their activities | While setting up the blockchain PMO and governance processes, a critical piece would be to decide the project management approach for the initiative. Given that the technology landscape is so fluid, Agile would be better than traditional waterfall or iterative waterfall approaches for blockchain projects. Agile allows, cross-functional, cross-partner teams to remain continuously involved in the product development. This aspect is also very critical for success of any DLT initiative, given the number of participants and responsibilities., | Agile Product Management is best suited to ensure continuous stakeholder involvement and response to continusously changing landscape |
| 2 | Consortiums | Join, or in rare cases, create, consortiums which have common goals | Blockchain ecosystems typically involve multiple parties in an industry working together in a consortium to support and leverage a blockchain platform. It is often better to choose the consortium and become a participant once you have assessed your use cases and scope. | It is best to be part of an industry consortia to get maximum benefits from a given blockchain ecosystem. These consortia will be responsible for standardizing the blockchains in the future. |
| 3 | Enterprise Integration | Determine the “context” of your blockchain sytem | For most of the enterprise use cases, Blockchain technology will be part of the core infrastructure and should be able to integrate seamlessly with other legacy systems. |  |
| 4 | Value Transfer Risks | Identify and manage value transfer risks for the value transfer use cases | Blockchain or Distributed Ledgers need to manage the risks that were being managed by the central intermediaries whom they aim to eliminate. These include fraud detection, key management, asset security and other risks assoxiated with the value transfer network. |  |
| 5 | Consensus Mechanism | Define the consensus mechanism | Create common understanding on consensus & security mechanisms and corresponding participant liabilities and responsibilities |  |
| 6 | Performance Expectations | Establish pragmatic performance expectations in terms of metrics such as transaction speed. | Blockchains are not a replacement of traditional high-performing super-tuned databases. They are a complimentary technology meant to solve different problem domain. This understanding needs to be evangelized, ensuring that non-functional requirements for blockchain initiatives do not have the same metrics as that of traditional centralized databases. |  |
| 7 | Framework based design | Establish guidelines for blockchain technology framework which is modular, reusable and extendible | Tech Landscape is fluid so making completely reusable tech is not an option. Projects based on today's solutions will have to be reworked or reimplemented onto the eventual leading platforms in the future. |  |
| 8 | Cross-functional team | Establish a cross-functional requirements and government team | In addition to enterprise IT, business and functional teams, blockchain initiatives must engage with customers in this phase. The governance team must ensure to engage risk management, regulatory compliance, IT operations, Finance, Accounting and Tax teams to name a few, to ensure that the requirements of these stakeholders is recorded appropriately. |  |
| 9 | Talent Management | Define the skill-set and training needed to implement and maintain the blockchain initiative | Organizations will need experienced IT talent who can implement & maintain blockchain and support network participants. Government agencies may have to rely on technology partners and third-party vendors that have a working knowledge of different blockchain ecosystems. CIOs should consider training and developing internal talent while, at the same time, leveraging external talent on an as-needed basis. |  |
| 10 | User Experience | Design with User-centricity as the top-level priority | Blockchain is generally considered a back-end technology which end-user facing system rarely see directly. That may or may not be true for all the use cases. Barring, the underlying code and algorithm every user touch point must be designed with user-centricity focus. All the users such as backend, admin and enterprise users should get the same quality of experience as the end users. This not only helps in enterprise-wide adoption in long run but also helps in covering all the non-functional requirements such as privacy, confidentiality, security and personalization . | UX is critical for enterprise wide adoption and should be looked from middle/back end users perspective |
| 11 | Emerging tech specific risk management |  | Tech Immaturity, Availability and sustainability of skills, Lack of standards, Acceptability of disintermediation, switching and sunk costs, Network effects, securing agreements, assumption risks, stakeholder adoption |  |

## Outcomes

To ensure a government agency’s readiness for an emerging technology like blockchain, several internal and external factors have to be assessed, and in the absence of some defined and established. The outcomes are generally these definitions and high level plans which are further refined in subsequent phases, through out the lifecycle of the initiative. The list below can be used as initial guidance on “how does success look like” for blockchain “readiness” phase.

* Key network participants engaged with formal agreements.
* Security strategy for participants defined and mutually agreed between different parties
* Onboarding/Separation strategy defined for DLT participants
* In case of a new consortium, responsibilities and governance model defined
* Mitigation Plans in place for the following risk categories:
  + Technology
  + Business
  + Security
  + Performance
  + User experience
  + Governance
  + Adoption
  + Regulatory Compliance
  + Enterprise Integration
* Change management Strategy defined for all the impacted parties.
* Key Performance Indicators defined and baselined for the selected business case
* SMEs and PoCs from cross-functional teams and integrating systems onboarded
* Procurement Strategy Defined
* Initial Schedule and master plan defined
* Business Capabilities Defined

The business case selected for implementation, external context of the implementation and stakeholder and regulatory requirements may result in additions or modifications to this list.

The goals listed in section 1.1.1 can be achieved by conducting the activities listed in 1.1.2 and considering the best practices mentioned in 1.2. At the end of a successful readiness phase, the stakeholders should have a joint understanding of the responses to the questions highlighted in section 1.1.5.