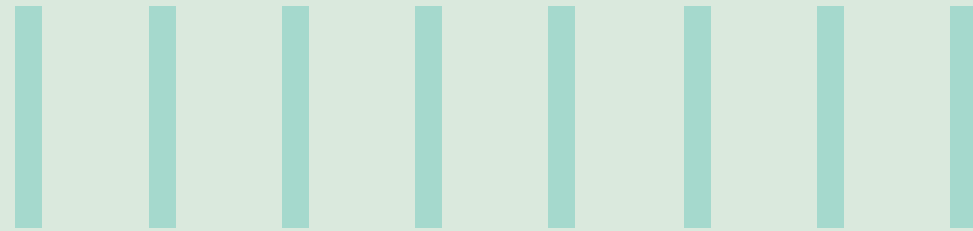




# LEGACY BUSINESS APPLICATION - UPGRADE OR RE-IMPLEMENT?

Microsoft Dynamics 365 practitioner's view point



## Abstract

Large number of customers who have implemented enterprise business applications historically are at a stage where they realize that their current systems have outgrown their utility and are unable to embrace the latest features of the contemporary available options and/or business needs of the day. Over time business processes within the organization, change and outgrow the incumbent systems. In some cases, technology and/or architecture on which the business applications are based, becomes obsolete and does not support scalability and is high on maintenance cost. Such organizations often face dilemma on the fate of their business applications. It is not easy to decide whether to upgrade or replace or to continue investing in the existing system. This paper looks at the key considerations to make while organizations decide to move to modern business applications either by upgrading or replacing them and weighs the pros and cons of Microsoft Dynamics 365 Business Applications as a credible and viable alternative.

## Why Upgrade

Business applications are used by organizations across geographies and industry verticals. Organizations have significant investments in implementing and maintaining their business applications. Unfortunately, over time technology has evolved and business applications of the yore are not able to keep up with digital age technologies. Business Applications earlier needed large investments in infrastructure and for upkeep.



### User Interface

Business applications generally had client server architecture and needed desktops to install and run client applications. Client applications were platform dependent and ran only on certain OS. Modern business applications have much more user-centric interfaces and allow access from browsers and mobile devices (Platform and OS independent). New UIs are touch-enabled and Role-based which make them highly intuitive and productivity-oriented.

### Application Rationalization (Consolidation, Replacements and Integrations with application)

Business processes in organizations evolve over time. Business applications do not necessarily keep up with the evolving business processes and hence organizations procure applications to cater to evolving business processes and integrate them with business applications. Over time the whole landscape becomes complex and cumbersome to maintain. Modern business applications offer more depth in business processes and come with peripheral technologies that make application consolidation a possibility.

### Product Support (Architecture)

Product vendors over time phase out support for older versions and do not

provide patches for bugs and/or security issues. Organizations use their in-house and/or third-party vendors to maintain these business applications which is expensive and not very reliable.

### Opex Vs Capex

Earlier business applications needed on-premise infrastructure and licenses were required to be purchased upfront. Infrastructure needed revamp and more licenses needed to be purchased as organizations grew. This required frequent capital expenditure. Today, most business applications are cloud-deployed and infrastructure and user licenses can be added on demand and grow with organizations while allowing flexibility to scale down if needed. License and Infrastructure are charged on a per-month basis and do not require huge upfront investment.

## Dilemma and Decision

While it may seem difficult to decide whether to upgrade or replace the organization's business application, we have identified parameters which can be used as guiding stars for this decision-making process. Two such critical parameters are

1. **Business process evolution within the organization** – the degree to which

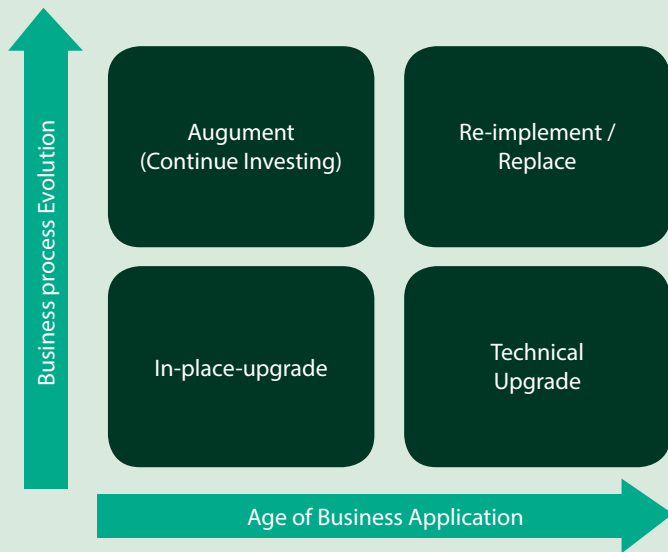
the business processes within the organization have evolved over time, is a critical guiding parameter in deciding the fate of organization's business applications. One should critically look at some key indicators that typically mark the evolution of business processes, such as

- a. Mergers and acquisitions
- b. Expansion beyond organizations' initial geographies of operation
- c. Addition of product / service lines

2. **Age of Business Application** – Typically the question is "How old is too old?". When does a system become too old and warrants replacement? There are factors which show age of business application

- a. **Version** – How many versions have been released by product vendor since implemented version
- b. **Support Coverage** – Is the version implemented still being supported by product vendor
- c. **Technology** – Is product technology still relevant
- d. Compliance with modern enterprise architecture demands

Based on these parameters we have come up with following Decision Quadrants. How the application fares on two parameters mentioned above, is used to decide the future course of action.



• **Cons of In-Place Upgrade**

- Going Forward Microsoft will be releasing upgrade patches and customer will have to incorporate these upgrade patches within a short period of time. This will make maintenance challenging in cases where there are other business priorities
- In cases where Microsoft decides to deprecate certain features that are in use for a particular customer, it may cause temporary void until equivalent feature made available stabilizes

**Technical Upgrade**

Technical upgrade means that only the code is upgraded to latest version of the business application, but the data migration is not done. Technical Upgrade is suggested when product vendor has released multiple versions of the business application since the implemented version. Once the business application is few versions old, generally there is no direct upgrade path available (Upgrade is generally a multistep process, which requires upgrade from the implemented version to an intermediate version and then to latest version). While code upgrade can be done in multistep process with incremental effort, data migration is typically humongous effort in a multistep process.

**In-Place Upgrade**

In-Place upgrade is typically suggested when the age of application is low and business processes in the organization have not evolved much. Low age of application typically means that only 1-2 versions of business application have been released by product vendor and product vendor provides tools to upgrade code and migrate data. Availability of tools from product vendor makes upgrade exercise less risky and keeps the cost of upgrade low.

Microsoft Dynamics 365 will come in picture in In-Place upgrade scenario only if Legacy application is Microsoft Dynamics itself.

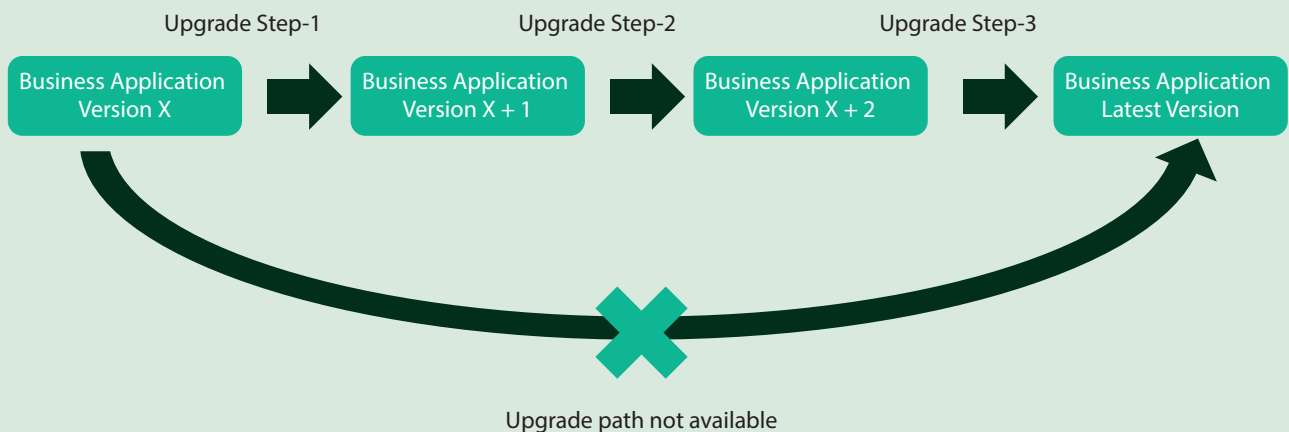
**Viewpoint on In-Place from Microsoft Dynamics 365 perspective:**

• **Pros of In-Place Upgrade**

- Microsoft releases updates to D365 regularly. With the Extensions approach

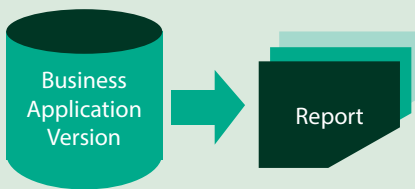
for customizations, base/standard codebase is easy to maintain and upgrade. This will ensure application is always on latest version

- New features that are made available with each latest version will be available to explore and use as the business processes evolve
- With in-place upgrade, both codebase and database are upgraded to recent version. New out-of-box reports can be run on historical data as well
- Since application sits on Microsoft owned Azure cloud, for future enhancements that are required to meet the evolving business requirements, Microsoft will help with the deployments that needs to be planned and scheduled
- Disaster Recovery will be made available as Microsoft will ensure DR for environments on cloud

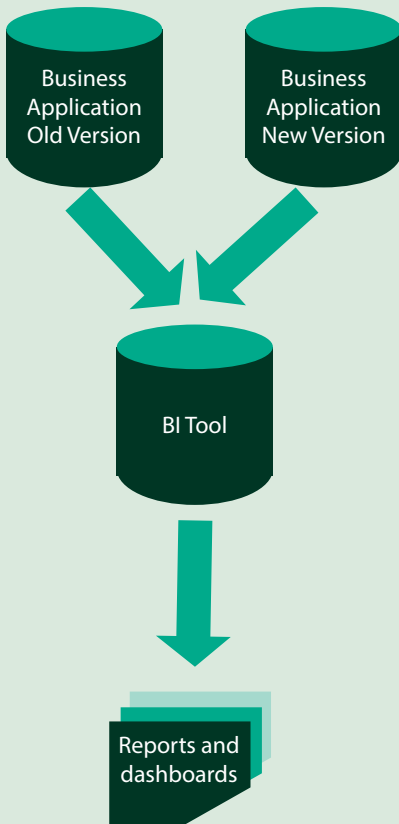


Since this approach does not involve data migration, obvious question arises that what happens to the data from older business application version and how can reporting be done on data from both old and new version together. Organizations can opt to go for any BI tool. BI tools can pull data from both old and new versions and will not only provide reports but will also provide advanced dashboards and business insights.

### Reporting in old business application version



### Reporting after technical upgrade and BI implementation



**Microsoft Dynamics 365 will come into picture in Technical upgrade scenario only if Legacy application is Microsoft Dynamics itself.**

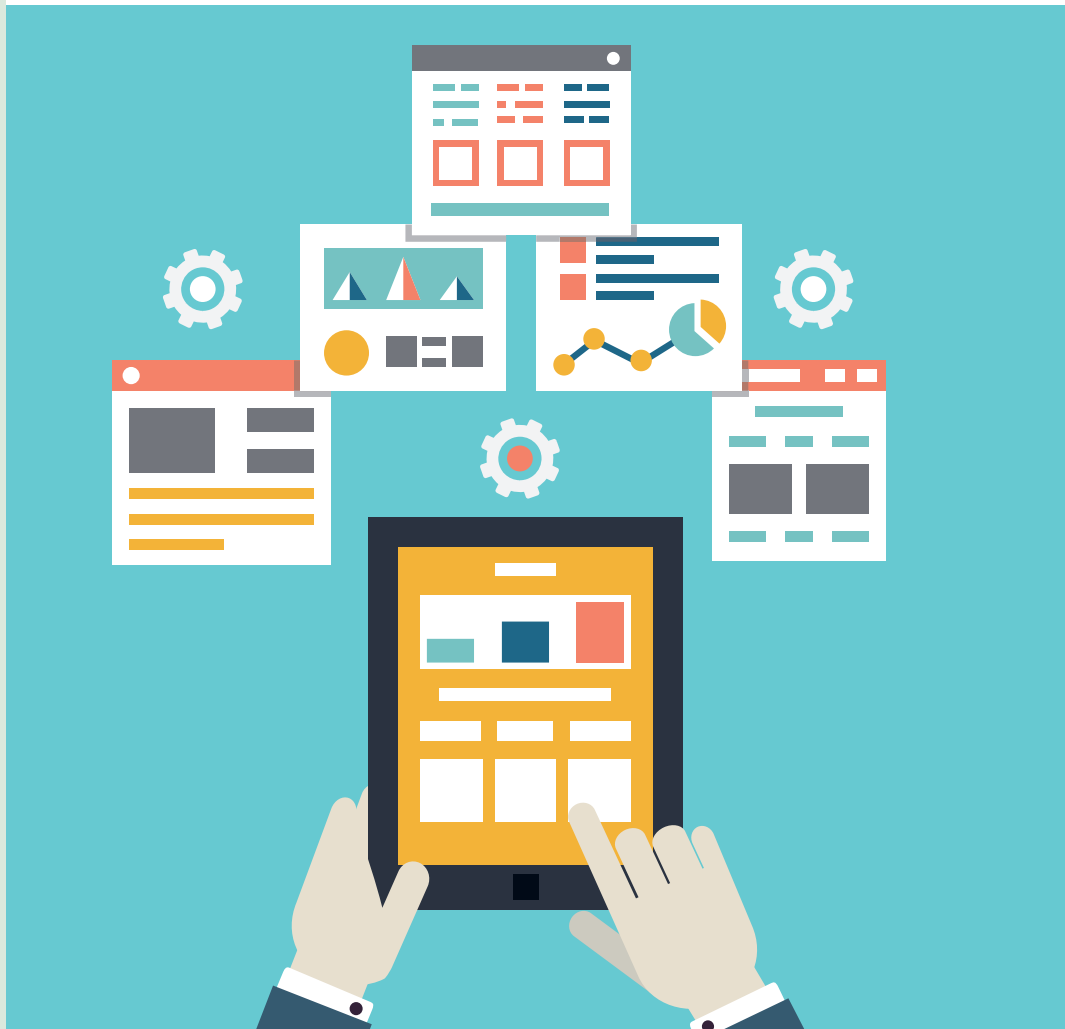
### Viewpoint on Technical Upgrade from Microsoft Dynamics 365 perspective:

#### • Pros of Technical Upgrade

- Latest version of Microsoft Dynamics follows Extensions approach for customizing the base package. Technical upgrade will ensure all customizations follow this approach. From then on, updates released by Microsoft to D365 can be deployed with minimal effort as base code stays intact
- Technical upgrade ensures that existing business logic written on top of base application package is refactored and ported to latest version. This is done at a fraction of

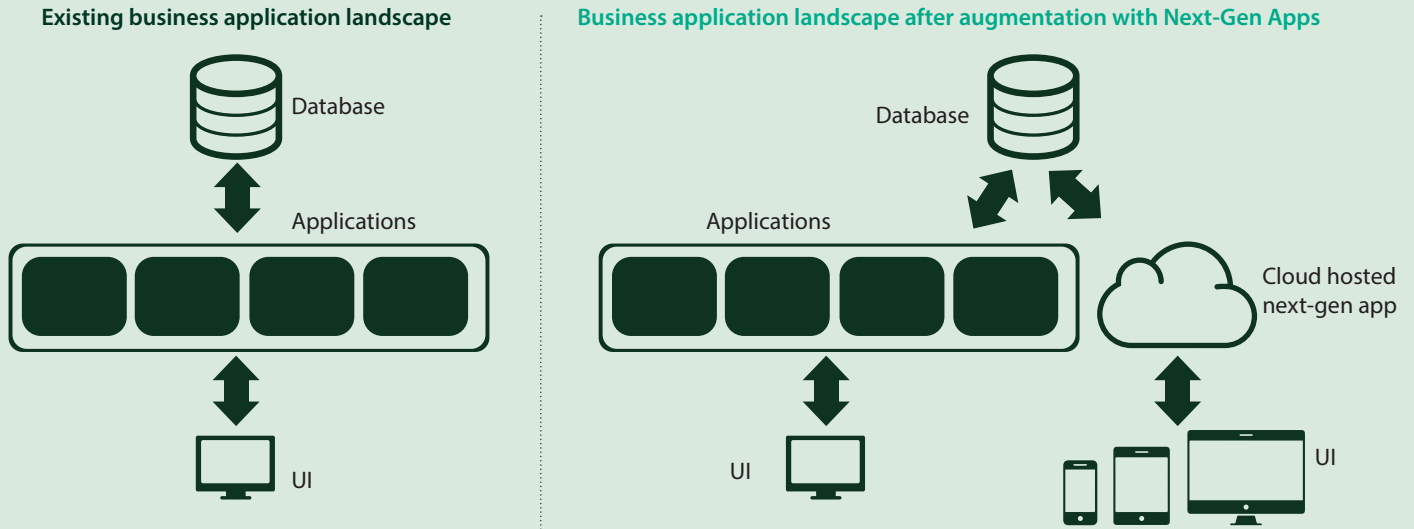
cost as compared to cost of writing the whole code again

- With technical upgrade, as historical data is archived, database size after upgrade will be minimal and will lead to performance improvement for transactions and reports
- Although the historical data is archived, Microsoft Power BI reports can fetch data from both historical and upgraded application. Application user will not notice the difference. In addition, user will be provided with advanced dashboards and business insights
- **Cons of Technical Upgrade**
  - Additional investment is required in Power BI tool to analyze and report on data from legacy version.
  - Additional investment is required for maintaining the hardware infrastructure of legacy version.



## Augment

Augment is a preferred option when the current business application is fairly new and can continue to be a useful platform if we augment & extend it with Next-Gen apps. In such cases, these apps tie together the digital experience while co-existing with core business application platform. Here data residing in legacy databases can be accessed through more cost effective and agile platforms that are cloud /mobile enabled.



## How to Augment Existing Legacy Business Landscape using Microsoft Dynamics 365

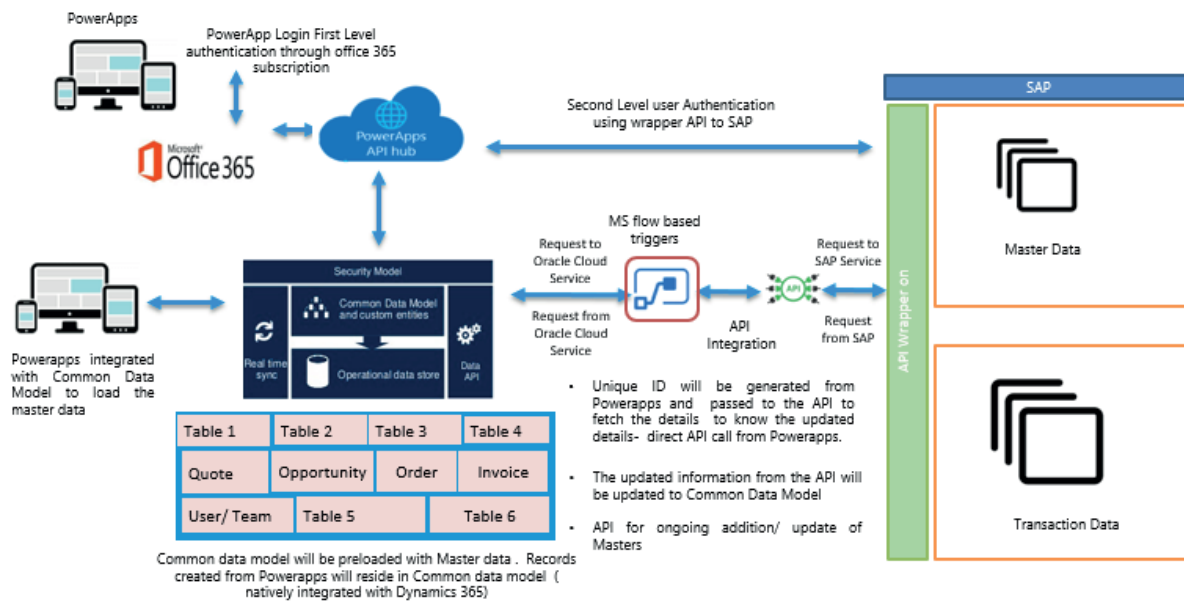
Microsoft stack on Azure provides multiple opportunities to Augment existing legacy business applications. Few possibilities are discussed here

- **Power BI based reporting Insights:** Power BI can be leveraged to drive

deeper data insights from any business application. Adoption of the app and common data model can also be driven using adoption dashboards on Power BI

- **MS Flow Based Integrations using Power Apps:** Leverage Microsoft flow to trigger event based, listener - subscriber integrations. For example,

if an order shipment details is updated in model based app, the details are synced to Dynamics 365 natively and MS flow triggers an API to the listener service to update SAP purchase order table. The below is a sample architecture diagram showing how PowerApps, flow can drive connected operations



## Viewpoint on Augment from Microsoft Dynamics 365 perspective:

- **Pros of Augment**
  - Platform Coexistence for connected operations - Dynamics 365 Customer Experience / Finance Operations / Business Central and SAP / Oracle can coexist
  - PowerApps can help build a UI agnostic solution for example around order management, inventory management, etc. Most often than not users are more inclined to use an app or a web application that is easy to use and is agnostic of the backend technology

- Using the common data model platform for example, a typical purchase order process spanning across opportunity management using Dynamics 365 through order placement, order tracking, quote and invoice can be laid out using model based app
- Access Anywhere is made possible and on various devices

### • Cons of Augment

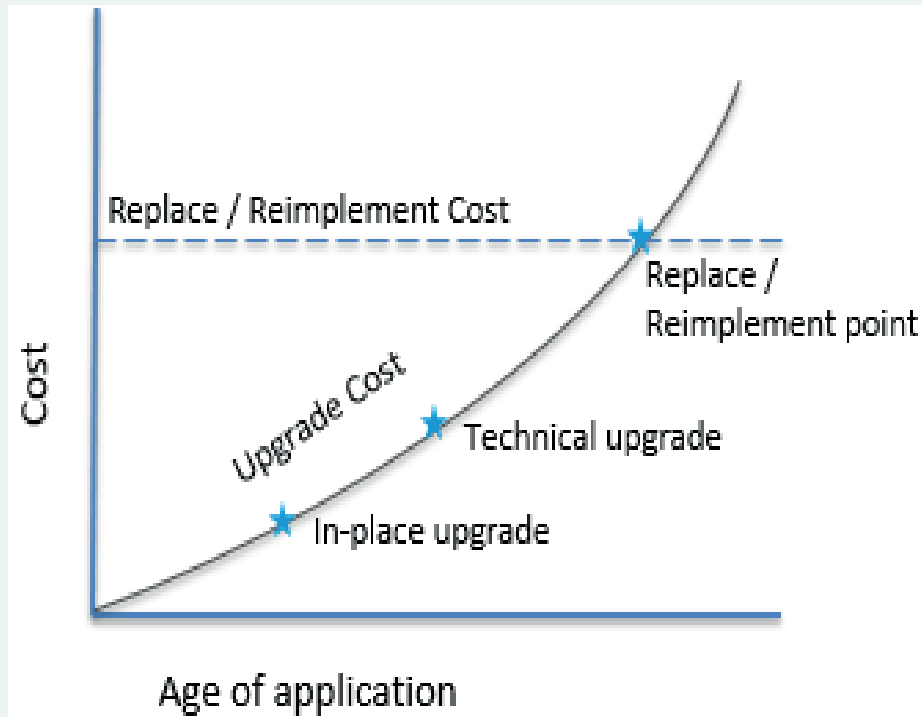
- Augmenting Legacy Business Applications with Microsoft Dynamics 365 will entail adding more business applications to the mix. This may lead to added maintenance cost.

Organizations should use Augment as Intermediate step and go for Replace / Re-implement in medium term.

## Replace / Re-Implement

When business application is several versions old and process gaps over time are glaring, organizations should critically look at re-implementing or replacing their business application. Upgrade in such case could be very costly and still may not give desired outcome. This should be treated as an opportunity as well, because in such scenarios organizations can decide to change the product and look for product more suited for current business scenarios and their vision.

## Upgrade cost assessment



Cost of upgrade will be minimal when age of application is low. Graph above shows how upgrade cost increases with the age of application. Once the application is several versions old, cost of upgrade climbs up and, in most cases, Replace / Re-implementation becomes a cheaper option as compared to upgrade.

### Viewpoint on Replace / Re-implement from Microsoft Dynamics 365 perspective:

#### • Pros of Replace/Re-implement–

- Replace / Re-implement approach is relevant for customers who are on very older version of Microsoft application and who are moving from non-Microsoft application to D365. In either case, new and rich functionalities from latest version of D365 are made available.
- D365 application on cloud is available with flexible licensing models that allows organizations to pay per user. The cost per month will vary based on the actual

consumption / user count.

- Deployments of future enhancements and Disaster recovery will be managed by cloud application vendor, Microsoft, in this case. This will reduce the some of the costs related to release management and infrastructure

#### • Cons of Replace/Re-implement

- Replace is not only an investment in terms of getting the New Age Business applications and Infrastructure, it is also a big investment in terms of Organizational Change. Some organizations may find it difficult to manage this change



## Conclusion

While it is a complex decision driven by multiple factors, in this age of modern business applications, there are multiple routes that an organization can take to make the transition risk free. With agile cloud based deployment methodologies and an API based architecture, this can also happen in a structured, componentized movement as against the age old big bang approach. In addition, modern application systems have an architecture which give both the business and the IT managers to explore multiple productivity enhancement peripheral supplemental technology enablers which make a compelling case for making this move. Infosys has established tools and accelerator based service offerings that can help organizations navigate through this journey

Also, as highlighted, Microsoft Dynamics 365 suite of products gives a lot of flexibility and options for organizations to embrace this transformational change.

## About the authors



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Amol has over 16 years of experience in ERP and CRM packages with expertise on D365/ Microsoft Dynamics suite of products and exposure to various sectors. In his current role as Delivery Director, he leads the delivery for D365/ Microsoft Dynamics at Infosys; focusing equally on “build, run and grow” aspects of the business. His responsibilities are to provide leadership to large D365/MS Dynamics strategic programs. In addition, he focuses on mentoring and providing thought leadership to teams. He is based out of Hyderabad. Email contact: [AmolKumar\\_Gupta@infosys.com](mailto:AmolKumar_Gupta@infosys.com)



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