

## **NCCSD Systems Workgroup Vendor Forums – Q&A related to Low Code/COTS”**

### **Vendor Name: Microsoft**

Please enter your responses into this document, but feel free to send any other attachments as well.

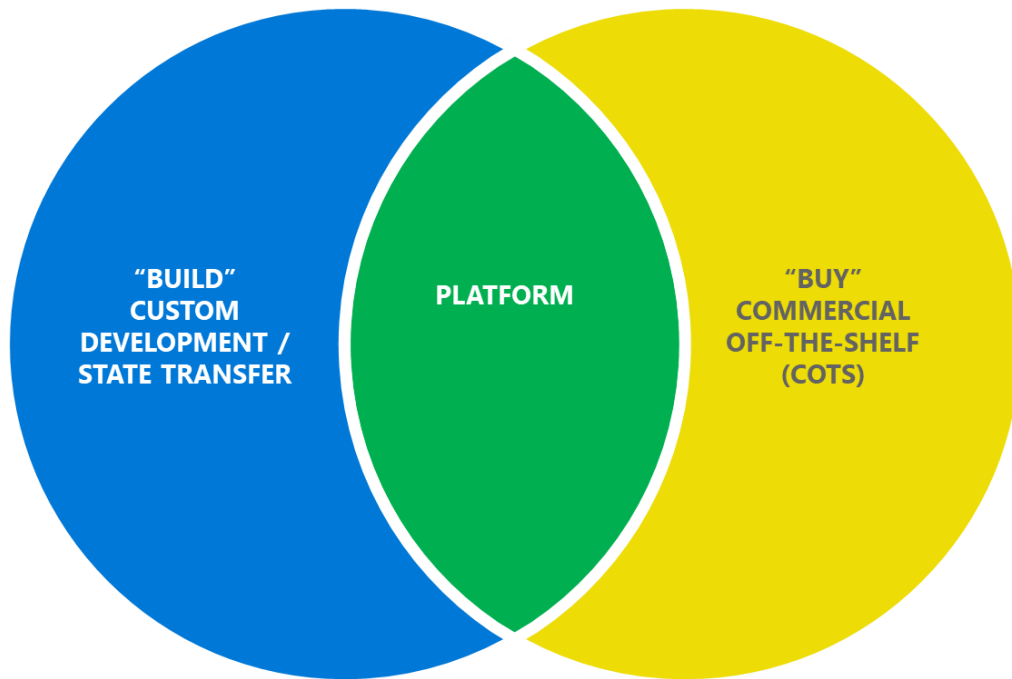
### **Questions:**

- 1. Since there is not yet a consistent term or definition for this approach, please give your company's description, including your terminology and definitions. How is this approach different from a "custom" build of a child support system? If you choose to do a quick demo or screen shots that would be welcome.**

For many years States only had two options when planning for system modernization, “custom/transfer versus a commercial off the shelf (COTS) product--essentially a “buy vs. transfer” decision. The build option involves the development of custom coded software or the transfer of a custom-coded solution from one state to another. The buy option involves purchasing (COTS) software. COTS is software that you buy and install on your devices and works upon installation—for example products like Microsoft Excel®. Fortunately, advances in technology and cloud computing, have given rise to mature integrated platforms that provide a powerful third alternative, Platform or Low Code. But there is a distinct difference between Low Code and COTS.

One of the best ways to describe these options is to compare them to purchasing a bookshelf for your home. A custom built-in bookshelf can be constructed by a carpenter to your exact specifications: fit, size, color, wood, etc. It can be modified but only by a carpenter and those modifications will also be custom. This option is the most expensive, takes the longest and you won't be able to take a built-in bookshelf with you when you move or remodel. On the other hand, a COTS product is much like purchasing a pre-built bookshelf. There are a limited number of sizes, colors, finishes and shelves to choose from and there is little or no ability to expand or modify. Often the buyer is responsible for assembling the unit and it may or may not fit in a new or remodeled home. This is the quickest option. A platform is more like a purchasing a bookshelf from IKEA – there are a wide variety of pre-built modular components like cubes, shelves, doors, molding etc. that you select and configure to create your unique bookshelf. In the future you can add or change the configuration of your components to meet your needs. If you move or remodel, the components can be reassembled in a different configuration. You or

the store can assemble the components. This option illustrates how Platform/Low Code combines the best advantages of build versus buy while limiting the disadvantages.



**Figure 1: The Platform Approach**

Microsoft Dynamics 365 is a low code, application platform which includes a Customer Relationship Management (CRM) solution (case management) and Enterprise Resource Planning (ERP) solution (financials). Microsoft Dynamics 365 is an enterprise scale low code platform designed to support complex case management and workflow used by social services agencies across the country. **Dynamics 365 can provide approximately 70% of the features and functions needed for a modern child support system “out of the box” through point and click configuration.** Think configuration of bookshelf components. This low code platform approach can deliver functionality to state child support agencies faster and with less risk than traditional system modernization approaches. The Dynamics 365 Platform is designed to support millions of users, is continuously upgraded by **billions** of dollars in investment annually—imagine having a solution that is being constantly modernized.

A summary of the analysis of low code platform versus COTS and custom development is shown below followed by a more detailed discussion of each factor.

Category	Custom Development	COTS	Platform Configuration
Development Cost	⊗	☑	☑
Maintenance Cost	⊗	☑	☑
Ability to Customize	☑	⊗	☑
Ability for Enhancements	⊗	⊗	☑
Time to Implement	⊗	☑	☑
Ease of Implementation	⊗	☑	☑
Minimal Technical Expertise Required	⊗	☑	☑
Provides Competitive Advantage	☑	⊗	☑

**Figure 2: Platform Configuration vs COTS and Custom Development**

Each of the categories listed above, the respective benefits and discriminators are explained in greater detail:

- Development Cost:** Custom development is generally recognized as the highest cost approach. COTS and Low Code Platform Configuration options take advantage of an economy of scale factor because the core of their solution has already been developed by the vendor and is leveraged many times across a large number of customers. It is usually far beyond the budget ability for most states to match the initial and ongoing investments of these models with custom development.
- Maintenance Cost:** Maintenance cost is closely related to development cost. Custom solutions that are expensive to implement compared to COTS and Platform Configuration, are also expensive to maintain for the same reasons. Additionally, mastering the intricacies of maintaining a custom-developed solution is most easily accomplished by the same team that constructed the solution. COTS and Platform Configuration don't share this challenge because they are abstracted at a higher level that is easier to learn, understand, and maintain, usually with less costly resources.

- **Ability to Customize:** Customization allows you to build exactly what you want, but it is also a higher cost to build and maintain over a long period of time. By comparison, there are typically very few opportunities to customize a COTS product to meet your requirements since the product was designed for the mass market and lowest common denominator. COTS products work well for repeatable, commodity functions, but our experience with other states has proven that each state has enough unique facets to their child support business functions that make COTS implementations challenging. Platform Configuration, however, is designed to not only allow for customization, but provides multiple ways to customize. Microsoft's Dynamics 365 Platform can support the majority of state specific child support requirements through "point and click" configuration, which is far easier, faster, and cheaper than customizing through custom-code development. If a requirement cannot be met through configuration, then we can use custom code to develop that capability; although we recommend keeping this practice to a minimum.
- **Agility for Enhancements:** Agility for enhancements is closely related to the ability to customize. Where custom development scores high marks for customization, the level of agility it provides the solution is generally low because of the time and effort required to make changes and test custom code. COTS solutions also struggle with agility due to strong dependencies on the COTS' manufacturer to include enhancements in the common product base. Conversely, the minimal code and point and click configuration abilities of Platform Configuration enable a high degree of agility to add enhancements to a technical solution.
- **Time to Implement:** Custom-development solutions are typically built from scratch, which translates into long project durations, especially compared to COTS approaches, which are already constructed, and only require installation and minor configuration. Platform Configuration is a middle point. Implementation times are generally shorter than custom development because core capabilities, such as workflow, document management, security, and auditing, are already provided and don't need to be built from scratch. Timelines will be longer than COTS installations, however, due to the time required to map users' business requirements to the necessary configurations.
- **Ease of Implementation:** Custom-developed solutions typically have many different components, underlying technical packages, and potentially millions of lines of source code that yield a high degree of complexity. Already-built COTS solutions require installation and setup and have very low complexity levels. Platform Configuration has moderate complexity levels based on the configurations and customizations that users require.
- **Minimal Technical Expertise Required:** The intricacies of custom development require a high degree of technical competence to design and build complex solutions properly. Based on the out-of-the-box installation approach, the COTS approach has minimal technical expertise requirements. Platform Configuration requires moderate technical skills to verify the solution extensions and integrations are properly performed; though it is far less expertise than custom development.

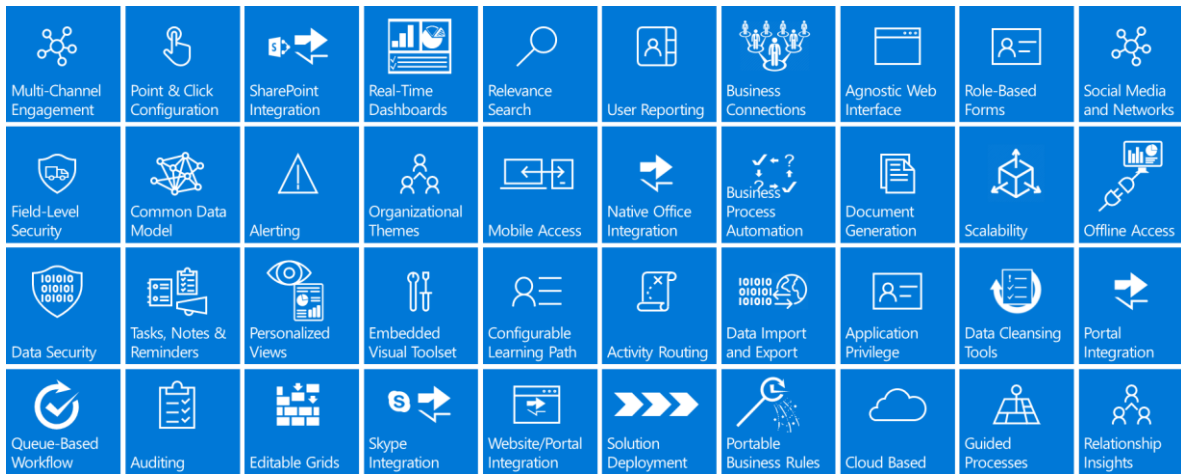
The powerful, easy-to-configure, cloud-based capabilities of platforms can support all of today's key child support functions. Yet its adaptable foundation enables Platform's to easily support new and evolving approaches in child support like Fatherhood Initiatives and Behavioral Intervention for Child Support Services. A Platform combines the strengths of custom development and COTS to deliver a solution that is specifically tailored to a State's child support unique business requirements, with the agility required to meet the current and future child support needs.

**2. With reference to the "core" functionality required by the OCSE Systems Certification Guide (Case Initiation, Locate, Establishment, Case Management, Enforcement, and Financial Management), how does this approach handle each area? In particular, since Child Support requires complicated financial processing, e.g. distribution rules and arrears calculations, please address how these are handled with this approach.**

Not all Platforms are the same and the differences in platforms will impact how a child support solution can be configured, implemented and continually upgraded. We'll address these differences in question #9. But for the purposes of answering this question, we'll describe our approach for configuring a Child Support Enforcement Solution on the Dynamics 365 Platform.

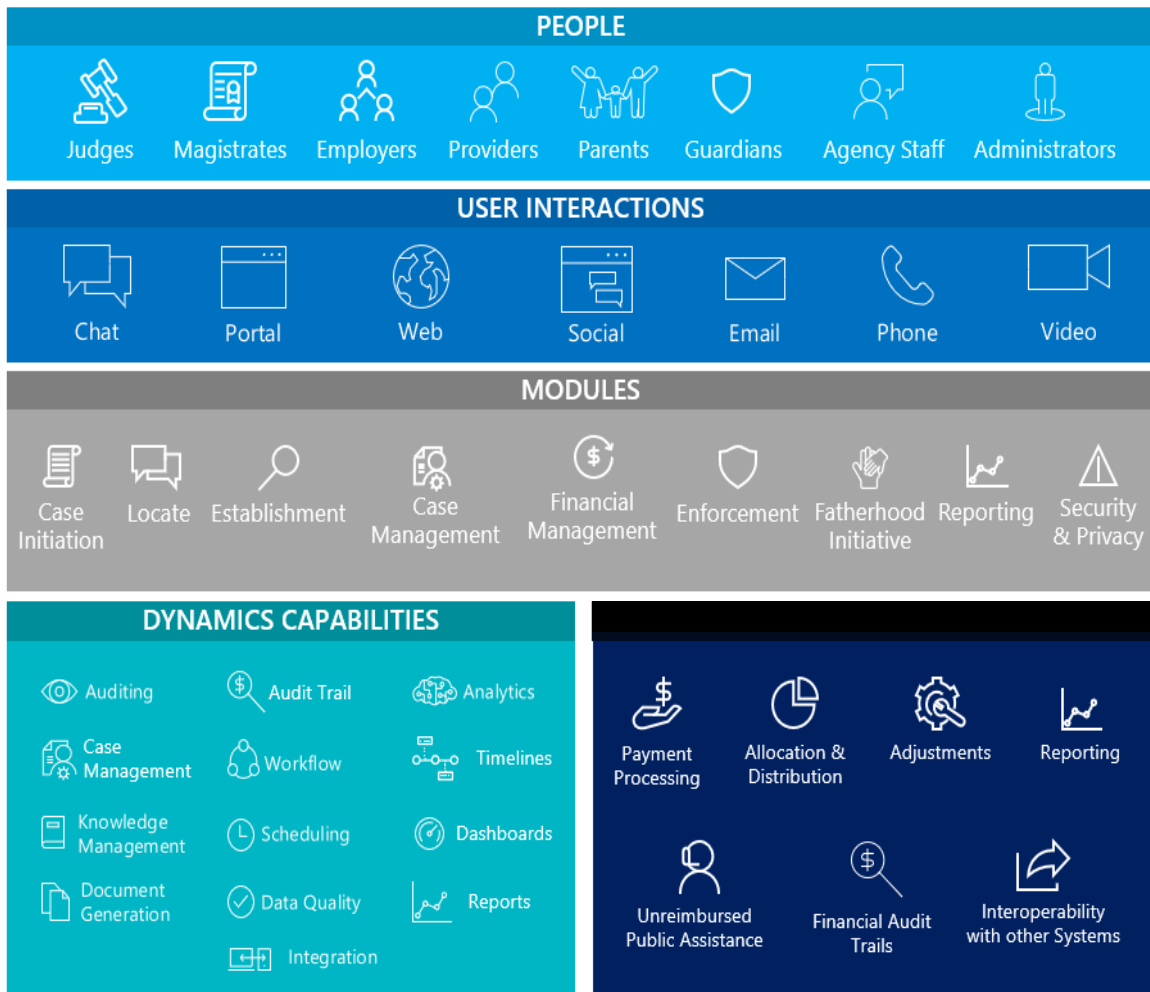
Dynamics 365 is a commercial grade platform that leverages enterprise applications connected through a single data model and delivered through a Services Oriented Architecture. This creates a seamless child support enforcement solution primarily through point and click configuration—with low custom code development. By taking this "configuration first" approach, the need to develop custom code is low; time to delivery is faster and it meets the program needs of today with the flexibility to meet the unknown needs of the future.

What are the out of the box capabilities for Dynamics 365? The image below provides a small sample of Dynamics 365 out-of-the-box capabilities. These are the types of capabilities that can be configured, rather than custom developed, and then assembled to meet the specific requirements of a state child support systems.



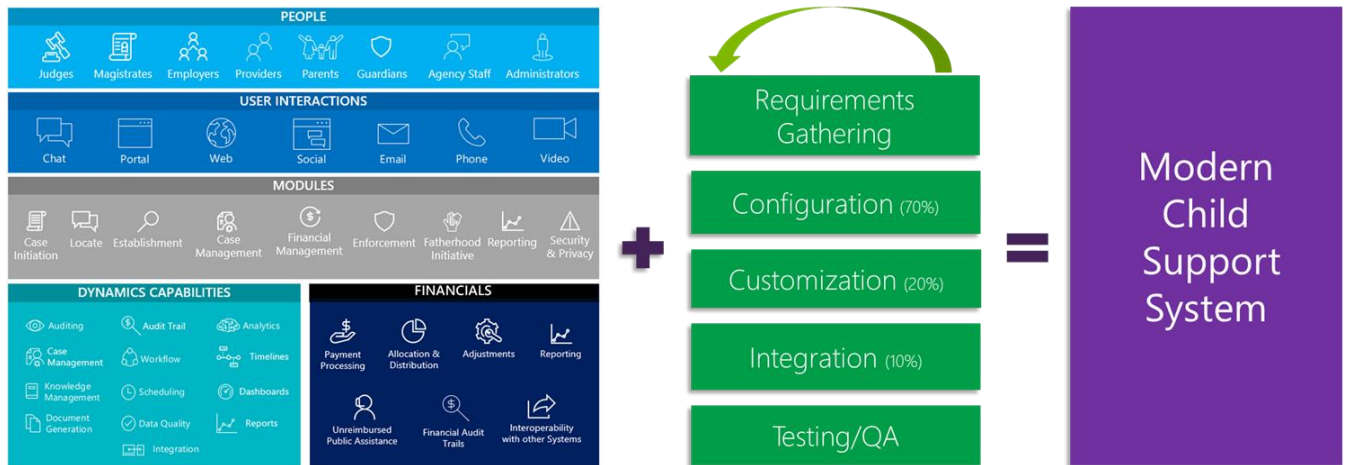
**Figure 3: Sample of Dynamics 365 Out of the Box Capabilities**

These capabilities can then be assembled to meet the specific requirements outlined in the OCSE System Certification Guide: Case Initiation, Locate, Establishment, Case Management, Enforcement, and Financial Management. Dynamics includes an enterprise grade ERP (financials) module that can be used for all financial calcs including arrears. The platform also provides several options for rules engine functionality to encapsulate distribution rules in a low code manner. But more importantly, this low code platform provides an adaptable foundation that can easily support the new and evolving approaches in child support like Fatherhood Initiatives and Behavioral Intervention for Child Support Services. Figure 4 below provides a Functional View of a child support enforcement system delivered on Dynamics 365.



**Figure 4: Functional View of a Child Support Solution on Dynamics 365**

At a high-level Figure 5 below illustrates how we would operationalize this functional view. Our approach would begin with the validation and refinement of the State’s requirements—applying our “configuration first” approach. When necessary, we would write custom code to address state specific legislation and requirements.

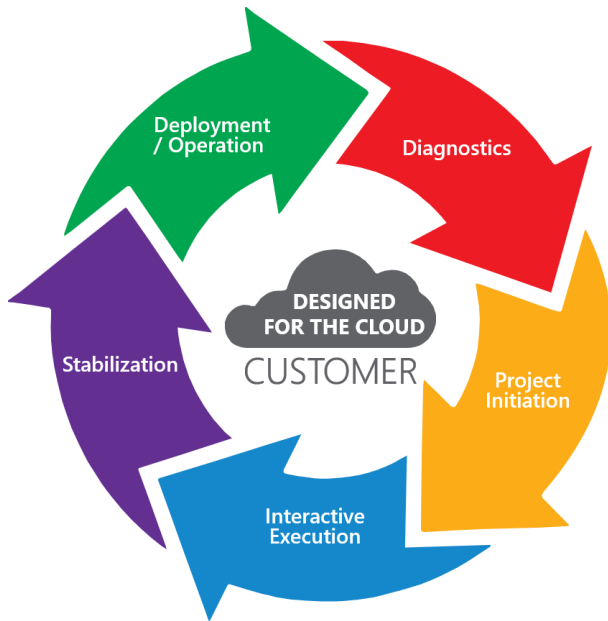


**Figure 5: Overview of Approach to Meeting OCSE Certification Requirements for Core Functions**

At a more detailed level, Microsoft would apply their proven implementation methodology, Sure Step 365. State’s should ask potential technology integrators to describe their implementation methodology and the projects it has supported.

**Sure Step 365** is an iterative delivery approach that enables the team to focus on a configure-first approach. The methodology focuses on releasing the solution to the customer early and supports continuous acceptance principles. It deploys multiple levels of testing and quality management to confirm the configured solution addresses the specific child support requirements. It supports consistency, predictability and high quality by providing processes, activities, tasks, tools and templates to the delivery and client teams.



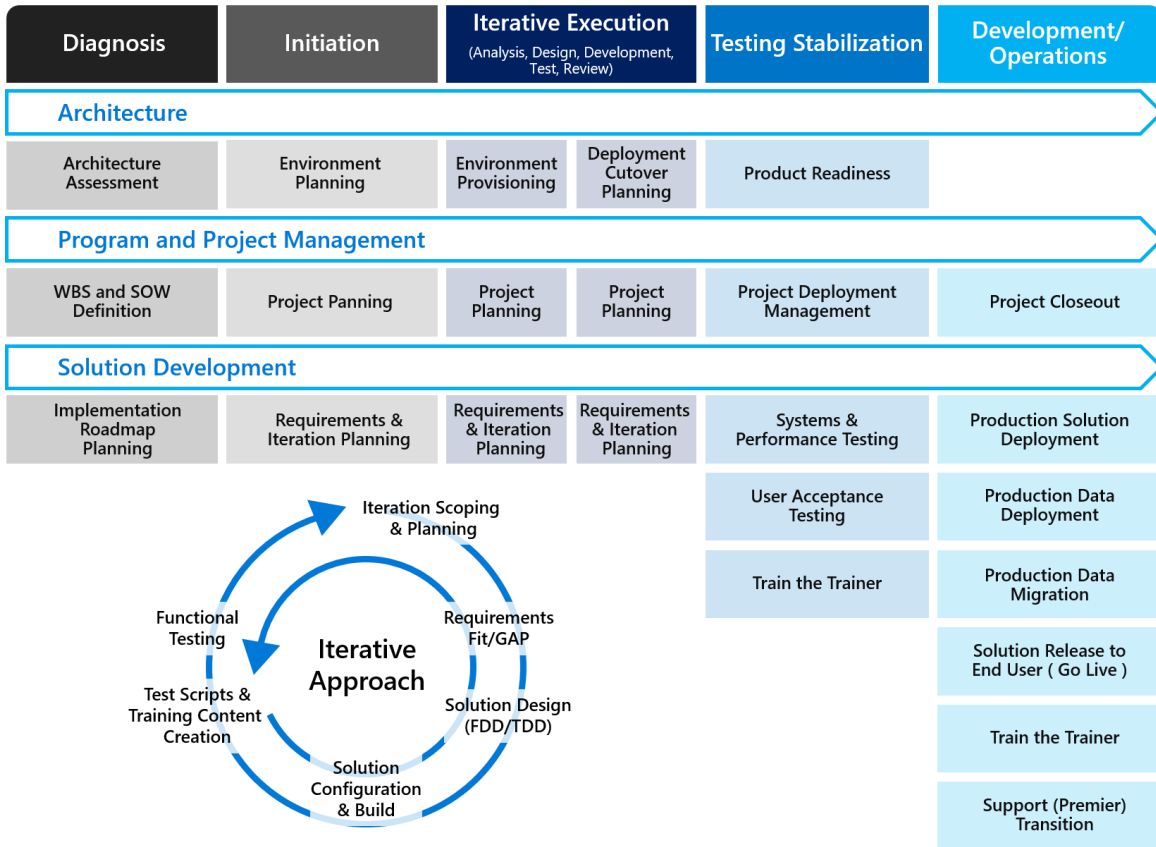


**Figure 6: Sure Step 365 Development Phases**

Sure Step 365 breaks up the solution and business processes into small repeatable analysis, design, and testing process flows (Figure 9), so the team can refine and align Dynamics to the State’s child support requirements. Microsoft Services has deployed Sure Step 365 on thousands of large and small Dynamics 365 solutions. It provides a predictable, on-time, and on-budget delivery experience across both our public sector and commercial clients.

Microsoft uses Sure Step 365 to build specific components of functionality according to business use cases in an “iterative” manner as specified by a defined scope. The implementation team focuses on configuration instead of customization to reduce delivery times and customers’ short-term (deployment) and long-term (maintenance and upgrade) costs.

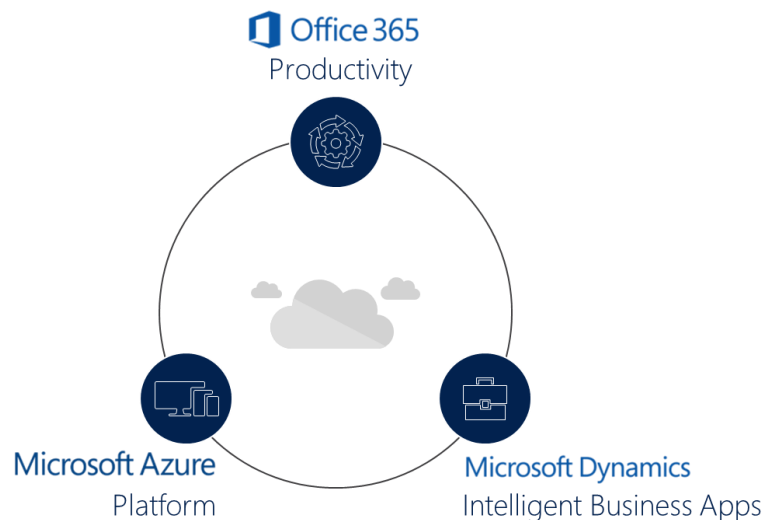
This approach is designed to deliver faster increments of value to States. It will also support the consistent delivery of the primary functions required by the OCSE Certification Guide. Microsoft finds that this approach is superior for Dynamics 365-based deployments because it more effectively accommodates business process redesign, change management, and integration with other systems. The figure below demonstrates the Sure Step 365 agile deployment principles that will support a state’s successful development of a modern child support system.



**Figure 7: The Sure Step Methodology Support’s Microsoft Dynamics Deployment to Meet Child Support Specific Requirements**

### 3. What COTS or other products are used in conjunction with this approach to give a state a fully functional system?

As we said earlier—not all platforms are the same. Many platforms will need to integrate COTS solutions such as Document Management, Identity Management, Analytics, etc. Microsoft provides a full range of enterprise capabilities across the three main pillars of our cloud (Microsoft 365, Dynamics 365, Azure) alleviating the need to integrate other COTS products. Dynamics 365 provides the business applications including our mature ERP Financials. Office 365 provides the office and collaboration tools such as Outlook, Teams, Excel, Word, etc. And finally Azure provides the central data store, analytics and artificial intelligence capability. Figure 8 illustrates the three-pillars of the Microsoft Cloud.



**Figure 8: Three Cloud Solution**

Based on the out-of-the-box capabilities provided by Dynamics 365 and the overall Microsoft Cloud solutions – it is rare that clients need an outside COTS product to provide a needed service. One of the strengths of a modern platform such as Dynamics 365 is the integration that already exists across the assets. It isn't necessary to create APIs. That being said, Dynamics 365 can integrate with other COTS solutions through APIs, enabling States to leverage their existing technology assets.

### 4. Under what circumstances does it make the best sense for a state child support agency to consider this new approach versus other possible means of

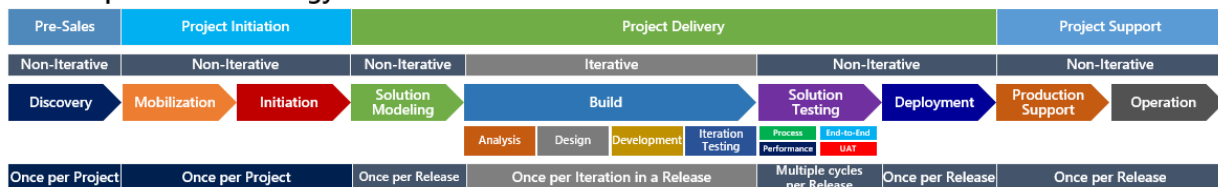
**modernizing its child support system? Are there any characteristics of either a state’s IT system or its business processes that lend themselves more to this approach?**

A low code platform approach can be appropriate for any State – it is not necessarily impacted by the existing IT systems or business processes. It can be equally effective whether the goal is a complete replacement or incremental modernization. What is most important it that the State have a long-term plan or roadmap for modernization—this will mitigate waste and rework. It’s also important to consider whether the low code platform is going to be used only for child support or if it will be used to support other HHS programs. In general, the total cost of ownership gets progressively lower as more programs are configured onto the platform. Another important consideration is ongoing maintenance and operations. Does the State want to maintain and operate the system or do contract that out to a vendor? If the State wants to maintain and operate the system, it’s important to choose a platform like Microsoft Dynamics with extensive education/certification that is widely available. This ensures that staff will be readily available as opposed to smaller proprietary platforms that will lock the State into long-term contracts with the vendor-owner. As we observe the general HHS market, there is an accelerating trend for states to choose low code solutions to modernize their program solutions more often than any other option.

**5. Generally speaking, what should a state expect on the following: project timeframe, project cost, time to rollout statewide?**

Project timeframes, cost and timeline will be dependent on the size, scope and complexity of the project. In general, configuration over customization provides a faster time to delivery and often a lower total cost of ownership. For other major HHS program solutions like Child Welfare, the low code approach has significantly reduced both the project cost and time to deliver, sometimes by a factor of 2x or greater. Below is an overall functional project view for the Sure Step 365 which is used by Microsoft to implement Dynamics 365 projects:

**Sure Step 365 Methodology**



Project cost for a low code platform implementation include:

- DDI Services – These are the services to plan, manage, configure/develop, test and implement the system.

- Product Licensing Costs – This is the subscription cost of the underlying platform. There are many forms of licensing cost but in general it is a per seat /user cost for the application and a utilization cost for cloud computing. All companies offer volume discounts on both users and utilization.
- Support – This is the cost of support. Many different options are available, and the cost depends on the options. It usually is priced as a flat fee or a specific number of hours for staff support. Given the comparative simplicity of a low code solution, many state agencies are taking the support and maintenance function in house which is a significant cost savings.

**6. The states don't want to again face the major system build and cost challenges once they have modernized. If they choose this approach, what is the continuous improvement model for the platform? Will the states benefit from the vendor efforts without major costs?**

As we have said earlier – not all Platforms are the same. Because platforms have become so popular many companies have rebranded existing solutions as platforms. Platforms that can support the continuous improvement that States need include:

- 1) Implemented by multiple system integrators: True platforms like Microsoft 365 or Salesforce can be implemented by multiple vendors. For example: major system integrators can all implement solutions on Microsoft Dynamics 365. This is important for States to prevent vendor lock-in.
- 2) A product development group: This group is responsible for developing the ongoing roadmap that keeps the platform current, drives innovation and solicits input from clients on future releases.
- 3) Ongoing Investment & Innovations: The company should invest in more than just upgrades – there should be a pipeline of innovations, features and functions that are rolled out at least once or twice a year. Microsoft invested \$1.4 billion dollars in research and development last year alone. A large portion of that investment focused on innovated technologies such as social engagement, predictive analytics and artificial intelligence—**enabling any applications developed for States on the Dynamics Platform can leverage the new capabilities.** This is the power of a truly modern solution—ongoing investment; new relevant features and functions; constantly evolving.
- 4) Support: The platform should have a variety of ongoing support packages at various price points.
- 5) Workforce Availability: The platform should have training and certifications widely available in the marketplace. This enables States to hire staff that are trained in the underlying technology and helps prevent vendor lock-in. Another advantage of the low

code approach is that new features released by the platform can be quickly “lit up” and deployed in the solution.

## **7. What are the most important things that a state should do to prepare for this approach?**

The three most important things any state can focus on in preparation for this approach or any system implementation are:

- **Business Process Change:** The biggest impact of any new technology is its impact on business processes. In order to fully leverage the capability of new technology – especially the process automation required to manage the high caseloads in child support enforcement will require revising business processes. Analyzing existing and future business processes and those that can be supported by a new platform are critical to the success of the project and the project schedule. Often—slowdowns in requirements validation and design are a result of business process not system.
- **Functional and Technical Requirements:** Clear and concise requirements are one of the most critical components for a successful design and implementation. Do not cut requirements validation sessions, the requirements in detail is essential for the development teams to configure the solution that meets as the state’s requirements.
- **State Capacity to Support the Project:** Having a clear understanding of the number of staff the vendor needs to support the project is critical. Often vendors are not asked or do not articulate the number of State staff they will need to support their approach. This often contributes to negative impacts on cost and schedule.

## **8. How does this type of child support system fit with states who need to have an enterprise approach? Many of the platforms seem to be creating the same old silos on a new platform. Is it possible to have one casefile for each person/family across the systems (child support, SNAP, TANF, family services, etc.)?**

Effectively supporting an enterprise approach is one of the primary benefits driving the rise of a platform approach. If we think about the goal of an enterprise approach—to put disparate programs on a common technology platform to enable reuse, improve service and reduce cost. Platforms, like Dynamics 365 are designed to do exactly that—provide a set of capabilities/services connected through a common data model. Apply our earlier example of a bookshelf that can be created by selecting modules and assembling those modules into a unique bookshelf for your home. Platforms can configure capabilities such as a person file

– much like a bookshelf module. Only our person module can be accessed through our common data model by different systems—SNAP, TANF, Child Support, Medicaid, etc.

One of the benefits of Platforms is that modules are reusable and expandable. Think about the common functions across programs such as Applications across Child Support, TANF, SNAP and Medicaid. There is a tremendous amount of common data across all those applications. If you are employing a platform approach and your first program implementation is child support enforcement – all that is required for subsequent program implementations is adding the application components that were not collected for the child support application. With a platform approach there is no need to recreate the application for each program – application is a module that can be enhanced and reassembled—much like our bookshelf analogy.

The very nature of reusability of capabilities connected through a single data model breaks down traditional silos.

## **9. What haven't we asked that we should have?**

As we have said earlier, not all Platforms are the same. Gartner and Forrester are independent organizations that rate the Low-Code Platform Providers. What is important for States in the market today is identifying Platform providers that have the capability to meet their needs. Figure 9 is the 2019 Gartner Magic Quadrant rating which rates the authentic platform providers. The leaders are listed as Microsoft, Salesforce, OutSystems, Mendix.



**Figure 9: Gartner Magic Quadrant for Enterprise Low-Code Application Platform 2019**