ENDEAVR

XR RFP-To-Delivery Model V1.0

08-04-2022

Document Version History

Version #	Date	Written/Revised By	Description
Final V1.0	2022-08-04	Eric M. Scharf Solution Design Architect	XR RFP-To-Delivery Model (legacy versus recommended) for complete support of XR (AR, MR, VR, WebGL) solutions.

DOCUMENT PURPOSE:

- **Fulfill an executive request to redefine the Digital Learning Group's legacy RFP-to-delivery model to more comprehensively support Extended Reality (XR) solutions (AR, MR, VR, and WebGL), in preparation for pairing the recommended model with a *potential* rebranding of the Digital Learning Group as "ENDEAVR Services."**

- **Officially introduce the executive, sales, and consulting ops teams of The Mosaic Company to a *complete* XR project life cycle (through objective, experience-based observations of – and participation within – the existing model to help close gaps in their understanding of true XR project requirements).**

Please NOTE: **This document contains no proprietary information.**

DIGITAL LEARNING GROUP

Legacy RFP-To-Delivery Model ***Context***

A delivery model is only as good as the internal and outsourced resources tasked with supporting that model.

Mosaic personnel – from sales to members of the Digital Learning Group (SDA – Solution Design Architect, ISD – Instructional Designer, PM – Project Manager, QAL – Quality Assurance Lead, and ODV – Outsource/Offshore Development Vendor) – must not only be familiar with the industries of potential/returning clients or have long-standing relationships with those clients. Mosaic personnel must also understand what is required to successfully convert client training goals into durable, modular, enhancement-ready Extended Reality (XR) solutions (or "Serious Games") involving Augmented Reality (AR), Mixed Reality (MR), Virtual Reality (VR), and Web Graphics Library (WebGL) applications, respectively, across mobile devices, head-mounted hardware, and desktop computers.

2D Web-Based Training (WBT) simulations – through which Mosaic has enjoyed reliable business success – are not the comparatively immersive 3D training simulations that are XR solutions, nor are they developed in the same, more predictable fashion. Each XR solution, in fact, can be different even with the same client through multiple, consecutive opportunities.

XR solutions require (1) larger budgets, (2) longer schedules, (3) deeper discovery, (4) end-to-end identification of user experience "what-ifs" (across user roles and interactivity with handheld objects, vehicles, commercial equipment, and interior/exterior environments), (5) accurate-to-approximate digital representations (to respectively balance step-by-step realism against the amount of time a user can spend within a given simulation without triggering discomfort), and (6) more robust user data tracking matrices.

"You don't know what you don't know." It takes but one inexperienced, uninformed, or inexpensive-yet-ineffective link – along the participating personnel chain – to cause an entire delivery model to crash, a promising project to fail, and a once-eager client to never return.

DIGITAL LEARNING GROUP

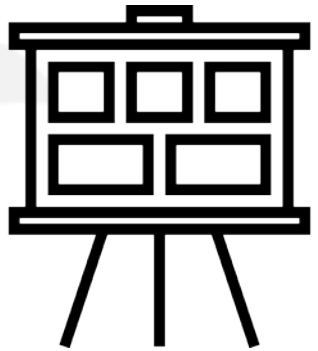
Legacy RFP-To-Delivery Model

1) Request for Proposal (RFP)

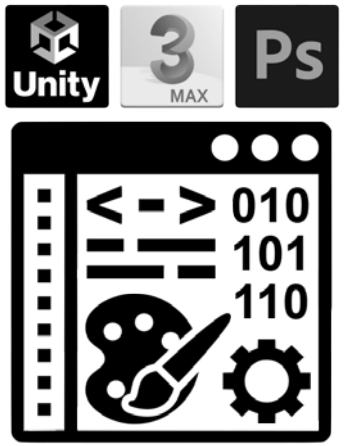
2) Business Requirements (BRs) + Statement of Work (SOW)

3) Reference Materials

4) Storyboards



5) Development



6) ALPHA Phase + Quality Assurance Testing (QAT)

7) BETA Phase + UAT

8) Project Delivery

DIGITAL LEARNING GROUP

Legacy RFP-To-Delivery Model

1) Request for Proposal (RFP)

- Sales team accepts RFP with no opportunity for RFP validation by SDA, ISD, PM, and QAL.
- ***Risk is introduced.***

2) Business Requirements (BRs) + Statement of Work (SOW)

- Sales team engages client, often without client subject matter experts (SMES) on defining BRs and creation/sign-off of SOW.
- No opportunity for SOW validation by SDA, ISD, PM, and QAL (to help prevent poor project scoping).
- Signed SOW includes truncated schedule and deficient budget.
- ***Risk is increased.***

3) Reference Materials

- Reference materials approximate but inaccurate.
- *Unscheduled* Discovery (UD) required to fill knowledge and reference material gaps.
- Client SME availability in question for UD sessions.
- ***Risk is increased.***

4) Storyboards

- Storyboard created/approved without preceding design document.
- UD required to examine and address storyboard gaps.
- Client SME availability in question for UD sessions.
- ***Risk is increased.***

5) Development

- ODV develops (via waterfall methodology) and delivers non-feature-complete and defect-heavy ALPHA build.
- ODV is inexperienced, *non-curious*, prefers hard-coded dependencies to dynamic, modular coding, and performs poor unit testing.
- ***Risk is increased.***

6) ALPHA Phase + Quality Assurance Testing (QAT)

- Significantly defective, non-feature-complete ALPHA build places internal QAT process under tremendous pressure to perform ultra-thorough review, with all defects carefully identified within detailed QA spreadsheet.
- QAT process additionally exacerbated by poor ODV-to-client communication, a repeated inability to follow carefully-crafted corrective instructions (causing further *internal* cost/schedule overruns which outsourcing is expected to alleviate), and ODV's struggle with tasks being "done" versus being "done right."
- ***Risk is increased.***

7) BETA Phase + UAT

- ODV delivers BETA build for internal QAT with poorly executed but complete feature set.
- QAT process further impacted by new, dependency-based defects which may be visible to client during UAT.
- ***Risk is increased.***

8) Project Delivery

- FINAL build delivered for client approval with still further defects.
- Pilot program rollout to client labor force delayed until defects corrected, verified by QAT, and confirmed by client UAT.
- ***Client relationship in jeopardy.***

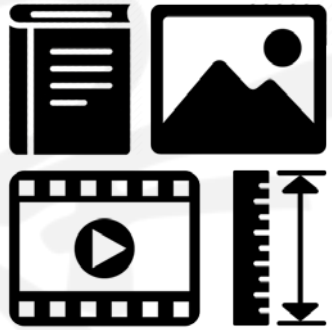
ENDEAVR *Recommended* XR RFP-To-Delivery Model

1) Request for Proposal (RFP)

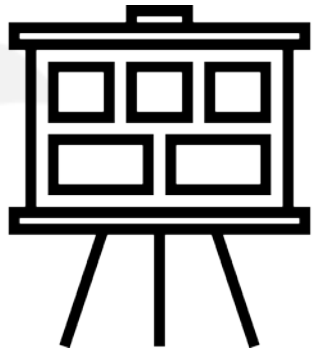
2) Discovery/Business Requirements (BRs)

3) Statement of Work (SOW)

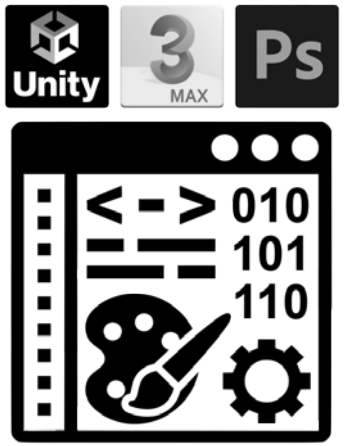
4) Reference Materials



5) Design Document & Storyboards

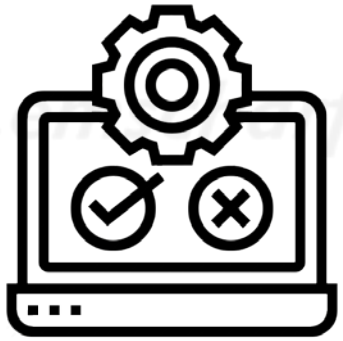


6) Development



7) Quality Assurance Testing (QAT)

8) User Acceptance Testing (UAT)



9) Project Delivery

10) Post Delivery Plan (PDP)

ENDEAVR ***Recommended*** XR RFP-To-Delivery Model

1) Request for Proposal (RFP)

1. **An RFP is shared by the sales team with ENDEAVR Services.**
2. **ENDEAVR Services team members will include:**
   A. Solution Design Architect
   B. Instructional Designer
   C. Project Manager
   D. Quality Assurance Lead
3. **ENDEAVR Services will provide feedback (within 2-3 days) to the sales team identifying:**
   A. Clear reasons the RFP should be engaged or declined.
   B. Potential risks which can be resolved during discovery/business requirements gathering.
4. **The sales team will share that filtered feedback with the potential or returning client to:**
   A. Gauge the client's continued interest against potential risks.
   B. Gauge the client's ability and willingness to offer in-depth clarity on identified risks.

ENDEAVR *Recommended* XR RFP-To-Delivery Model

2) Discovery/Business Requirements (BRs)

1. **Assuming the given RFP is accepted, the sales team will arrange a Discovery/BRs meeting.**
    1. An in-person or remote, conference-call-based meeting will ensure:
        A. Availability of key client team members, particularly subject matter experts (SMEs).
        B. Availability of key sales and ENDEAVR Services team members.
            i. Sales Lead
            ii. Solution Design Architect
            iii. Instructional Designer
            iv. Project Manager
            v. Quality Assurance Lead
        C. Timely procurement of BRs.
2. **Collection of BRs will be driven by:**
    1. Curiosity and details (upon which all vendor/client relationships are built and maintained).
    2. A willingness to investigate stated goals versus available budget versus forecasted potential to ensure (properly modified) goals can allow for cost-effective enhancements in the future.
    3. **The need to expose second-level risks such as (but not limited to):**
        A. The RFP requires the adoption and enhancement of an existing client-side solution for which there are incomplete/unknown specifications.
        B. The introduction of potentially-unprepared proxies/third parties.
        C. The requirement of access to client-side or third-party servers.
    4. **Any deprioritized BRs (due to budget limits) will be maintained within a parallel "wish list."**
    5. **An explanation of the "ENDEAVR XR 4D Project Development Model" – *a condensed, one-page overview as shown on SLIDE 18* – will be shared with the client at the end of Discovery.**

ENDEAVR *Recommended* XR RFP-To-Delivery Model

3) Statement of Work (SOW)

1. **A first draft SOW (including any intermediate and final drafts) will be *internally* written, reviewed, and edited by the following ENDEAVR Services team members:**
   A. Sales Lead, Solution Design Architect, Instructional Designer, and Project Manager.
2. **The SOW file naming convention will include a *date (e.g., 2022-08-04)* and *version (e.g., V1.0).***
3. **The Sales Lead will submit a *final draft* SOW to the client.**
4. **Any final draft SOW modifications received from the client will be collaboratively reviewed and (if necessary) edited by:**
   A. Sales Lead, Solution Design Architect, Instructional Designer, Project Manager, Client Lead, and/or Client SME (Subject Matter Expert).
5. **The Sales Lead will resubmit a final draft SOW to the client for approval.**
6. **The client will approve and sign the SOW.**
7. **Aside from completed business requirements, the SOW will include one key project plan condition for Development milestones, QAT (Quality Assurance Testing), and UAT (User Acceptance Testing):**
   A. The project plan *schedule* will remain unchanged unless or until client availability comes into question (as client SMEs – traditionally – spend the majority of their availability leading or participating in equally-time-sensitive, real-world, pre-existing, client-side workforce training).
   B. Client-driven delays will activate schedule extensions equal to the number of business days lost.
8. **The signed SOW will trigger:**
   A. The creation of a Purchase Order (PO) which will include relevant SOW details and will be given to a *prequalified* development vendor BEFORE they begin work on the pending project.
   B. Setting of the project kickoff meeting inclusive of team introductions, project schedule, and the restatement of requirements for the client (e.g., reasonably accurate reference materials, timely SME availability).

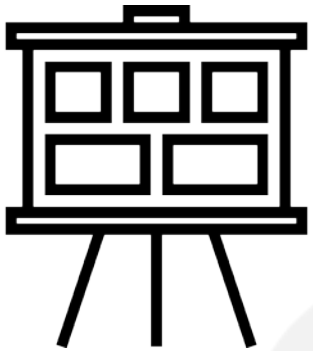
ENDEAVR *Recommended* XR RFP-To-Delivery Model

4) Reference Materials

1. **The client will agree to:**
   A. Provide reasonable reference materials (defined as documentation, corporate logos/style guides, photographs, videos, CAD drawings, and other audio/visual aids) through:
      i. Direct download links.
      ii. Client-side server locations:
         a. Through reliable single user or group access credentials.
      iii. Publicly-accessible third-party websites.
   B. Video reference materials – with human/prop involvement for a sense of scale – *will be critical* in the event that on-site visits (by the Solution Design Architect) are not possible.
2. **ENDEAVR Services will review the available reference materials to determine:**
   A. If the provided reference materials sufficiently support the recorded BRs.
   B. If the provided reference materials are noticeably deficient to the point of requiring a(nother) discovery session.
      A. Discovery session could cause a cascade of project delays, depending upon the depth of missing materials and other business requirement which may arise as a result).
3. **ENDEAVR Services – assuming reference materials are reasonably complete – will confirm their readiness to head into the design document/storyboard stage of the project.**

ENDEAVR *Recommended* XR RFP-To-Delivery Model

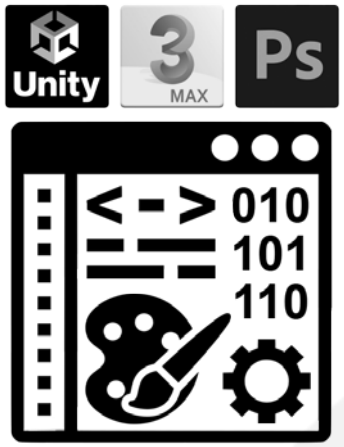
5) Design Document & Storyboards



1. **Upon confirming receipt of reasonable reference materials from the client, the Solution Design Architect will collaborate with the Instructional Designer towards the creation of a design document, visual asset mockups, and supportive storyboard(s).**
   - **A. Design Document:** A type-written, feature-by-feature, end-to-end breakdown of the solution, including click-by-click User Experience (UX) references.
   - **B. Visual Asset Mockups:** Function-centric diagrams/images of ANY key visual asset requirements.
     - A. These mockups – once approved – will inform the depth necessary for the storyboard.
   - **C. Storyboard:** A *visual approximation* and accurate feature set for development of the agreed upon end product, including mockups of:
     - i. The UX for the solution's Graphic User Interface (GUI).
     - ii. GUI elements (overlays, pop-up windows, fonts, icons, button shapes, button states).
     - iii. The solution's physical environment (terrain, building structures, landscaping).
     - iv. Environment props (both static and interactive):
       - a. Character avatars, handheld items, equipment, vehicles, furniture.
2. **The storyboard(s) will be simultaneously shared with the client AND the development vendor in DRAFT format: (A) *dated* as in "2022-08-09" and (B) *versioned* as in "V1.0, V1.1, etc."**
   - A. This will allow the client and development vendor to participate (separately but simultaneously) in design document/storyboard reviews to ensure the design document and storyboard reasonably match the SOW.
3. **Following any storyboard DRAFT modifications, the approved storyboard FINAL is provided to both the client (for their records) and the development vendor (for commencement of development).**

ENDEAVR ***Recommended*** XR RFP-To-Delivery Model

6) Development



Please NOTE:

Parallel creation and development will allow the development vendor to utilize placeholder visual assets to avoid coding interruptions while awaiting approval of finalized visual assets.

1. **The development vendor will begin *parallel creation and development* of the following elements.**
   - **A. Visual assets (using Autodesk 3DS MAX and Adobe Photoshop *or equivalent tools):***
     - i. 2D/3D GUI elements (e.g., login screen, in-game menus, help screen, results screen).
     - ii. 3D modeled, texture-mapped, and rigged (for animation) elements for:
       - a. Environment: sky dome, surface terrain, building structures, landscaping.
       - b. Environment props: vehicles, equipment, handheld objects, and furniture.
       - c. Character avatars: static or animated and interactive.
   - **B. Programming assets (using the C-Sharp coding language within the UNITY game engine):**
     - i. The UX and GUI logic (e.g., login screen, in-game menus, help screen, results screen).
     - ii. Single player and/or multiplayer functionality (including user controls).
     - iii. 2D/3D environment, environment prop, and character avatar element logic which (among other functionality) also involve collision volumes.
       - a. Collision volumes are invisible trigger points for interactions, as well as surface barriers to help prevent users and environment elements from intersecting.
     - iv. Tracking of predefined user data (or user decisions from each play session) for display within a spreadsheet-style report accessible within the ENDEAVR XR Training Platform.
2. **Development will involve a MMA (Mixed Methodology Approach) which will be informed by *client availability*. A milestone approach rather than an ALPHA/BETA approach will be more efficient.**
   - A. Milestones will be fulfilled through 1-2 week “sprint” deliverables (which will encourage more frequent client SME corrective feedback/approvals during “sprint showcases” *of deliverables).*
   - **B. Out-of-scope feature requests, often as a result of sprint showcases, will receive options of:**
     - *i. Change Request* to swap new features for not-yet-developed features of equal effort.
     - ii. Fulfillment of new feature requests through a *post-delivery enhancement SOW/project*.

ENDEAVR *Recommended* XR RFP-To-Delivery Model

7) Quality Assurance Testing (QAT)

***Please NOTE**:*

*Client feedback during sprint showcases helps accelerate QAT, but **dependencies between product features** still demand a complete end-to-end QAT effort before FINAL delivery.*

1. **QAT is an *internal* effort, the reasonable success of which relies on a two-stage testing process between the development vendor's *UNIT* TESTING and the ENDEAVR QA Lead's *USER* TESTING.**
2. **Unit testing will involve:**
   - A. Code reviews of every line of programming code for errors.
     - i. Code reviews will occur at regular intervals of the development vendor's choosing.
     - ii. The development vendor will provide weekly updates to the Solution Design Architect.
   - B. The review of every UX function and GUI element for errors.
   - C. The comparison of behavior logic of every 2D and 3D element with provided BRs.
   - D. The fit-and-finish comparison of all visual elements against reference materials.
   - E. The validation of all 3D elements and collision volumes demonstrating "snap-to" tightness.
     - A. All environment surfaces, as a result, will present client users with neither an opportunity to penetrate those surfaces via standard navigation nor fall through those surfaces.
   - F. The validation of tracked user data having been successfully received by and displayed within the ENDEAVR XR Training Platform.
3. **Timely, in-depth unit testing will result in reasonably defect-free milestone deliverables for QAT, and the ENDEAVR Services QA Lead (along with other available ENDEAVR Services team members) will have a much more efficient time performing their own user testing.**
4. **Upon completion of QAT *(following each sprint but prior to each showcase)*, discovered defects are shared with the development vendor to fix and unit test. ENDEAVR Services must then validate those corrections BEFORE they can engage the client on UAT (User Acceptance Testing).**
   - A. An ENDEAVR XR Training Platform Administrator – prior to UAT activities – will verify platform access credentials for all *pre-identified* client UAT members.

ENDEAVR *Recommended* XR RFP-To-Delivery Model

8) User Acceptance Testing (UAT)

***Please NOTE**:*

UAT participants should be a robust group of would-be regular and infrequent users who can apply a "fresh set of eyes" to the product and its user experience before FINAL delivery.

1. **UAT will begin assuming ENDEAVR Services' successful completion of internal QAT.**
   A. UAT will involve one or more phases depending upon the depth of any defects and corrections.
2. **Even though QAT serves the purpose of largely catching and resolving the most obvious defects, UAT is the client's opportunity to identify any remaining, less apparent defects (or previously unconsidered UX refinements) before the solution receives final approval.**
   A. Client UAT participants will all receive an easy-to-use ENDEAVR Services-created digital spreadsheet for outlining each issue their testing uncovers (e.g., high-level description, step-by-step UX of how the issue was provoked, and space for embedded screenshots).
      i. ENDEAVR Services will train client UAT participants on how to capture screenshots on their WebGL-supportive systems and AR/MR/VR-supportive headsets or mobile devices.
   B. Client UAT feedback will also be used to help the client create a PILOT PROGRAM through which the solution will be efficiently rolled out to their greater workforce for reliable adoption.
3. **Following completion of UAT, any client-discovered defects will be shared with the development vendor who (as with QAT) will:**
   A. Verify if each issue is a true defect, deficient UX element, or user error.
   B. Share a time estimate associated with correcting each verified defect.
   C. Unit test every correction (including all dependencies) to critically ensure a correction to one defect does not cause a new defect to arise with another feature/function.
   D. Share a new build (version) of the solution on which ENDEAVR Services can verify corrections.
4. **Upon correcting all defects identified within the initial stage of UAT, the new build will be provided to the client so they can perform their own validation.**
5. **Following validation of all corrections, the client will deem the solution to be final for GO LIVE.**

ENDEAVR ***Recommended*** XR RFP-To-Delivery Model

9) Project Delivery

1. **Once the fully-developed and successfully tested solution has been approved by the client to GO LIVE, the last known (or most recently tested) build of the solution is made accessible by:**
   A. **Upload the solution to *AR/MR/VR* headset hardware.**
   B. **Launch the solution within a cloud-based production *WebGL* environment.**
      i. The production WebGL environment will be the ENDEAVR XR training management portal (unless the SOW specifically designates an alternative, client-managed server and solution location).
2. **The client will then officially sign off for the FINAL deliverable.**
   A. Final delivery of the solution will activate the PILOT PROGRAM.
   B. The pilot program will trigger a Post Delivery Plan (PDP) into action for continued engagement with the client towards future maintenance or enhancement of the delivered solution.

ENDEAVR *Recommended* XR RFP-To-Delivery Model

10) Post Delivery Plan (PDP)

1. **The project engagement and client relationship will not stop with the FINAL deliverable.**
2. **A PDP will be a future-proofing roadmap that will have been developed in parallel with the execution of the since-delivered solution.**
    1. **A PDP will NOT be an SLA, and it will not be part of an SLA.**
        A. A PDP will be generated in parallel with the solution being developed, and it is:
            i. Informed by lessons learned FROM the solution development journey.
            ii. Providing answers to the questions FROM solution development.
3. **A PDP requires the Sales Lead to reengage with the ENDEAVR Solution Design Architect and Instructional Designer on the following maintenance and growth opportunities:**
    A. A standard "warranty period" (typically 1-2 weeks after FINAL deliverable) during which additional defects may still be discovered (and for which corrections should be generated).
        i. A warranty period IS a growth opportunity, because it often results in the client identifying one or more key features not originally considered but suddenly of interest.
    B. Future (monthly or quarterly – 3, 6, 9, 12) check-ins with the client to:
        i. Gauge the adoption rate by their work force of the delivered solution.
        ii. Gauge whether additional user training is necessary to increase the adoption rate.
        iii. Gauge whether client users have increasingly reached the functional boundaries of the since-delivered solution and if the client is ready to discuss an "Enhancements SOW."
    C. Creation and submission of an Enhancements SOW which carefully establishes how the since-delivered solution can be logically evolved through improvements to existing features or the introduction of new features (based upon out-of-scope business requirements, which were originally categorized during discovery as wish list items, due to budgetary constraints).

ENDEAVR XR 4D Project Development Model

1) DISCOVERY

ENDEAVR Roles: SALES, SDA, ISD, QAL, PM
Client Roles: SME(S)

A Review SOW Goals

B Confirm Business Requirements

C Review Reference Material Accuracy

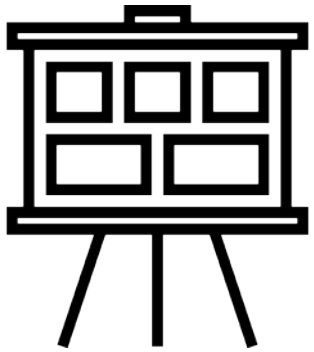
2) DESIGN

ENDEAVR Roles: SDA, ISD, PM
Client Roles: SME(S)

D Create + Approve Design Document

E Create + Approve Visual Asset Mockups

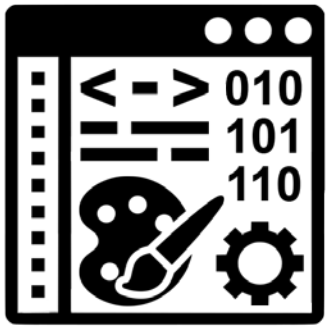
F Create + Approve Storyboard



3) DEVELOPMENT

ENDEAVR Roles: SDA, DEV, ISD, QAL, PM
Client Roles: EXECUTIVE(S), SME(S)

G Develop Solution Via 1-2 Week Sprints



H Perform + Approve Per-Sprint-QAT

I Perform + Approve UAT On Full Solution

4) DELIVERY

ENDEAVR Roles: SALES, SDA, ISD, PM
Client Roles: EXECUTIVE(S), SME(S)

J Approve + Deliver Solution

K Launch Pilot Program + Post Delivery Plan

L Create Enhancements SOW From Wish List