TECHNICAL DIAGRAMS

MSAG Guidelines and approach with examples

Introduction

Types of diagrams:

- Solution / Process Diagram
- System Model
- Application’s design and architecture

Tools used:

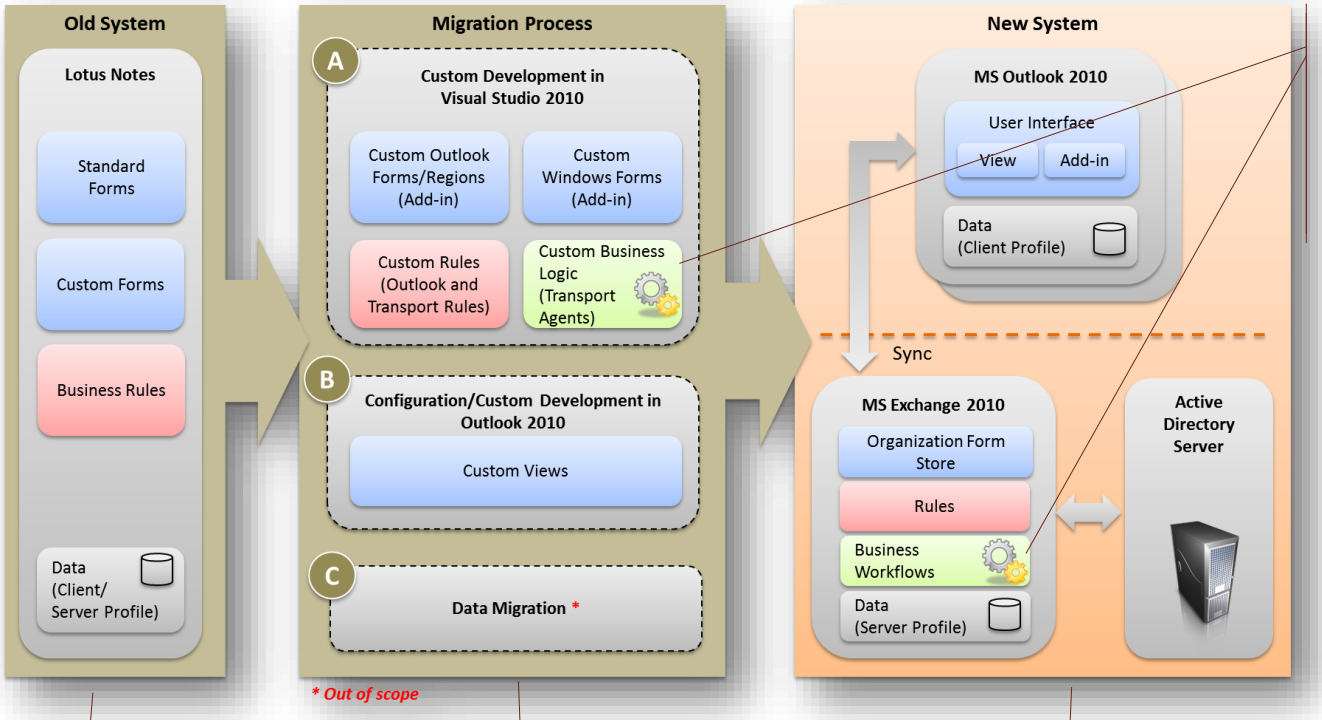
- MS Visio
- MS PowerPoint

SOLUTION / PROCESS DIAGRAMS

Representing the overall idea of the solution and the process of achieving required system.

Solution diagram – Showing transition

Diagram showing transition from old to new system



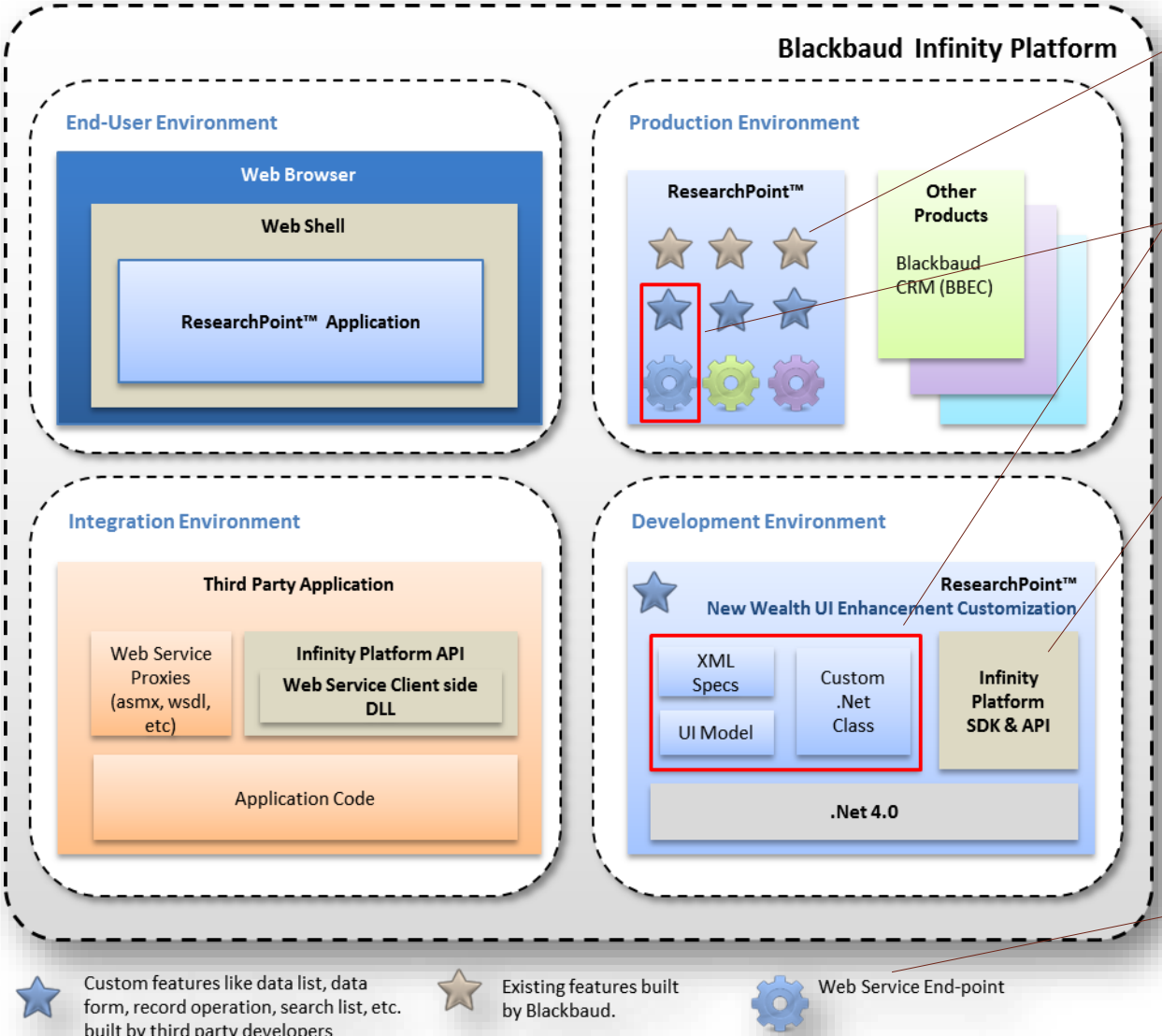
Use different color shades to map components belonging to each other across diagram.

Section describing existing system components

Section describing the process of migration or transition

Section describing the new system to be achieved after transition

Solution diagram – Expressing entire solution idea in one compact diagram



Use icons to save space.

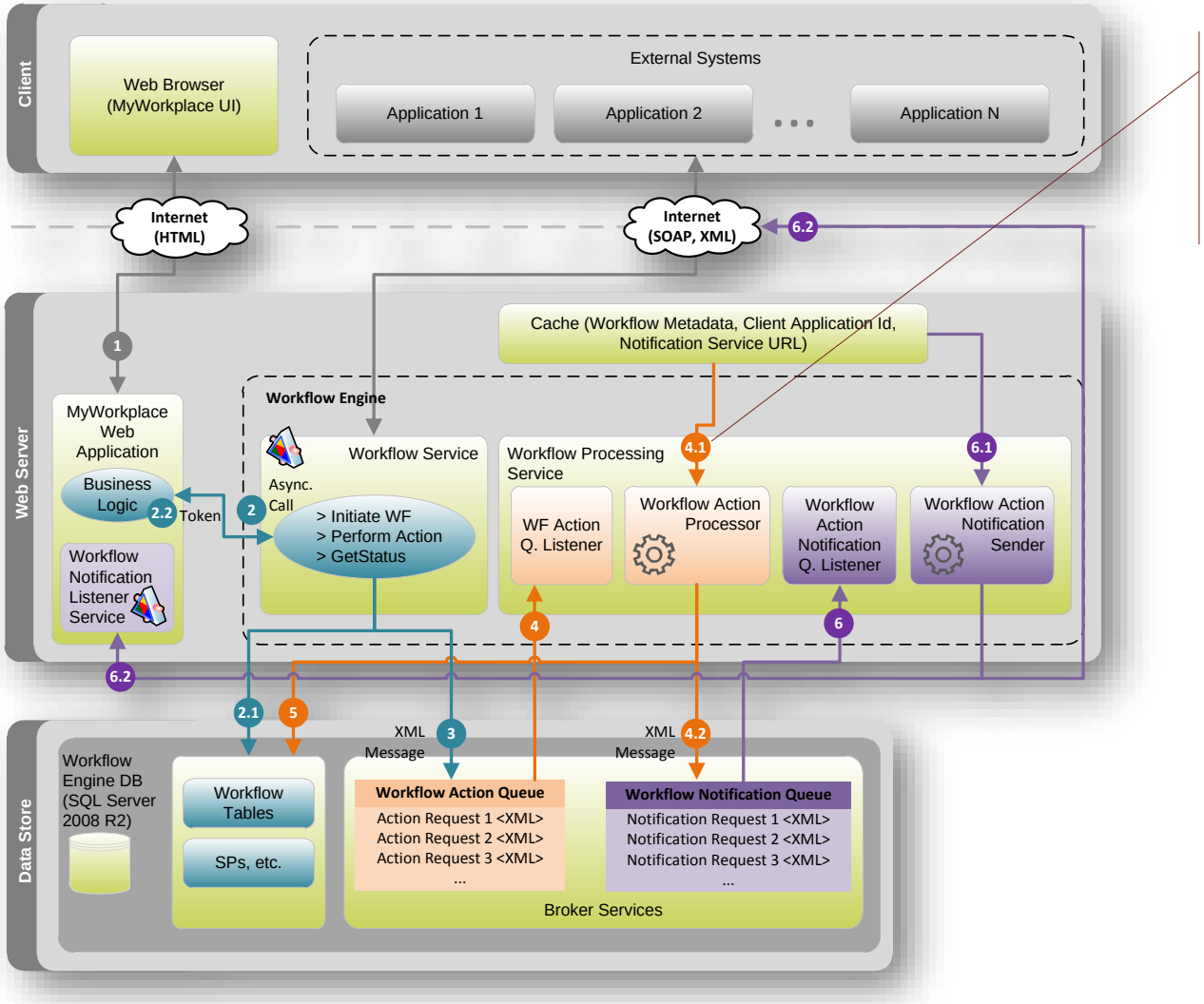
Use a boundary to show the scope of development or changes

Use color shades to group components of same context across diagram

Use legends to describe the icons used in the diagram

Solution diagram – Data flow diagram

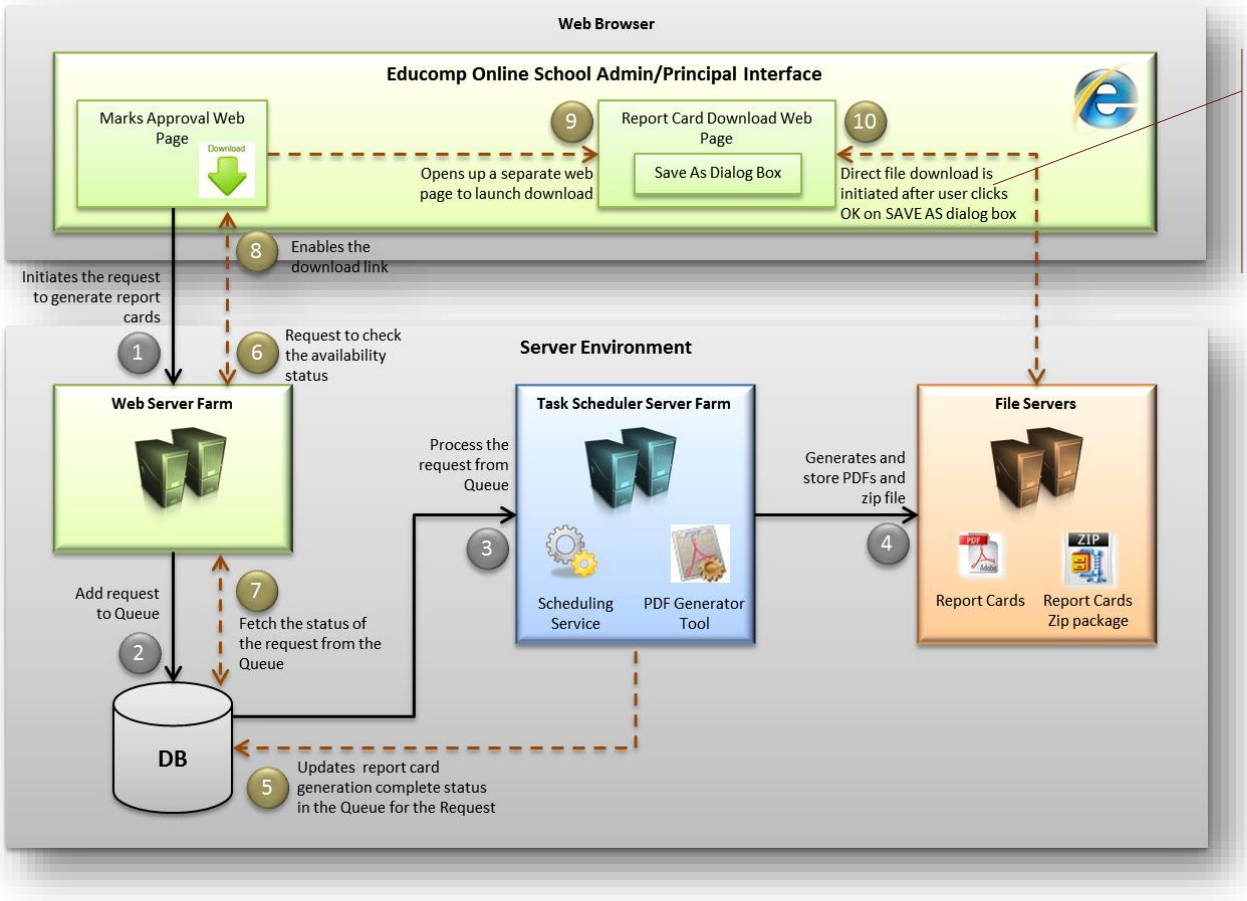
Diagram having arrows tagged with sequence numbers to show flow of data



Tag the steps in sequence order so that data flow can be explained in the write-up

Solution diagram – Data flow diagram

Diagram having arrows tagged with numbers as well as descriptions



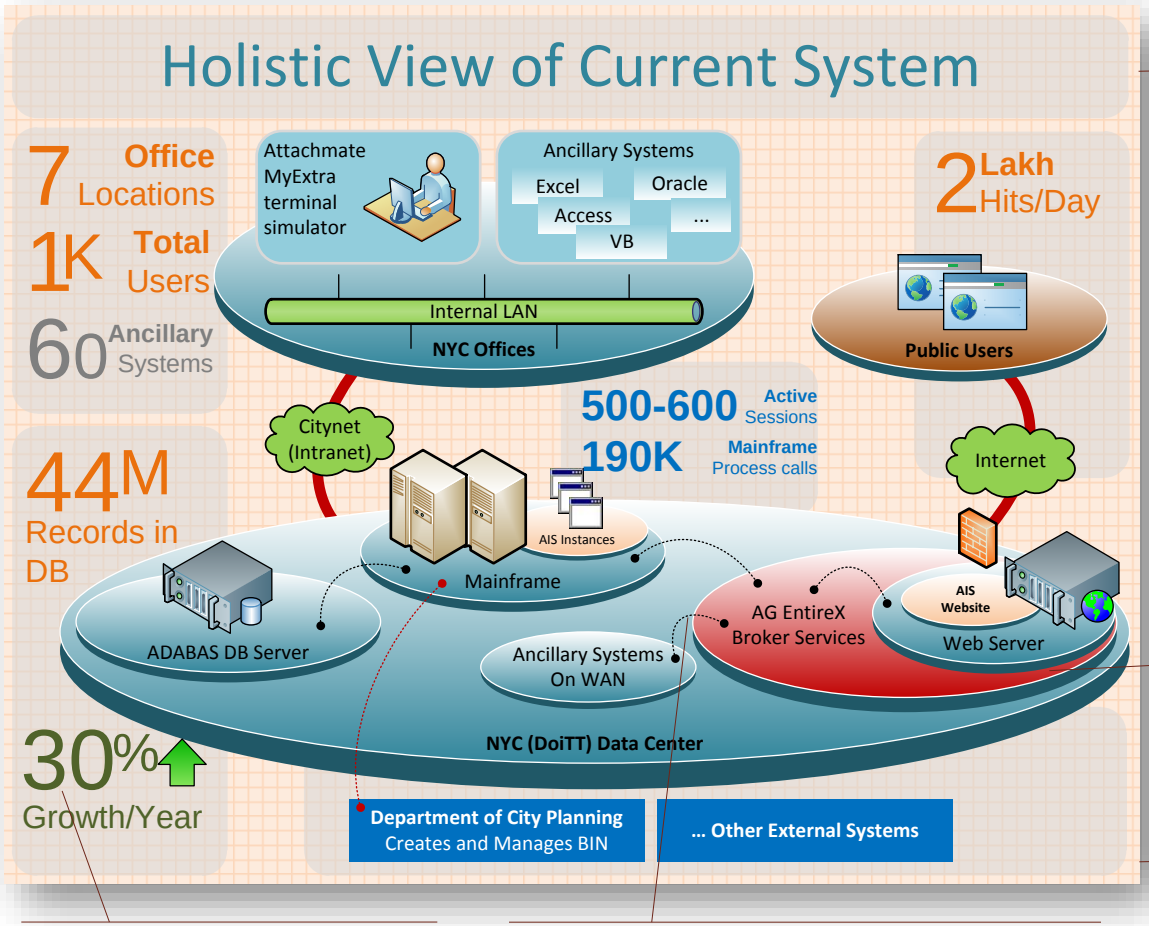
You can also describe the data flow in context if space permits

SYSTEM MODEL

Depicts the holistic view of existing or envisioned system/solution.

System Model as an Info-graphic

Visual representations of facts and knowledge to present complex information in one cohesive and compact diagram



Prepare these type of diagrams only when visual representation may become the key differentiating factor in quality standard.

Use 3D objects to bring a perspective to the diagram.

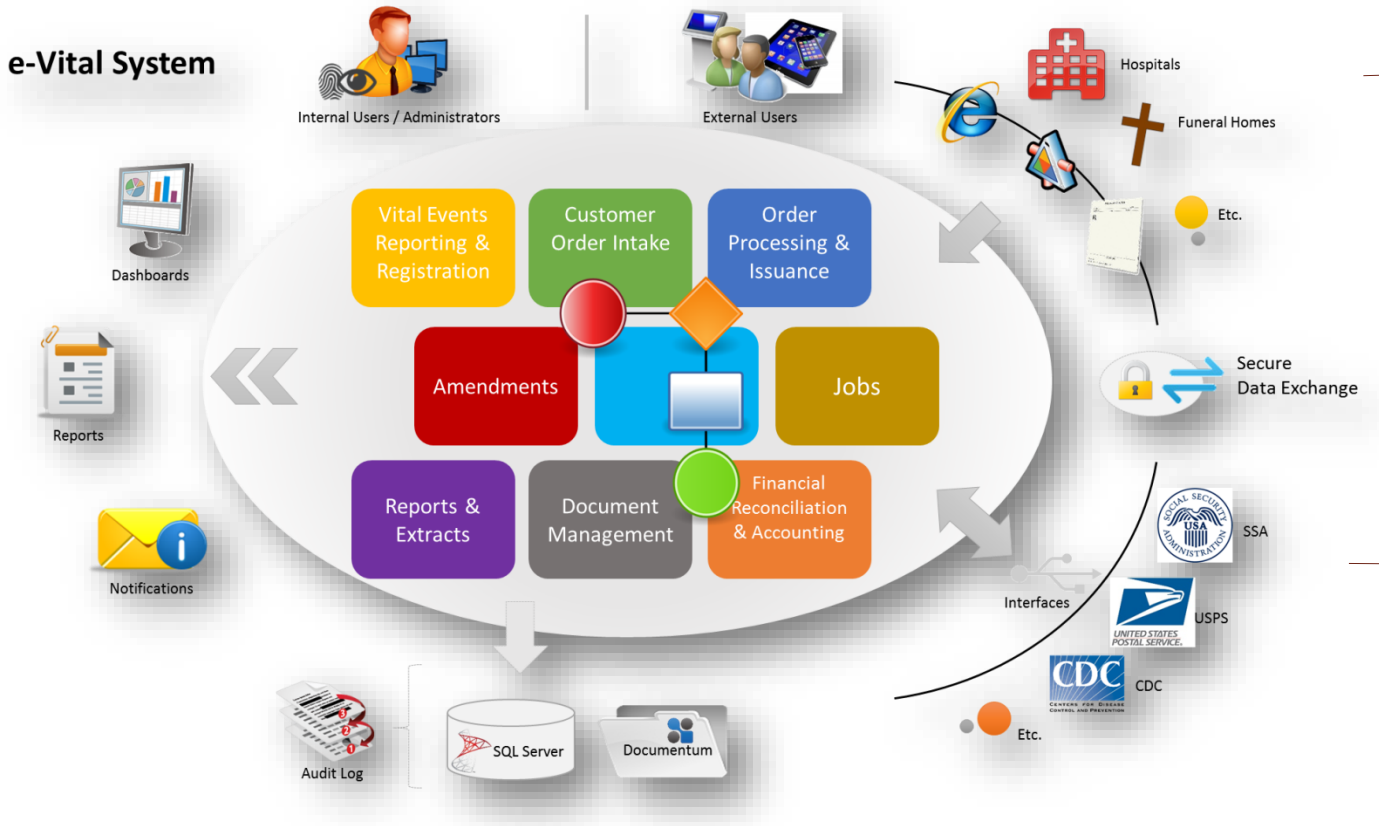
Apart from anything else, your imagination is the only limit.

Use big fonts to bring attention of the viewer to important facts.

Use arcs instead of straight arrows to join two components. It adds to the 3D perspective.

System Model – Functional aspect

Basic diagram to cover functional components only



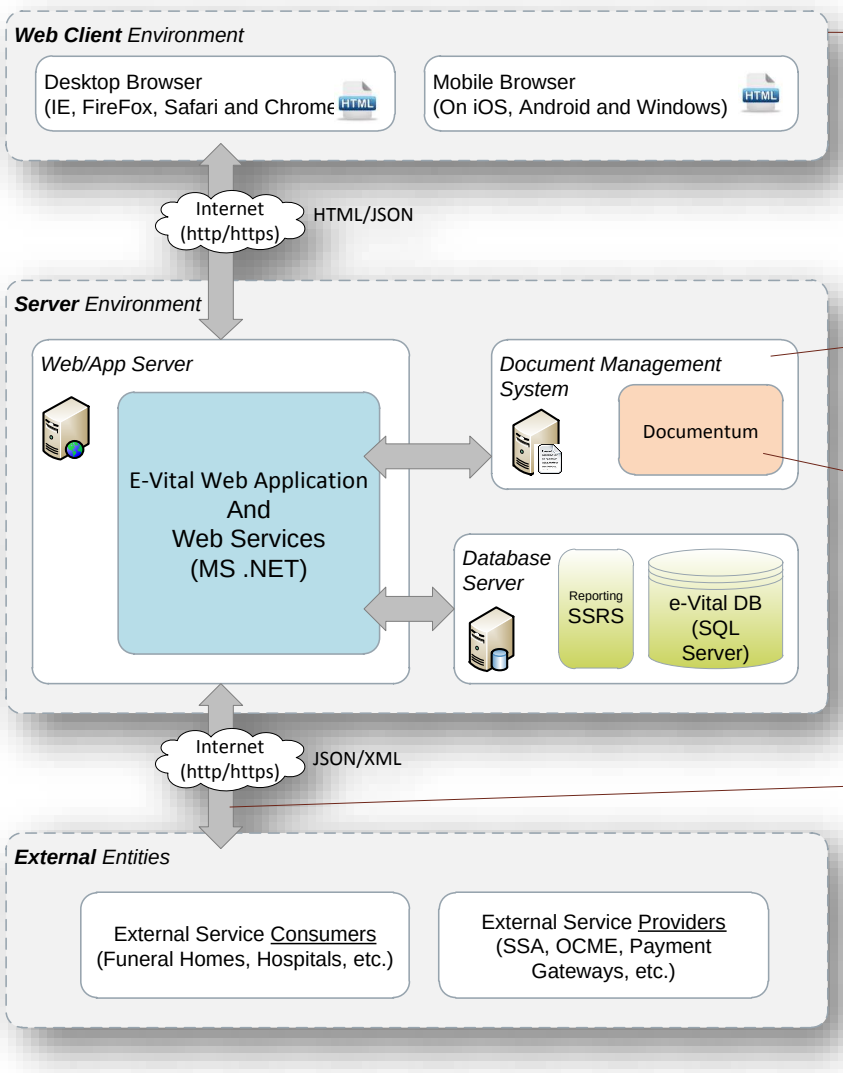
Prepare these type of diagrams for wide range of audience especially when business users are to be targeted.

Should cover all areas like types of users, type of integration points, type of outputs, functional modules, etc.

System Model – Technical aspect

6b

Basic diagram to cover technical components covering servers, deployment type, network type, data transmission, etc.



Each environment enclosed in soft (dotted) boundary and light grey shade as background color.

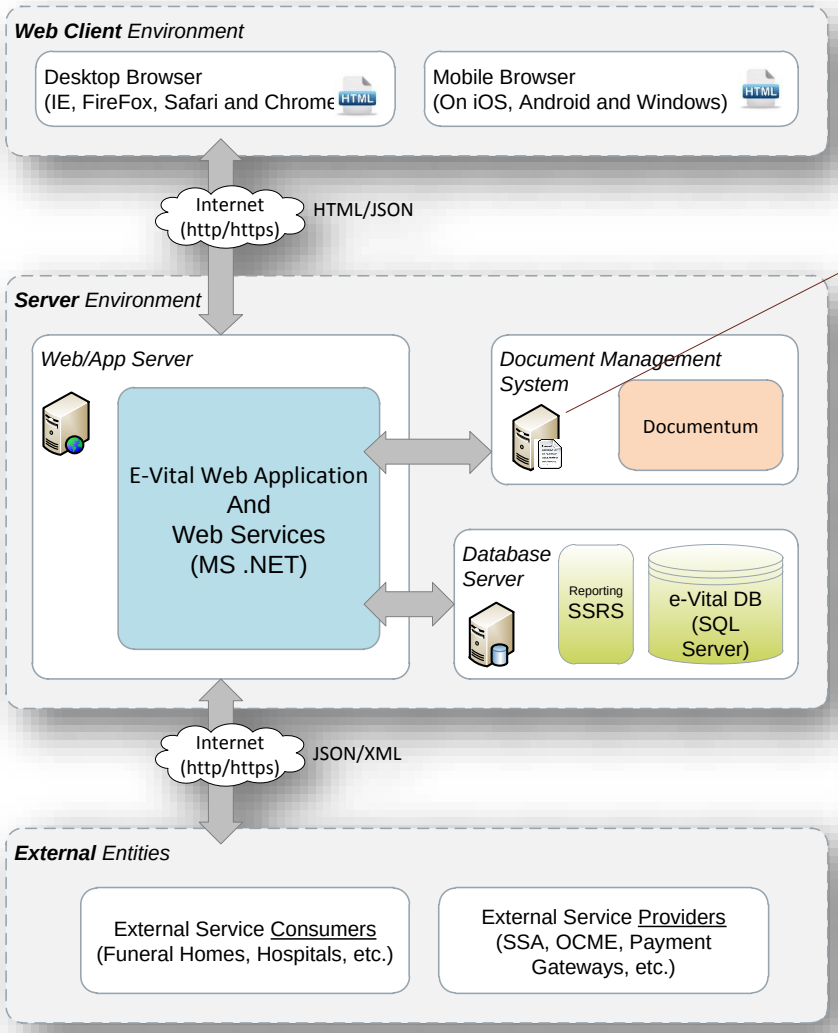
Second level of boundary in white background and hard borderline in dark grey shade

Major components in light shade of any color

Cross boundary transaction shown in broad arrow

Using Icons and graphics

Diagrams having icons and images to express more in less words.

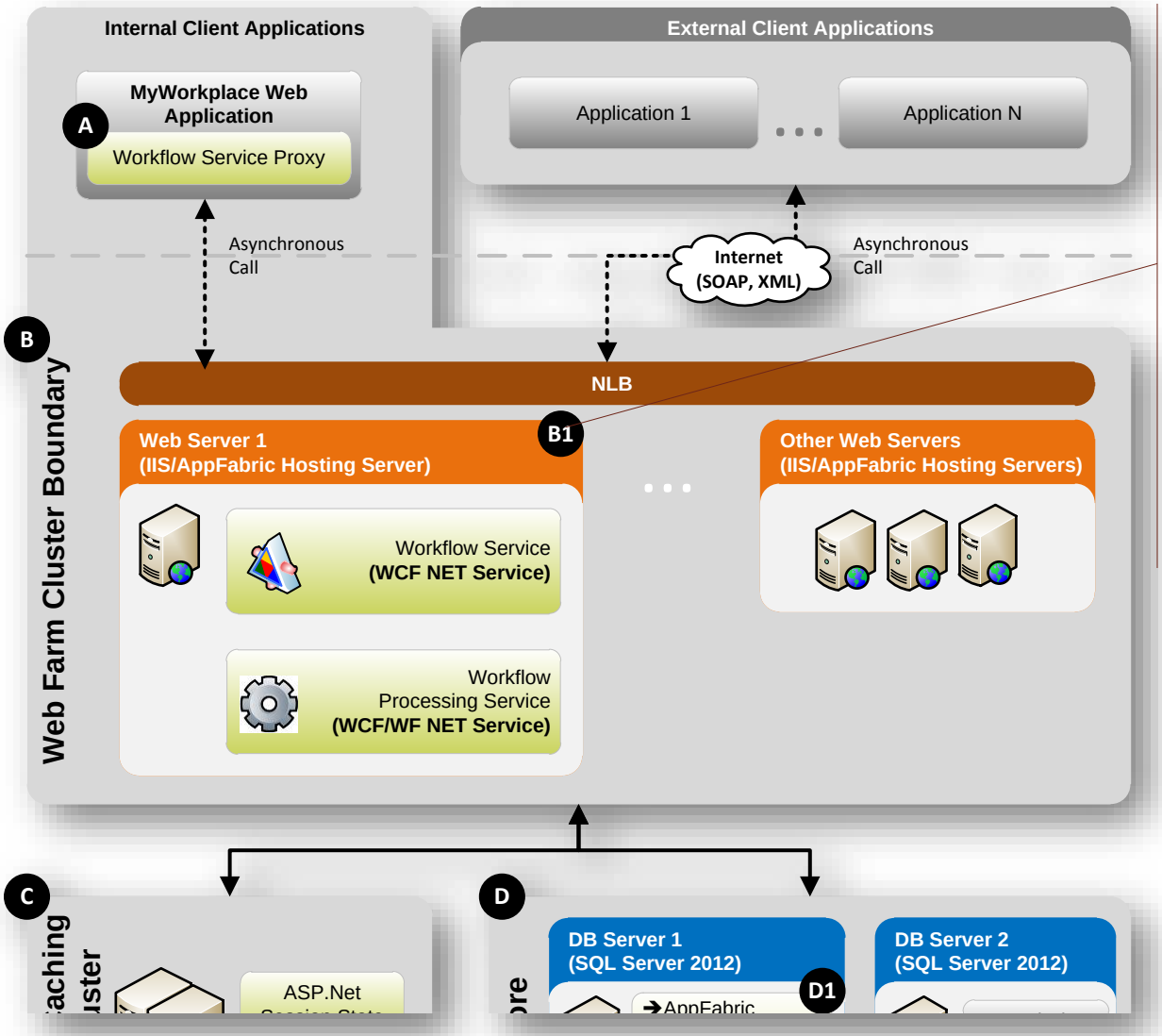


Users

Use icons or images freely to make the diagram more visually appealing.

Icons within the block must be well aligned at any one side across the diagram

Tagging different components in the diagram

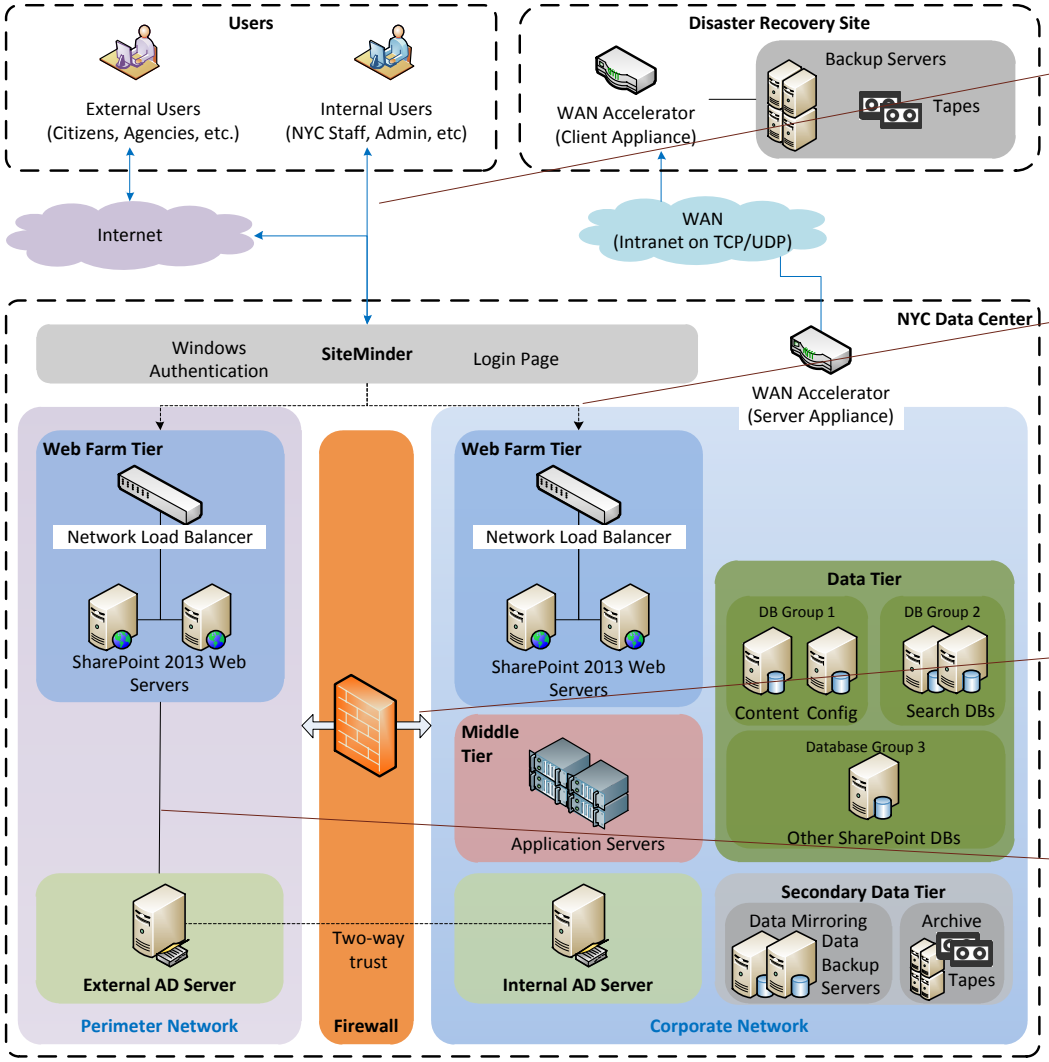


Components can be tagged so that they can be referred in the solution approach content.

Pointing to the diagram components with simple tags like alphabets or numeric helps in writing compact and concise content

System Model – Arrows

A Network diagram using arrows of different kind to represent different context



Use Blue Arrow to represent communication with external entities

Use Black dash arrow to represent redirection or switching

It can also be used to represent indirect communication

Use Solid arrows to represent any important or major communication line.

Use simple black arrows to represent internal communication

System Model – Comparing old with proposed system

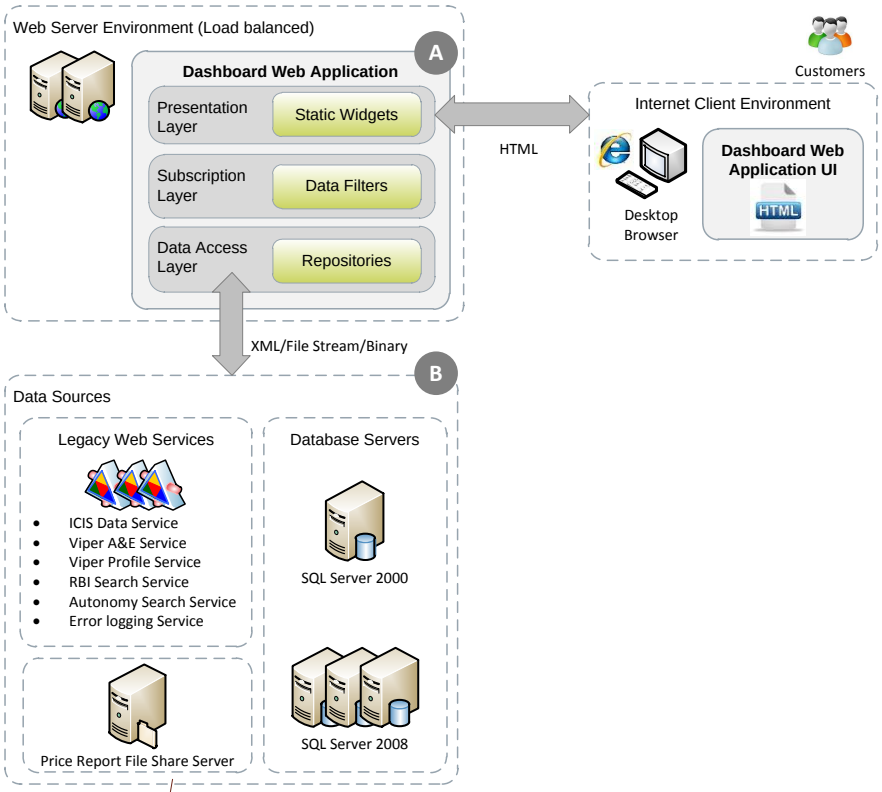


Diagram showing current system

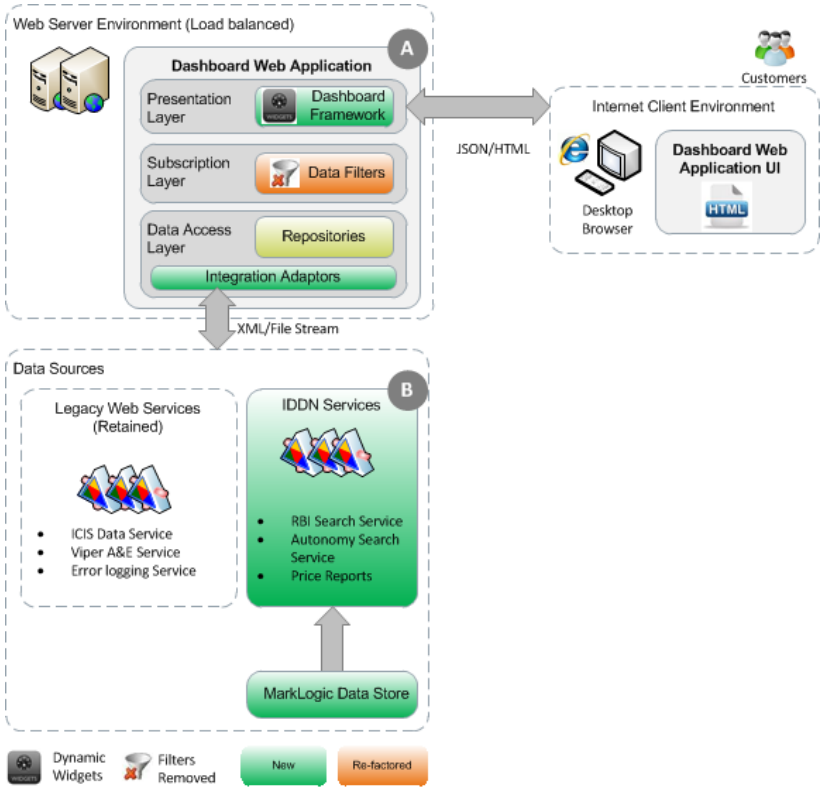
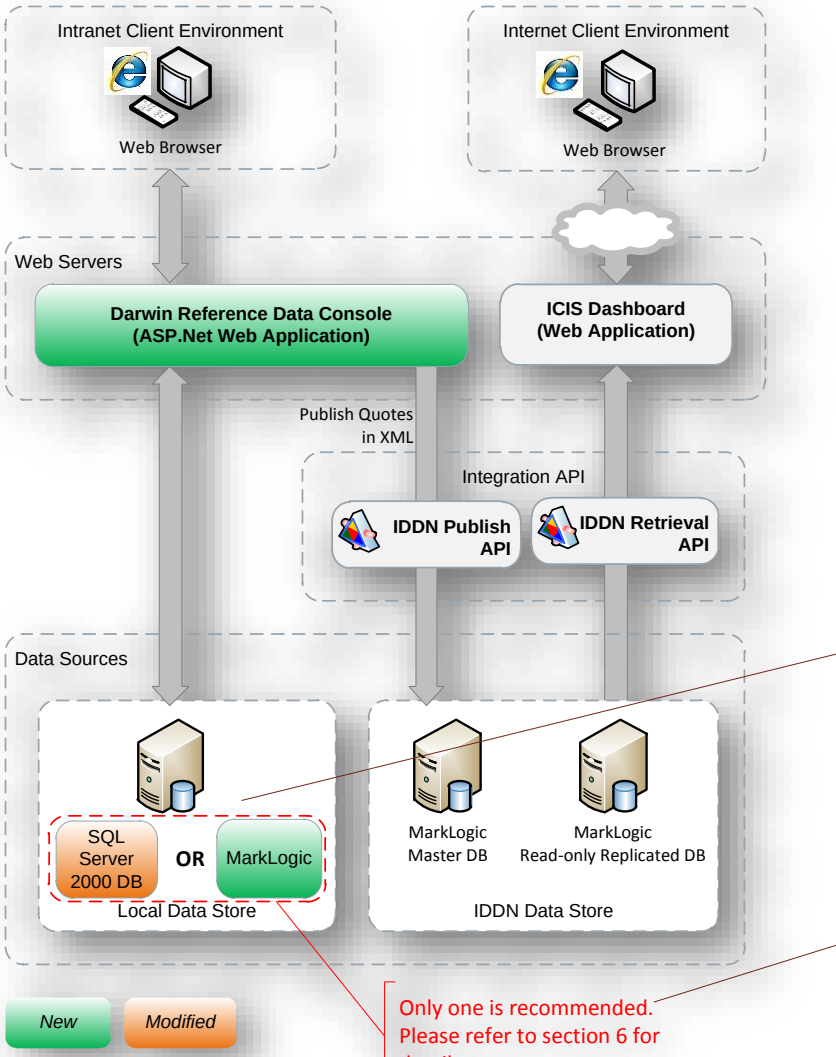


Diagram showing proposed system. Note the colors highlighting the differences from older system and usage of legends at the bottom of the diagram

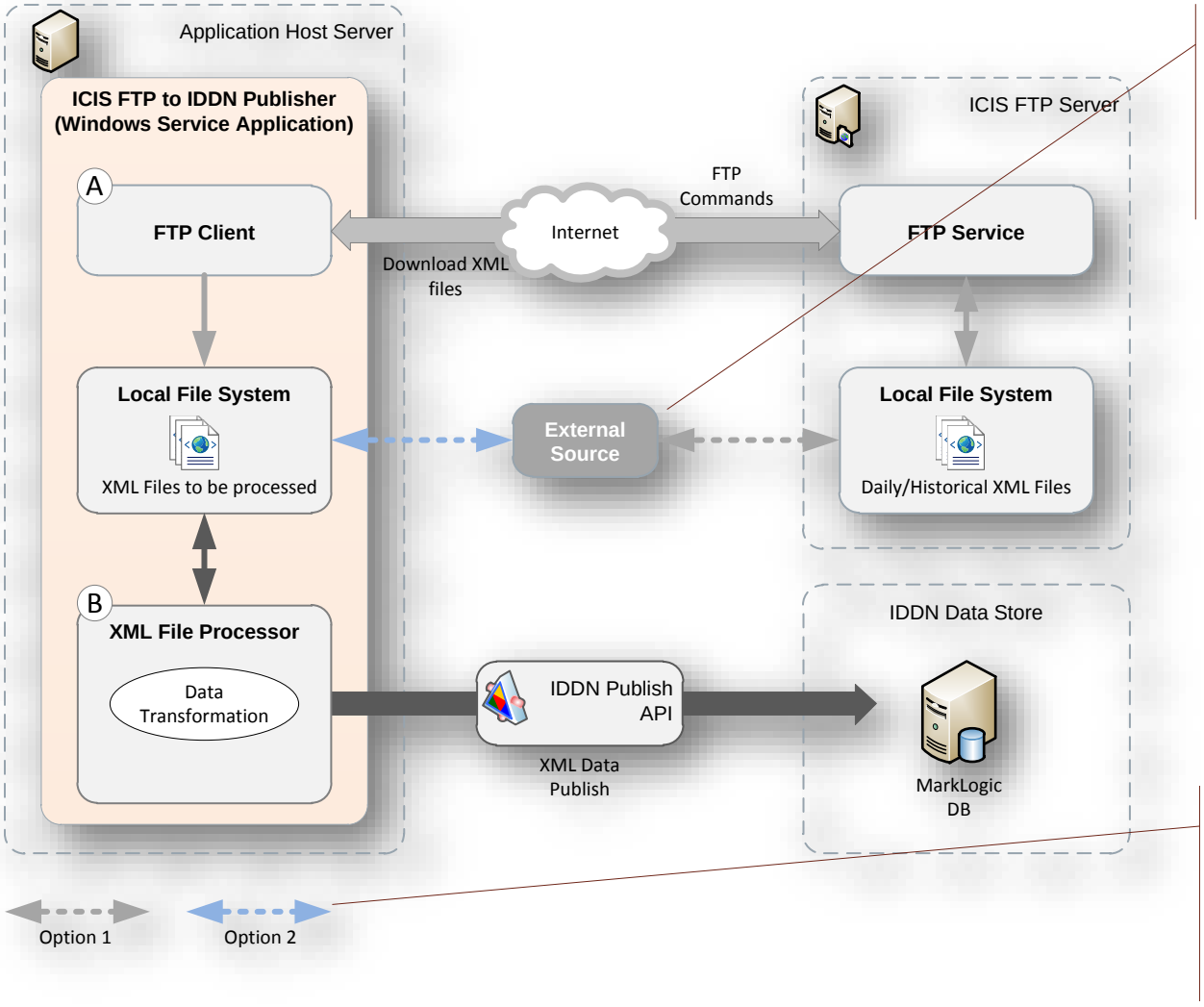
System Model – Showing alternative technology options



You can show multiple technology options in case any one is not finalized

Express your intent too

System Model – Showing alternate solution options

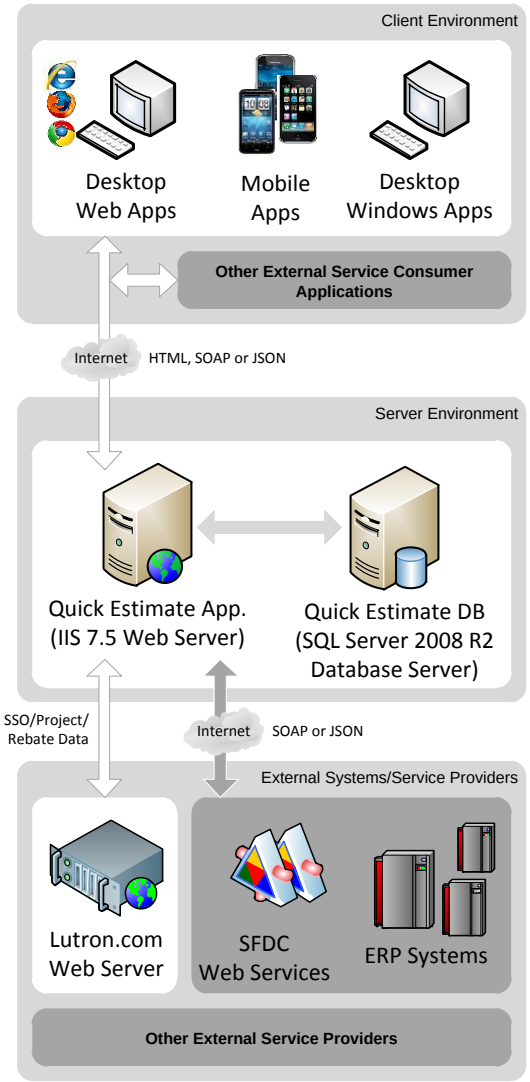


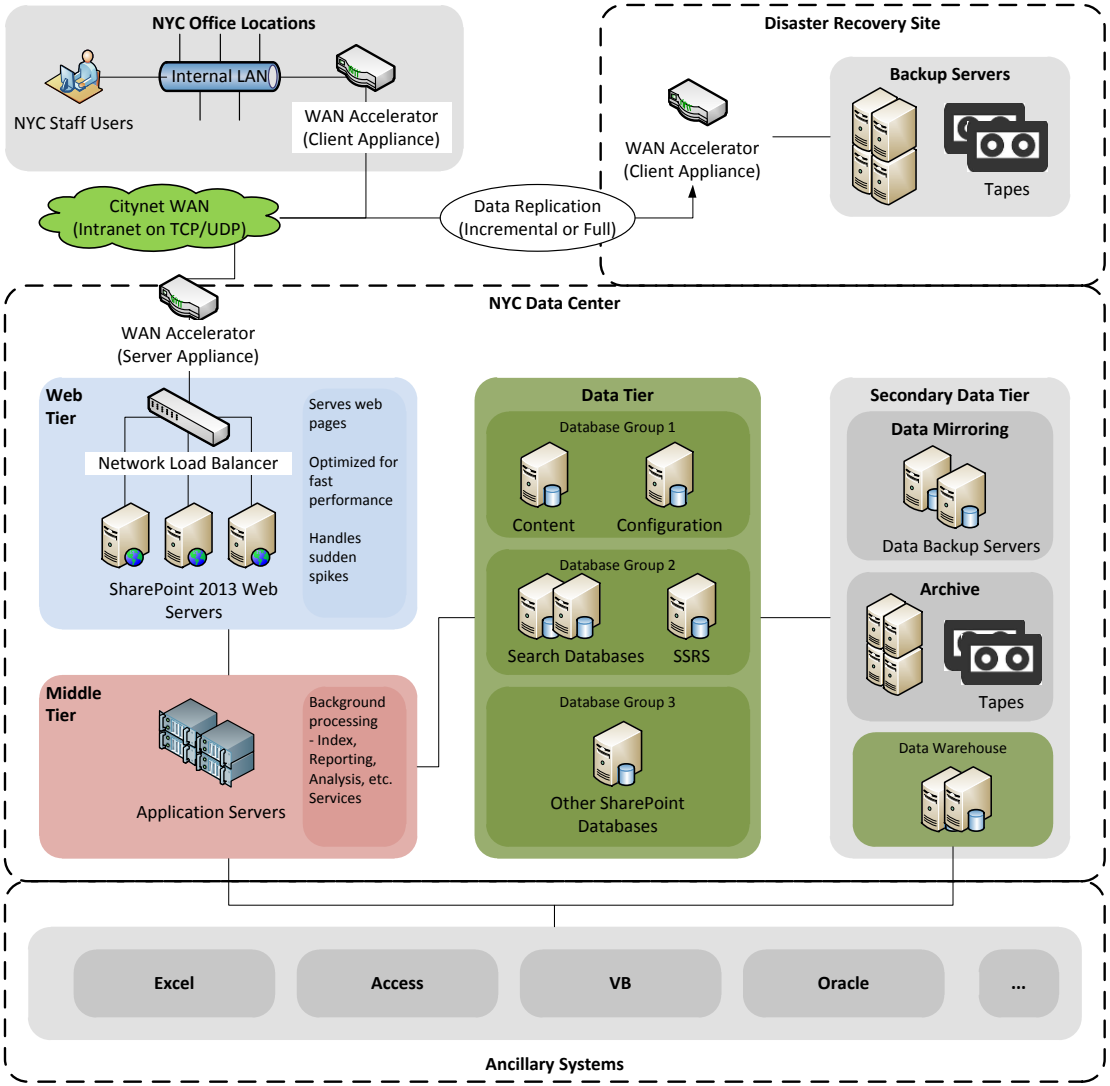
You can show multiple solution paths if any one of them is not finalized.

Express your intent to in form of legends at the bottom of the diagram

System Models – Other examples

System Model in different scheme of colours and design

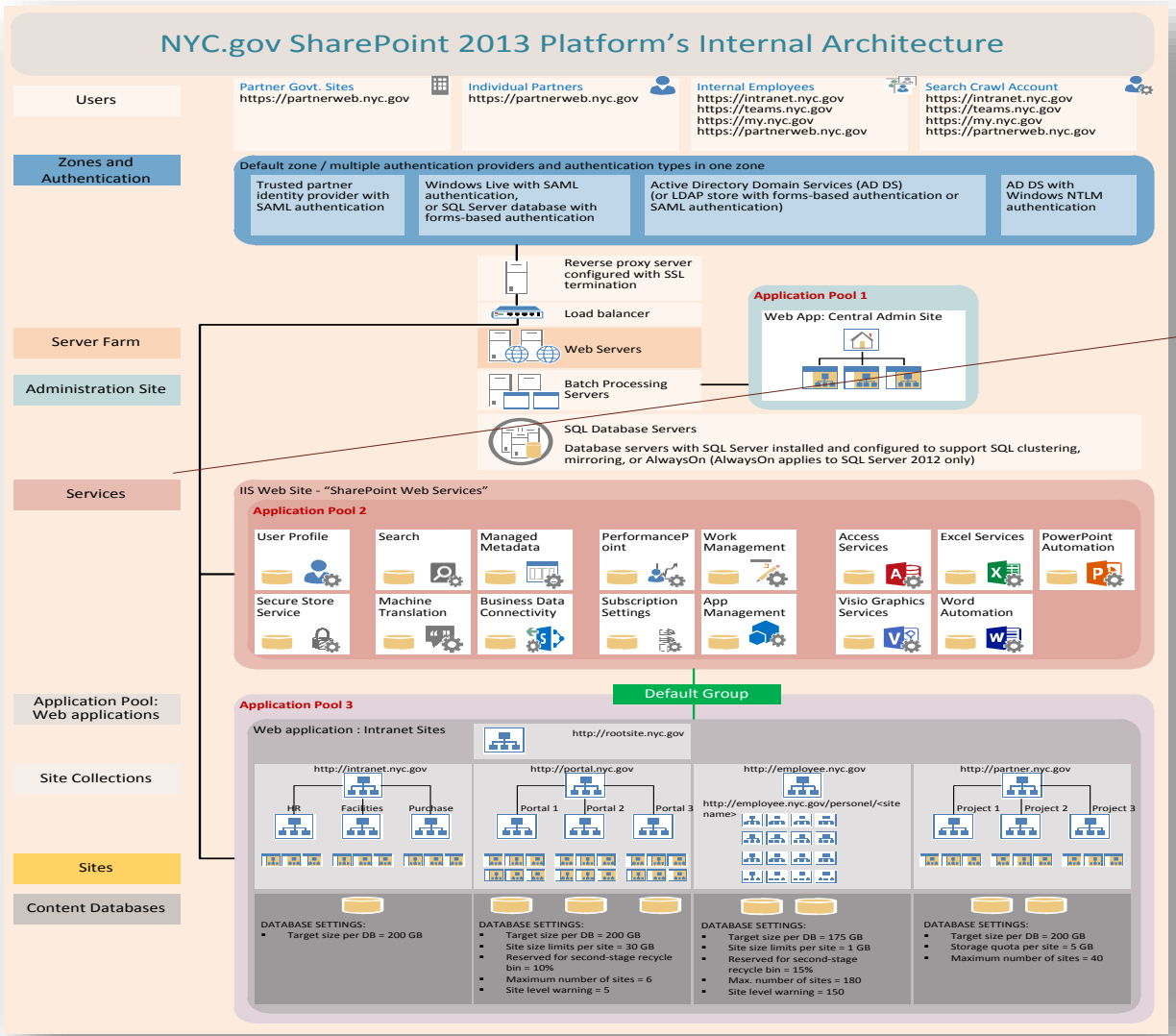




APPLICATION/COMPONENT LOGICAL ARCHITECTURE DIAGRAM

Application architecture – Advanced

Diagram showing deployment/process level details of an application

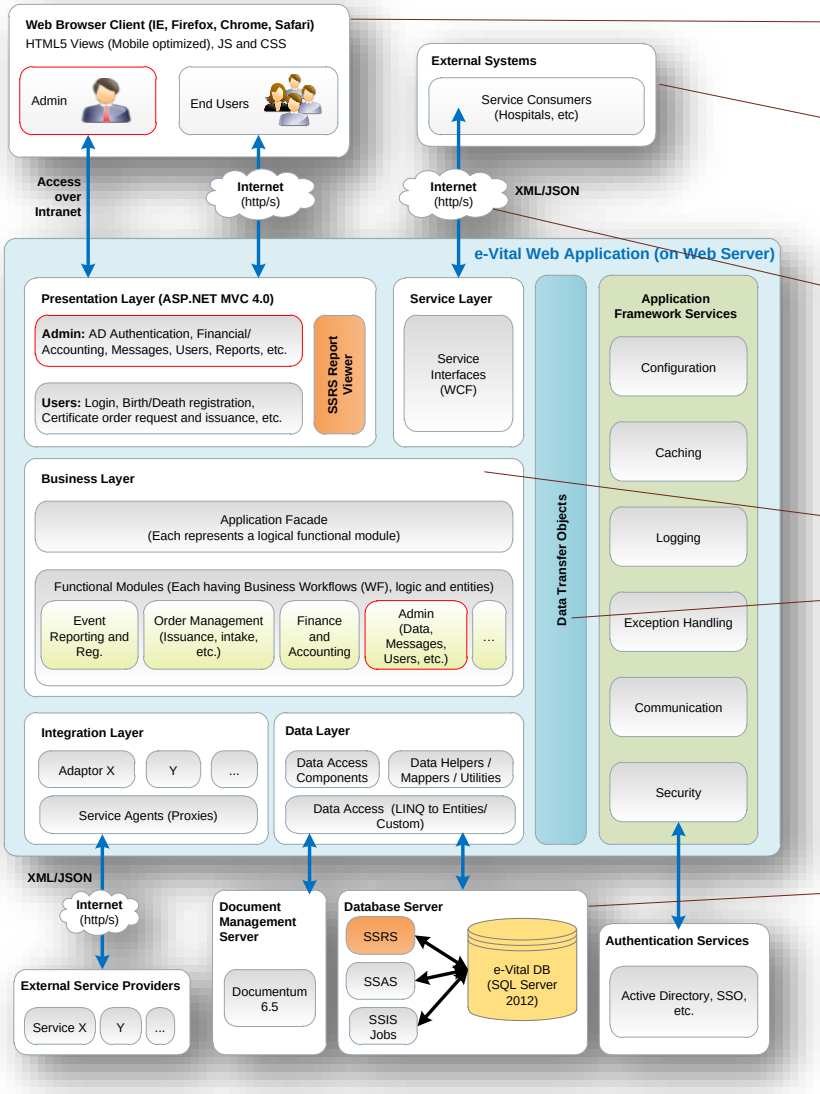


Use Visio to prepare a detailed application architecture if required.

Use labels at left side to name the layer we are talking about at right side

Keep the same color for both

Application architecture – Basic



Identify and show type of users on the top of the diagram

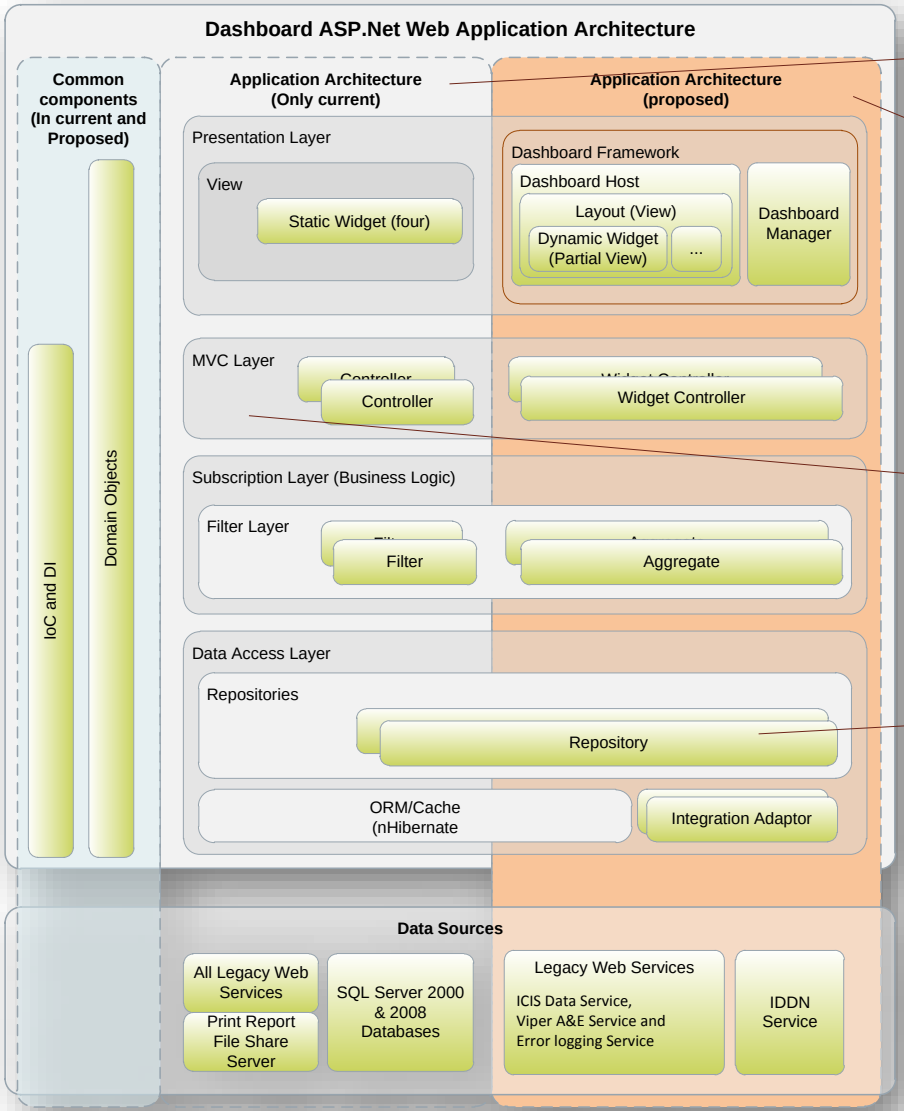
Identify and show external service consumers which connects to service layer

Use cloud to represent Internet connectivity

Show different layers in vertical stack format. Show cross-cutting concerns as a common layer

Identify other servers and their connectivity with the application at the bottom of the diagram

Application architecture – comparing two architectures



On left side, is the current application architecture

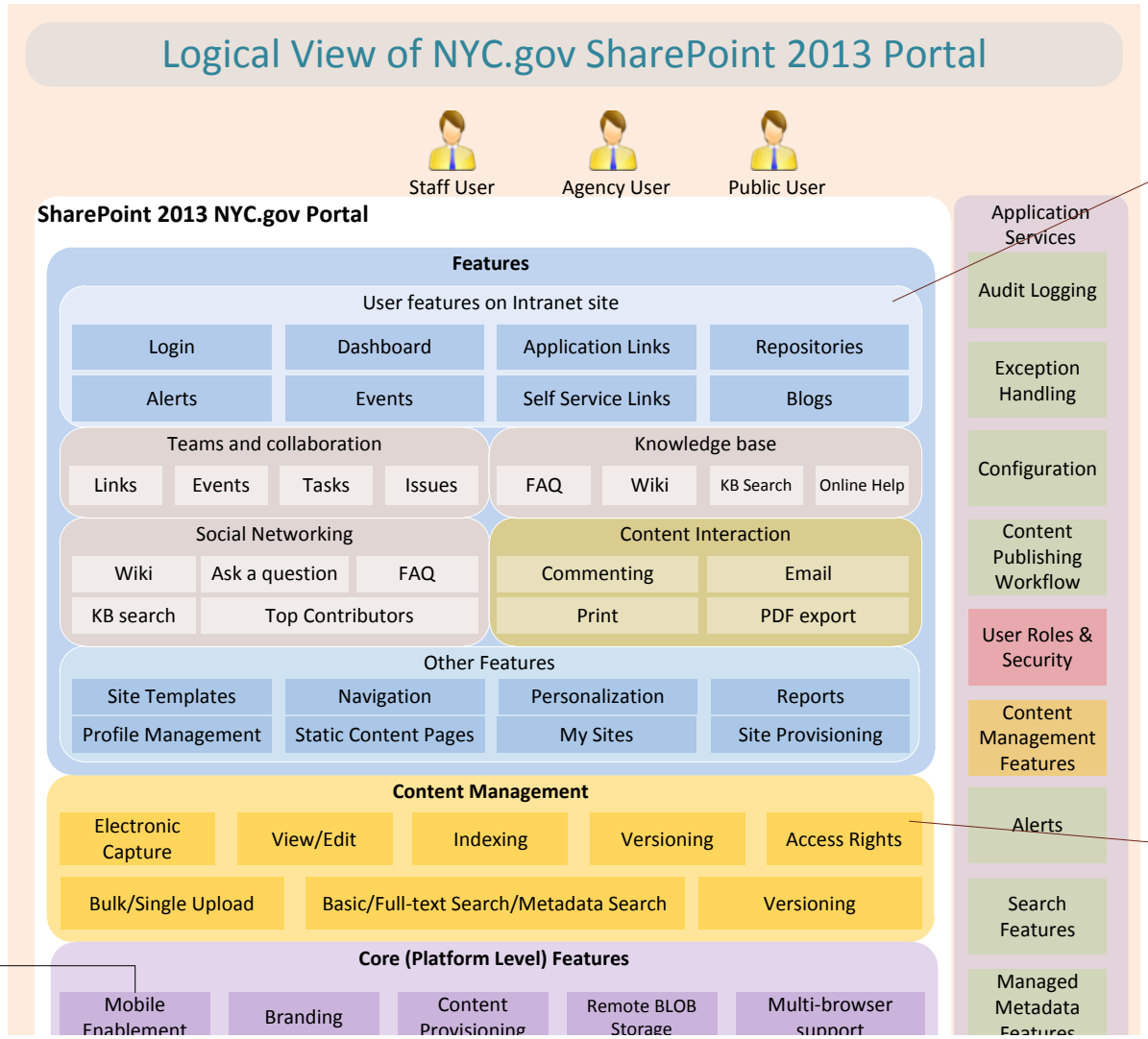
On right side, is the proposed application architecture having different background color

Application logical layers shown traversing across both sections

Components shown in both sections as common components

OTHER TECHNIQUES

Making transparency to our best use



Use transparency factor of around 40-50% to compose different blocks with in each other.

Transparency will give a more aesthetic look by not having strikingly different shades of color.

For example, in this case white color with 50% transparency is used to have a shade of color similar to the background

For example, in this case yellow color with 50% transparency is used for both container and sub-components.

Summary of guidelines

- Use light shades of color
- Use professional colors which include black, white and shades of grey, blue, light green, baby pink etc.
- Align all corners of the components
- Keep equal gap between different components
- Consider top-to-down and left-to-right approach
- Use minimum arrows.
- Give different shades to arrows to represent internal and external communication