Requirements Management

- It **involves a systematic approach** to collecting, documenting, analyzing, prioritizing, tracking, and controlling project requirements.
- These requirements can include functional, non-functional, technical, and even business-related aspects.
- The primary goal is to ensure all stakeholders have a clear and shared understanding of the project's goals.

Key goals of Requirements Management:

1. **Clarity and Understanding:** One of the primary goals of Requirements Management is to establish a clear and shared understanding of what the project aims to achieve.

2. **Scope Definition:** Clearly defining the scope of the project is crucial to prevent scope creep – the uncontrolled expansion of project requirements. Requirements Management helps identify and document the scope of the project, specifying what is included and what is not. This goal helps set expectations and ensures that the project remains focused and achievable.

3. **Documentation:** Effective Requirements Management involves thorough documentation of all requirements. This documentation serves as a reference point throughout the project lifecycle and aids in preventing misinterpretations or disputes. Well-documented requirements also contribute to knowledge retention, allowing future team members to understand the project's history and decisions.

4. **Change Management:** Projects are dynamic, and requirements can evolve due to changing market conditions, stakeholder feedback, or other factors. Requirements Management provides a structured process for managing changes to requirements. This includes assessing the impact of changes, prioritizing them, and obtaining appropriate approvals before implementing modifications.

5. **Prioritization:** Not all requirements have equal importance. Requirements Management involves analyzing and prioritizing requirements based on factors such as business value, customer needs, technical feasibility, and market demand. Prioritization ensures that the most critical and valuable requirements are addressed first, optimizing resource allocation.

6. **Alignment with Business Goals:** Successful projects are those that align with the overarching goals of the business or organization. Requirements Management ensures that project requirements are in harmony with the strategic objectives of the company. This alignment maximizes the value of the project and its potential impact on the business.

7. **Risk Management:** Requirements Management plays a role in risk mitigation by identifying potential challenges and uncertainties early in the project lifecycle. By thoroughly analyzing requirements, teams can anticipate potential risks related to feasibility, technology constraints, or market changes. Addressing these risks proactively minimizes their impact on the project's success.

8. **Communication:** Effective communication is a fundamental aspect of Requirements Management. The process involves facilitating communication between different stakeholders, and ensuring that their needs, expectations, and concerns are captured and integrated into the project requirements. Clear communication fosters collaboration and prevents misunderstandings.

9. **Validation and Verification:** Requirements Management involves validating and verifying requirements to ensure their accuracy and completeness. Validation ensures that the requirements accurately reflect stakeholder needs, while verification involves confirming that the implemented solution meets those requirements. This validation and verification process contributes to the development of high-quality products.

10. **Traceability:** Ability to track requirements from their origin through development, testing, and deployment. This goal is essential for accountability, impact analysis, and

compliance. By establishing traceability, Requirements Management provides a transparent record of how each requirement contributes to the final product.

Effective Requirements Management is a foundational practice within software development, project management, and various other industries where successful project outcomes hinge on meeting predefined criteria.

Benefits of Requirements Management:

1. **Clear Understanding:** Requirements Management ensures that all project stakeholders, including developers, testers, designers, and business analysts, have a shared and clear understanding of what the project aims to achieve. This common understanding fosters better collaboration and minimizes misunderstandings that could lead to costly mistakes.
2. **Reduced Ambiguity:** One of the main culprits of project failure is ambiguous or loosely defined requirements. A wellstructured Requirements Management process eliminates ambiguity by breaking down high-level concepts into specific, actionable requirements. This clarity prevents miscommunication and ensures that all team members are aligned.
3. **Controlled Scope:** Scope creep, the gradual expansion of project scope beyond its initial boundaries, can lead to budget overruns, missed deadlines, and decreased customer satisfaction. Requirements Management helps mitigate this risk by defining and documenting the project's scope early on. Any requested changes can be assessed against the documented requirements, preventing unauthorized scope changes.
4. **Enhanced Collaboration:** In a collaborative environment, different teams with varying skill sets and responsibilities need to work together seamlessly. Effective Requirements Management tools, combined with clear documentation, facilitate communication between these teams. This collaboration results in a more harmonious workflow, where ideas, feedback, and concerns are shared openly.
5. **Traceability:** Traceability is the ability to track a requirement from its origin through all stages of development and testing. This is crucial for accountability, impact analysis, and compliance. Requirements Management systems enable thorough traceability by linking requirements to design documents, test cases, and other artifacts, ensuring transparency and accountability.
6. **Improved Quality:** Well-defined requirements lay the groundwork for making informed design and development decisions. When developers have a clear understanding of what they need to build, they can focus on creating high-quality products that meet the specified criteria. This minimizes rework, reduces defects, and results in a more polished final product.
7. **Customer Satisfaction:** Requirements Management ensures that the final product aligns with customer expectations. By capturing and validating customer needs early in the process, the project team can make necessary adjustments and avoid costly changes later on. When the delivered product meets or exceeds customer expectations, satisfaction increases, enhancing the overall reputation of the organization.
8. **Efficient Resource Allocation:** A well-organized Requirements Management process aids in allocating resources effectively. Resources such as time, personnel, and budget can be allocated based on the prioritized requirements. This prevents unnecessary allocation to low-priority features and optimizes the use of available resources.
9. **Risk Mitigation:** Requirements Management identifies potential risks and uncertainties early in the project lifecycle. Through careful analysis and validation of requirements, teams can identify potential roadblocks, technical challenges, and feasibility issues. This proactive approach enables teams to plan for and address these challenges before they escalate into significant issues.
10. **Regulatory Compliance:** In industries such as healthcare, finance, and aerospace, regulatory compliance is paramount. Requirements Management helps ensure that products are developed in accordance with industry standards and regulations. Detailed documentation and traceability features aid in

demonstrating compliance during audits and inspections.

Choosing the Right Requirements Management Tool:

1. **Project Complexity and Scale:**
   - Consider the complexity of your projects. Are they small, straightforward endeavors or large, complex initiatives?
   - Evaluate whether the tool can handle the scale of your projects and accommodate future growth.

2. **Team Size and Collaboration:**
   - Determine the number of team members who will use the tool. Some tools are more suitable for larger teams, while others cater to smaller groups.
   - Assess the collaboration features of the tool, such as discussion boards, commenting, and feedback mechanisms.

3. **Ease of Use:**
   - Choose a tool with a user-friendly interface that is intuitive and easy for team members to navigate.
   - Consider the learning curve associated with adopting the tool and whether it requires extensive training.

4. **Integration Capabilities:**
   - Check whether the tool can integrate with your existing project management, development, and testing tools. Seamless integration improves workflow efficiency.
   - Consider tools that offer APIs or pre-built integrations with commonly used software.

5. **Customization and Flexibility:**
   - Evaluate whether the tool can be customized to align with your organization's specific processes and terminology.
   - Consider tools that allow you to adapt workflows, fields, and templates to suit your needs.

6. **Traceability and Reporting:**
   - Assess the tool's ability to establish and maintain traceability links between requirements and other project artifacts.
   - Look for reporting features that provide insights into project progress, requirement status, and potential risks.

7. **Version Control:**
   - Ensure the tool offers version control capabilities to manage different iterations of requirement documents.
   - Version control prevents confusion and maintains the accuracy of requirements.

8. **Change Management:**
   - Consider how the tool supports the process of handling changes to requirements. Evaluate whether it helps assess the impact of changes, obtain approvals, and track modifications.

9. **Security and Access Control:**
   - Check whether the tool provides robust security features, including role-based access control and data encryption.
   - Ensure that sensitive requirement information is protected from unauthorized access.

10. **Vendor Support and Updates:**
    - Assess the vendor's reputation and customer support services. Prompt assistance and ongoing updates are crucial for a smooth user experience.
    - Look for tools that are actively maintained and regularly updated to meet evolving industry standards.

11. **Cost and Budget:**
    - Determine the tool's cost structure, including licensing fees, subscription plans, and any additional charges.
    - Balance the tool's features and benefits with your organization's budget constraints.

12. **Trial Period and User Feedback:**
    - Whenever possible, take advantage of trial periods to test the tool's features and suitability for your organization.
    - Seek feedback from potential users to understand their preferences and requirements.

13. **Industry-Specific Needs:**
    - Consider any industry-specific regulations or standards that your projects must adhere to. Choose a tool that supports compliance requirements.

14. **Scalability:**
    - Ensure that the tool can scale with your organization's growth and evolving project needs without requiring frequent changes.

OPTIMIZING AND PUBLISHING ANIMATE PROJECTS

Canvas is a new element in HTML5, which provides APIs that allow you to dynamically generate and render graphics, charts, images, and animation. The presence of the Canvas API for HTML5, strengthens the HTML5 platform by providing two-dimensional drawing capabilities. These capabilities are supported on most modern operating systems and browsers.

Canvas is a bitmap rendering engine, and the drawings are final and cannot be resized. Furthermore, objects drawn on Canvas are not part of the web page's DOM.

To create an HTML5 Canvas document, do the following:

Select File > New to display the New Document dialog. **Select the Advanced tab** from the top of the screen and **click the HTML5 Canvas option**. This opens a new FLA with Publish Settings modified to produce HTML5 output.

Scalable Vector Graphics (SVG) is an XML markup language for describing two-dimensional images. SVG files provide resolution independent, HiDPI graphics on the web, in print, and on mobile devices in a compact format. You can style an SVG with CSS, and the support of scripting and animation makes SVG an integral part of the web platform.

EXPORTING ARTWORK IN SVG FORMAT

1. In Animate, scrub or move the playhead to the appropriate frame.

2. Select File > Export > Export Image. or select File > Publish Settings (select the SVG Image option in the Other Formats section.)

3. Enter or browse to the location where you want to save the SVG file. Ensure that you select SVG as the Save As type.

4. Click Ok.

5. On the Export SVG dialog, choose to Embed or Link to your SVG file.

Include Hidden Layers Exports all hidden layers in the Animate document. Deselecting Export Hidden Layers prevents all layers (including layers nested inside movie clips) marked as hidden from being exported in the resulting SVG. This lets you easily test different versions of Animate documents by making layers invisible.

Embed: Embeds a bitmap in the SVG file. Use this option to if you want to directly embed bitmaps within the SVG file.

Link: Provides a link to the path of bitmap files. Use this option when you do not want to embed, but provide link to the bitmaps from the SVG file. If you select Copy Images to Folder option, the bitmaps will be saved inside the images folder created at the location where the SVG file is exported. When Copy Images to Folder option is not selected, the bitmaps will be referenced in the SVG file from their original source location. In case the bitmap source location is unavailable then they will be embedded inside the svg file.

Copy Images to /Images folder: Allows you to copy the bitmap to the /Images. The /Images folder, if it does not already exist, is created in the export location of the SVG.

Optimize for Character Animator: Allows you to export SVG that works well with Character Animator.

WebGL is an open web standard for rendering graphics on any compatible browser, without the need for additional plug-ins. WebGL is integrated completely into all the web standards of the browser allowing GPU accelerated usage of image processing and effects as part of the web page canvas. WebGL elements can be embedded with other HTML elements and composited with other parts of the page.

CREATING A WEBGL DOCUMENT

1. Launch Animate.

2. On the Welcome Screen, click the **WebGL(Preview) option**. Alternatively, select **File > New** menu option to display the **New Document** dialog. Click the **WebGL(Preview) option.**

To publish your WebGL document, do the following:

1. Select **File > Publish Settings** to display the Publish Settings dialog. Alternatively, select **File > Publish**. if you have already specified Publish Settings for WebGL.

2. On the Publish Settings dialog, specify values for:

Output file Provide a meaningful name for the output. Also, browse to or enter the location where you want to publish the WebGL output.

Overwrite HTML Lets you specify whether to overwrite the HTML Wrapper or not everytime you publish your WebGL project.

Include Hidden Layers This lets you easily test different versions of WebGL document by making layers invisible.

Loop Timeline Repeats the content when it reaches the last frame. Deselect this option to stop the content when it reaches the last frame.

To create an AIR for Android file, do one of the following:

• Choose AIR for Android from the Welcome screen or the New Document dialog box (File > New).

• Open an existing FLA file and convert it to an AIR for Android file. Select AIR for Android from the Target menu in the Publish Settings dialog box (File > Publish Settings).

You can preview a Animate AIR for Android SWF file as it would appear in the AIR application window. Previewing is useful when you want to see what the visible aspects of the application look like without packaging and installing the application.

1. Make sure you've set the Target setting in the Publish Settings dialog box to AIR for Android.

2. Select Control > Test Movie > Test or press Control+Enter.

To publish an AIR for Android file, do one of the following:

• Click the Publish button in the Publish Settings dialog box.

• Click the Publish button in the AIR for Android Settings dialog box.

• Choose File > Publish.

• Choose File >Publish Preview.

Adobe AIR is a cross-operating system runtime that allows you to leverage your existing web development skills to build and deploy Rich Internet Applications (RIAs) to the desktop. AIR enables you to work in familiar environments, to leverage the tools and approaches you find most comfortable, and by supporting Animate, Flex, HTML, JavaScript, and Ajax, to build the best possible experience that meets your needs.

To enable direct deployment on an iOS device, do the following:

1. Ensure that iTunes is installed on the machine on which you have Animate installed.

2. In Animate, on the Properties panel, click the button, beside the Target drop-down to bring up the AIR for iOS Settings dialog

3. On the Deployment tab, select Install Application On The Connected iOS Device option.

4. Click Publish.

Create an Adobe AIR file

You can create Adobe AIR Animate documents using the Animate Welcome screen, or **the File > New command**, or you can create an ActionScript® 3.0 Animate File and convert it to an Adobe AIR file through the Publish Settings dialog box.

To create an Adobe AIR file, do one of the following:

• **Start Animate**. The Welcome screen appears. If you have already started Animate, close any open documents to return to the Welcome screen. In the Welcome screen, select Adobe AIR 2 (CS5) or AIR (CS5.5). Note: If you've disabled the Animate Welcome screen, you can display it again by selecting Edit > Preferences and selecting Welcome Screen from the On Launch pop-up menu in the General category.

• Choose File > New > Advanced from the tabs on top of the screen and select Adobe AIR 2 (CS5) or AIR (CS5.5) and click OK.

• Open an existing Animate file and convert it to an AIR file by selecting Adobe AIR from the Player menu in the Animate tab of the Publish Settings dialog box (File > Publish Settings).

You can preview an AIR SWF file as it would appear in the AIR application window. Previewing is useful when you want to see what the visible aspects of the application look like without packaging and installing the application.

1. Make sure you've set the Target setting in the Animate tab of the Publish Settings dialog box to Adobe AIR.

2. Select Control > Test Movie > Test or press Control+Enter.

To publish an AIR file, do one of the following:

1. Click the Publish button in the Publish Settings dialog box.

2. Click the Publish button in the AIR Application & Installer Settings dialog box.

3. Choose File > Publish.

4. Choose File >Publish Preview.

SPECIFY PUBLISH SETTINGS FOR ANIMATE

Publish Layers as SWF archive

Specify publish settings for Animate (.swf) files

Specify publish settings for SWC files and projectors

Specify publish settings for HTML wrapper files

Specify publish settings for Flash Player detection

Specify publish settings for GIF files

Specify publish settings for JPEG files

Specify publish settings for PNG files

Specify publish settings for OAM expor

ADOBE ANIMATE SOUNDS

TWO TYPES OF SOUNDS IN ANIMATE:

1. **Event Sounds**
   • An event sound must download completely before it begins playing, and it continues playing until explicitly stopped.
2. **Stream Sounds**
   • Stream sounds begin playing as soon as enough data for the first few frames has been downloaded; stream sounds are synchronized to the Timeline for playing on a website.

- If you are creating Animate content for mobile devices, Animate also lets you include device sounds in your published SWF file. Device sounds are encoded in the device's natively supported audio format, such **as MIDI, MFi, or SMAF.**
- You can use shared libraries to link a sound to multiple documents. You can also use the ActionScript 2.0 onSoundComplete event or ActionScript 3.0 soundComplete event to trigger an event based on the completion of a sound.
- You can load sounds and control sound playback using prewritten behaviors or media components; the latter also provide a controller for stop, pause, rewind, and so on. You can also use ActionScript 2.0 or 3.0 to load sounds dynamically.

TO IMPORT AUDIO, USE ONE OF THE FOLLOWING METHODS:

1. To import an audio file to library, select **File > Import > Import To Library** and select the audio file that you want to import.

2. To import an audio file to stage, select **File > Import > Import To Stage** and select the audio file that you want to import.

3. **Drag-and-drop the audio file** directly to the stage.

SUPPORTED SOUND FILE FORMATS

• Adobe Sound (.asnd). This is the native sound format of Adobe Soundbooth.

• Wave (.wav)

• AIFF (.aif, .aifc)

• mp3

• Sound Designer® II (.sd2)

• Sun AU (.au, .snd)

• FLAC (.flac)

• Ogg Vorbis (.ogg, .oga)

SOUND EFFECTS

1. **None** Applies no effects to the sound file. Select this option to remove previously applied effects.

2. **Left Channel/Right Channel** Plays sound in the left or right channel only.

3. **Fade Left To Right/Fade Right To Left** Shifts the sound from one channel to the other.

4. **Fade In** Gradually increases the volume of a sound over its duration.

5. **Fade Out** Gradually decreases the volume of a sound over its duration.

6. **Custom** Lets you create custom in and out points of sound using the Edit Envelope.

SYNCHRONIZATION MENU

Event Synchronizes the sound to the occurrence of an event. An event sound plays when its starting keyframe first appears and the plays in its entirety, independently of the playhead in the Timeline, even if the SWF file stops playing. Event sounds are mixed when you play your published SWF file.

Start The same as Event, except that if the sound is already playing, no new instance of the sound plays.

Stop Silences the specified sound.

Stream Synchronizes the sound for playing on a website. Animate forces animation to keep pace with stream sounds. If Animate can't draw animation frames quickly enough, it skips frames. Unlike event sounds, stream sounds stop if the SWF file stops playing. Also, a stream sound can never play longer than the length of the frames it occupies. Stream sounds are mixed when you publish your SWF file.