INNOVATION

Augmented Reality Training: Capturing Knowledge And Bringing It Back Alive

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Businesses are increasingly worried about losing years of experience as older experts retire. Augmented reality (AR) can be an effective way to capture and retain that knowledge while increasing engagement and accelerating learning among younger employees.

Plugging the knowledge and experience leak.

Many companies are uneasily aware that a lot of the knowledge on which their organization depends is not written down, formally defined or easily searchable. It lives in the minds of their employees, particularly the most experienced employees.

As these employees retire, they take with them the wealth of domain, procedural, context-dependent and tacit knowledge they have built up.

Even if you are aware of this problem and of how important it is to fix it, you may wonder whether there is anything you can do about it. A lot of that information is hard to capture and write down. These people are among your most productive employees — and often impatient to boot. Their time is valuable.

The development of augmented reality tools can be a much more effective solution to the problem of retaining just this kind of specific knowledge. These tools can make it easy to capture, process and make available the expertise of your most experienced employees.

Information can be captured as the work is done.

Conventional training materials require expertise, time and effort to create, and after they're created, they require frequent updating to remain useful. Usually, organizations have to manage some combination of manuals, SOP sheets, videos, computer-based trainings, shadowing, classes and workshops. Even if the effort has been put into all of these, it is still difficult for employees to connect this information with the specific location, equipment and situation that needs to be understood.

When most people initially think about AR, they see it mostly as a way of *experiencing* things or receiving information, particularly location-based information. That is certainly the consumption side of augmented reality, the way people being trained will experience it.

But businesses seeking to capture, retain and structure the organizational knowledge and expertise they are losing should start thinking of AR as the best way to do it, particularly in terms of procedural and tacit knowledge. It requires minimal overhead from the expert and is easy and intuitive to use, not to mention fun. It brings the subject matter experts right into the process of recording and managing their own knowledge, by far the best way to ensure its accuracy and its usability.

While there are many nuances, the basic way of developing an AR experience is from guided, intelligent capture. Using AR technology, an expert simply performs a procedure physically in the location and, under the applicable circumstances, comments as they perform it.

The person recording the procedure needs to be skilled but does not have to be an expert in the best way to acquire and transfer information. They are assisted both by the AR capture technology and by their own trainers.

That information then becomes flexible, context-dependent experience.

This recorded experience is just the starting point. The technology also provides guided ways of editing and compiling this information. The experiences of several different employees, with slightly different approaches, can be edited into a "best practices" version, annotated with variants if desired. It can incorporate auditory and kinesthetic elements as well as visual.

The captured experience identifies the necessary tools, parts, and other resources. It also provides immediate feedback to the eventual trainee, with whatever metrics and data have been determined to be appropriate to this particular situation. This information can be location-dependent and can be presented in a "just in time" way, making training most effective. Some procedures have a high cost of error, while others occur only rarely but must be done precisely. Each can have its own experiences associated with it.

The output is not limited to AR experiences. Once the information has been captured and distilled, it can be turned into images, text documents, checklists, quizzes and other formats for more general reference and review. Having a variety of formats — some immersive and some quickly skimmable — supports a variety of approaches to learning.

The first step in developing an AR capability.

When first kicking off an AR strategy, there are a few questions you and your consultant or vendor need to align on to get started:

1. What type of reality will this solution use?

2. What are the key capabilities the end users will need?

3. What human senses will we leverage?

4. What device(s) should we use?

5. What operating systems and software platforms will we support?

6. How will this experience be developed?

Like any powerful technology, AR is most useful when you recognize that it is your servant, not your master.

You need to be in charge of your own goals. You know best what your business is trying to do, what challenges it faces and what resources you have or want to develop. Are the key drivers of your business efficiency, speed, quality, compliance, cost or something else? Knowing this kind of information will enable you to provide any consultant or vendor with the information they need to start helping you structure your AR capture

and training program.

Most businesses find a guided workshop is the best way to develop a tailored AR program. It will help you identify the situations that are of the highest value or greatest risk. It will also allow you to get a real grasp on the technology and its capabilities, enabling you to understand how you and your people will use it and what that experience will be like. You will see how engaged employees become in such a program, which makes them much more intimate participants in training than they usually get to be.

AR is the next step in both capturing and conveying knowledge.

This new way of capturing and conveying information will enable new workers to quickly learn their new responsibilities and to continually upgrade their skills and knowledge. Learning and doing become more closely yoked, and younger employees enjoy both the method and the sense of mastery that they get from it.