

Theme 5: Intelligent Whiteboard

Introduction

Thank you for joining the Intelligent Whiteboard, being organized as part of the Radio – EY GDS Hackathon. In this session, we give you a quick overview about the theme, the expectations and answer some of the common questions that you may have.

Business overview

This theme is arising predominantly from the current pandemic situation which has forced organizations to radically change how they operate their business. Just like us, many organizations have moved into 100% work-from-home scenario, that has a multifold impact on the way we are running the business. And one key area where we have trouble is the whole human element bit of it, and in the way, we do work. Just to be specific, most of the work that we do involves collaboration, running workshops, running ideations. While the whole remote situation has been seamless in terms of not letting us drop the ball on the work side, it has sort of impeded the effectiveness of the collaboration. And if I had to really point a finger on it, it would be, lack of visibility on the body language of the team I'm working with. The engagement is not very intuitive, as in, we don't know if the employees who are part of a discussion or a brainstorming session are as engaged as they are supposed to be.

What is the business problem statement

As an organization we have moved into 100% work-from-home due to the COVID-19 outbreak. This new way of working remotely has forced us to connect and interact virtually. This has limited our ability to collaborate effectively to conduct workshops and ideations sessions.

Expected Goal

- ▶ Improved user experience while connecting virtually for workshops/brainstorming sessions.
- ▶ 25% time saving in post workshops deliverables such as process flow diagrams, structural representations etc.

Problem statements details

- ▶ Though we have multiple fragmented solutions available in the market to connect and collaborate, we are lacking a single-window solution that can enable us to have effective and productive virtual connects.
- ▶ A lot of manual effort is invested in converting ideas, thoughts, mind mapping, flow charts into digital format for further consumption and in making it presentable to a wider/leadership forum.
- ▶ Today we need to rely on multiple tools to collaborate for e.g. we need to use Teams/Skype for connecting, Mural for brainstorming or to collaborate, we need assistance to manage and keep notes & action items, multiple follow-ups, not all are technical savvy when it comes to newer solutions.

We were looking for a holistic solution that gives a good user experience and will not make us miss the actual work infrastructure. At the same time, we spend less time and effort on putting all the discussion points. All the outcomes of the brainstorming session must be in one place. The three aspects that we want the solution to focus on:

1. We have multiple fragmented solutions in the market today - be it Teams, mind mapping tools, visual tools to create process mapped. We use all of this, but it is not seamless from an experience standpoint. So, what we're looking at is a one-stop solution which brings all of this together and helps make the session more effective.
2. How do we really minimize the effort in bringing all the ideas together in a structured or unstructured format or in a visual format altogether in the form of a memo that can be socialized to the respondents.
3. We have to reduce effort in creating a memo or minutes of meeting.

Overall, the EY GDS goal is to find a solution which will ensure a seamless user experience.

Expected solution

Expected Solution

Intelligent white board that can recognize shapes, flow charts, handwritten text, mind mapping and convert them into digital format.

What's the expected solution? We need a whiteboard, which is intelligent enough, to recognize all unstructured data, structured data that is emerging during the session. The session could be a brainstorming workshop, or even a simple one-on-one discussion. All into one digital format, that is easily understood by the recipient of the

information. We have solutions available in the market, but they are all scattered or fragmented. And, for a person, to conduct brainstorming sessions, or collaborations virtually between the team becomes a little challenging. So, we're looking at something where all these things can be clubbed together. And get us same experience as what we used to do or what we have been doing during a brainstorming session in a conference room.

Desired end product – (Futuristic Perspective)

A one stop AI based solution over cloud , where the following can be achieved with our current solution in focus

- VOIP that allows users to make calls and chat with limited internet connections.
- A platform where we can have facilitator controlled breakout session Ex (Zoom)
- AI based solution that can record and transcribe discussion points and action items for further follow-up

It should be Artificial Intelligence (AI) based solution on Cloud, which has basic features such as, call facility and can run on limited bandwidth. A platform where a facilitator can run breakout sessions seamlessly while ensuring that there is no loss of engagement within the team. And third most important aspect is the whole transcription: how we can summarize the complete outcome of the discussion into a digital format memo.

Technical implementation

Capabilities and features of the whiteboard

- Recognize hand-drawn shapes on the whiteboard
- Recognize the connection between different shapes/mind mapping diagrams and calibrate the flow/structure
- Recognize hand written texts
- Post recognizing items, parallelly show the multiple preview
- Allows user to select one of the preview
- Post user selection, convert selected items into a digital format
- Output can be fetched in different formats. E.g. Excel, Visio, PPT, PDF, Word

Once again, I would like to stress on two things here:

- a. Firstly, most of these features are already available in the market, but there is no one-stop solution for a user to leverage these features through a single platform. And that's where we must focus.
- b. Secondly, our focus should be on transcribing things that are drawn or written during a session on the whiteboard. The verbal part should not be included and that too in the best possible manner - in a way one can design the process flow or any structure diagram in a Visio, or similar tool.

Integration details

From a technology standpoint, what we're looking for is a kind of application that we can integrate in our collaboration platform, so that anybody within the organization can quickly use it. Currently, MS Teams is the only platform we are using for our meetings and discussions. Therefore, we are looking for an application that can be easily plugged into MS Teams, and leverage the collaboration capabilities available within MS Teams. For example, if I have this application, I can quickly set up a meeting, add this component, and whoever is joining in that meeting can start using it, in real time. We are looking for an application that is easy to use and helps them focus more on the discussion.

The end outcome of the solution should be downloaded in a sharable format. One should be able to download the diagram/ transcript/ document in a PDF format.

Technology stack

As mentioned earlier, we use MS Teams which is an enterprise grade collaboration platform, used for meetings, video conferencing and any discussions. We are looking for an application that can be integrated with the Enterprise MS Teams platform.

MS Teams supports custom application development and therefore, the interface of the application should be an HTML file, and it should be using the standard development technologies, supporting MS Teams. Currently, MS Teams supports HTML assemble applications, and you can plug that into the Enterprise application catalog within an organization.

So, technically it is an HTML app on the front end, and on the backend, you can leverage other Microsoft platforms such as OneDrive, OneNote, Azure or others for storing your data. Other than that, there is no specific technology requirement. The only thing is, the front end should be HTML, and the backend, you should be using Azure based technologies, because in our Business Unit, we cannot opt for any other Cloud provider.

An example of such an application is Mentor Maps. It's a Brain mapping tool and you can view the demo on Google as well. It is completely integrated with MS Teams and provides us one functionality that we are also looking for, brain mapping on Teams.

With this application installed in Teams, participants can easily create maps. We are also looking for the same functionality, but not limited to just brain maps.

Resources

We have already shared a demo with HackerEarth. However, think about creating a graphical user interface and your participants are the people working on that screen scattered across the world and you just have one corner. You need one whiteboard, other people contribute.

The objective is to bring the characters to go to the Whiteboard, which means that they should be able to place characters on the screen quickly. We're not specifically looking for converting the characters that people are struggling to find on a whiteboard using the mouse. But, instead of that if we can find a way to quickly place characters or text on a whiteboard, it will solve the problem. For example, in Mural you can simply place a note on your diagram. Similarly, you can get ideas from other collaboration platforms such as Slack – we don't use slack in our team.

We use only MS teams, but I think application development is the same in most of the apps, and most of the collaboration platforms. They follow the same structure, like providing an HTML plugin model, and the backend communication platform.

Q&A

1. Optical Character Recognition (OCR), software application features are required to be a prime component of the solution?

Ans. OCR is good, because I believe it is for handwriting recognition. But I'm not sure how OCR will be an effective solution to recognize the characters that people are writing on a whiteboard. If it is possible, then, of course, we can use it. But the objective is, if we can even think about an alternative text on this whiteboard, maybe like what Visio is doing - just drop a placeholder and start typing it because we have the keyboard on there. You don't really have to use your mouse to write on the screen.

2. Do we also use Mural at EY GDS?

Ans. Mural is a very good and powerful tool. But the user interface of Mural is a bit complex. So, if you're planning to use mural, you have to set it up. And everybody who's joining the meeting, they should be completely aware of how to use that. Otherwise, people spend 50% of their time on learning Mural during the meeting, something we've experience during our previous meetings. Imagine a very focused meeting, where the leadership is also there, and a group of external participants are also there, then in that case, Mural is a difficult thing. We're looking for an easier solution, like Visio where you can just drag and drop, connect the shapes, etc.

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