



An Innovation in Online Attendance System: A Case Study

Dr. Monika Arora

Associate Professor/Operations and IT
Apeejay School of Management,
Dwarka, New Delhi
marora.asm@gmail.com

Abstract

Google has taken an advantage edge over cloud applications in innovation and storage these days. There are many Google apps available in Google. Google Drive is a synchronization service created by Google. It is also used for file storage and allows the users to store files in the cloud and mapped with Gmail accounts. Even all the Google applications are synchronized with Gmail accounts. These application also provides the synchronize files across various devices. This paper used Google Drive apps, i.e. one of the applications of Google drive. It can be shared to the users. The main feature of apps is files and that can be shared with single and multiuser. The options private, protected and public can be used. This paper attempts to discuss a case study in Apeejay School of Management as one of the templates for attendance application. This is an innovation has started in planning and design stage and further has implemented in the Apeejay School of Management. It has gear up the collaboration education system to the next level of expertise.

Keywords: Google Apps, Drive, Google Sheet, Education

1. Introduction

We all use applications on cloud in one or the other way. Google and Apple are the best examples of cloud based companies these days. The all the data is stored at the remote location called the cloud server. These data objects can be text (in terms of messages in any digital platform), videos, photos or documents. You can easily access

any document worldwide from any computer through an Internet connection by using cloud based services. Similarly, Facebook, Netflix or Gmail also stored their data servers on cloud where the cloud servers stores photos, videos and text. These objects can be retrieved from anywhere globally from any computer or device using internet connection. These objects are stored online and can be accessed by different services provided by Google and Apple for instance. These application services are Microsoft SkyDrive, Google Drive, or Amazon Cloud Drive. These services are blindly used by the people all around the world. It also has security and risks and naturally sensitive. When we are transferring everything on internet, we are having less control on your documents. It means your documents, photos or any other important documents are used by Google for their promotional activities. Google Fiber is a new advancement in terms of speed of broadband connectivity. The Broadband internet speed is 100 times faster as compare to what we have these days. The testing phase of Google Fiber in Kansas City is a big shift and step forward. The good/faster internet speed take cares of larger files stored and downloaded easily and comfortable. The exiting thing about the cloud computing is that we are moving our lives more on online. This means that we are ready to consider privacy, security, ownership and even energy consumption, which is certainly going to happen. Despite of the concern of security of documents and media files, the future is handholding with the latest developments in field of technology that is happening around

us. This is the one side of cloud usage. There is the other side of usage of cloud vastly for making our work efficient and effective. Google applications can be used to uplift themselves by using applications available to make our work more efficient. It can also be applied to any business. Even in case of education business it has a wide variety of applications. Some of the features of Google apps are as follows:

- With Google Docs, two or more people can work on a document together, live.
- Editable content can be managed by single click; these can be tracked user wise. In collaboration many user can work on the single document at any location. The document can be automatically saved and referred later at any time any place.
- You can configure more than one email at Gmail account.
- Your search will synchronize with you Gmail account even offline for example your friend plane tickets are received in your account, it will give you a reminder and the flight details and departure and arrival status of that day.
- Your android phone contacts will also merge with your contacts at Gmail account and it is synchronized and backup as well.
- You can edit Microsoft word, excel and PowerPoint files as well.
- You can also do the videoconferencing using Gmail messenger

This is in the same way, you think of something and that is available in Google applications.

2. Philosophy behind Google

Google was an effective search engine and also considered as a marketing tool of various companies. Also, on the basis CSAT (customer satisfaction) scores by 100% recently, means that the customer satisfied with the results drawn by Google [8]. It has doubled the customer satisfaction than last year. Google also uses artificial intelligence

for searches etc. It has become a most successful search engine. As we are very much dependent on Google, it is not only because of its searches but also it has facilitated with so many new inventions to the users. Time to time it has come up with dozens of apps. These apps facilitate the individuals in everything they do. It has given them a full freedom to use free of cost and take a benefit of it.

Altogether Google has made a platform where every document in the Google apps can be used as narrowcasting and broadcasting. Narrowcasting means specific to user preferences, where Consumers can communicate with people every day, this will exchange the idea about the consumer behavior and it influences in important ways. This will affect anything based upon product-people relationship established through the website, the classification is according to your likes and preferences. You get the advertisements according to your likes and preferences. The sample size affects to influence the customer. Be specific to what the user wants is a kind of narrowcasting. When you are speaking to a large audience it is called as broadcasting. When you share a document or an object as a public, it is considered to be broadcasting.

The narrowcasting decreases the capturing of the number of people while broadcasting leads to share more and more people. In broadcasting it drives to more and more set of people around so that it can reach to the public. For example anything published in the public portal for example website or blog etc.

The model of communication is an important to produce an attitude of individual to solve the purpose. In some cases it required to have broad casting and in some cases narrow casting is more familiar. The personal messages sent to the individual is an example of narrow casting but published as an broad spectrum is an example of broad casting. Similarly, Google

has come with the share option, where any document can be shared in public and is available to all in terms of broadcasting. It has also given you a freedom to create surveys, prepare documents in excel, PowerPoint and word and share it with the persons you want to be sending a link. The beauty of Google is if you want it cannot be replicate means the same document can be safe and can be used but has only one copy otherwise every time we open the document and a new copy is captured and used. One can work smartly on Google to prepare a working document and work on it and share it to all the users as in case of website we do. But these document can also be shared and give the edit rights of some individuals for making changes. Google has given a platform in work in collaboration.

There are 10 basic things that Google follows:

1. Customer is a King, one has to focus on user requirement; then every customer will follow you. Take the user experiences. Based on that Google has experienced the following: a) Where the search results has to be displayed. (i.e., placement of search results) b) what should be the results. c) The homepage interface or Google page should be clear and simple, so it loaded instantly. d) Advertising or sponsored link placement of results, it offers relevant content and is not distracting.
2. The best Search Engine: Google do only search and had become the world's largest research groups focused exclusively on solving search problems, It is the best research engine and it always want to do better. The team is dedicated in always trying to learning and applies new products like Gmail and Google Maps.
3. Google is fast: Google always respects the time of everyone. Time is valuable, so it generates the search results in a right way and highly focused. Google wants the user searches the results and go the actual results as soon as possible. A browser is designed for Mobile application and Google Chrome specially to have fast searching results.

4. Google works on real time of web works: Google give answer to every individual. Whatever is the query/ question or doubt, Google search results are listed based on the millions of individuals posting their links on their websites, blog etc. Anything that is on the internet is available for Google to link at the time of search. Google also helps the user to give when you had last visited the website and also when the last content was added specially in case of ads available at the top of search result pages. The Google search algorithm assesses the importance of every web page available at its database using a dynamic and variety of method. Out of all these techniques used by Google, it uses patented most popular PageRank algorithm. This algorithm, analyzes which websites have been at the top of the priority list and have been "voted". This algorithm take cares of all the new pages uploaded on the website time to time.

5. Mobile application. The increase in mobile usage has changed the overall scenario. The data which is gathered from websites and blogs now is also available in many other applications available on cloud and mobile compatible applications. People access information from anywhere in the world and wherever they want. In the meanwhile, the emerging technology has also made the people comfortable to see their emails and calendar events anywhere and anytime and they do not have to carry the computer or desktop. You can search anything on phone using Google. You can also watch video or movie or do the booking of tickets of train, movie or flight. There are also free, open source mobile platform services are available in android. It has brought an openness that has shaped the Internet to the mobile world.

6. Business with Google: Google has provided the businesses to the individuals easily. One can try earning easily. The advertisers normally use the "AdWords" to promote their products and publishers take the advantage of ADSense program to deliver relevant ads to their site content.

Google is making money on the basis of pay per click.

7. Information Overloading: A single html page in having text, images, videos, charts and graphs. Once the html page is indexed it means it is available on the internet.

8. Need for information for Google: Google was founded in California, but has a mission is to facilitate access to information for the entire world, and in every language. Google have offices in more than 60 countries, maintain more than 180 Internet domains, and serve more than half of results to people living outside the United States. 9. You can be serious without a suit: The founder built a practice that Google always work on idea and they take it as challenge. And always explore those challenges with fun and excitement. The people in Google believe that creative things are more likely to happen with the right company culture. There is an emphasis on team achievements and pride in individual accomplishments that contribute to overall success.

3. Google Applications (Apps)

Google Applications has worked towards the innovation which works for “One for all” and “All for one”. One for all means one document can be shared to all it can be shared publically, privately or protected based on user requirement. “All for one” means many users can work in a collaboration to make a single document. The single copy of the document can work. There are not different versions of document available. Also that is available any time and any place. Only thing you need is the internet connection.

A free web processor called Google Docs allows the user to share documents among active user and also collaborate in online platform. The users who can connect to each other can access the different documents online through Internet connection. This can also be accessible through mobile phone and tablets. The user can invite the other member and share the documents. Google

Docs is very easy tool that facilitates the access of information in a easiest way and also exchange of information via Internet. These documents on the drive is available on Google server and can be accessible anywhere anytime. These documents are automatically saved on the cloud without saving it on local computer. The file is open to use is automatically saved in order to prevent the loss of data. So, as it is available online, one can open it anywhere any time. This Google app is linked with one of the Google app, i.e., Gmail account. It means all the apps in Google are linked with your Gmail username and password. Using Google Docs we can also organize and save our documents using tags and can be shared with restricted access. This way the documents are organized in form of folders with access.

It is used to upload any documents such as spreadsheets, presentations or word document. It not only stores the documents but also have the option for collaborations, where one can work in a team with the Google Docs. The different types of features that documents have:

a) Upload the document: the different types of documents such as Word documents, HTML OpenOffice, or text b) Create the documents where you can format, use basic feature such as spell-check c) Share your documents with respect to the e-mail address and also invite for view and edit online at the same time and work on the same document. d) Publishing of document online (public or private) where everybody can have the access. Exporting or downloading the document in desired format such as Word, OpenOffice, RTF, PDF, HTML and zip etc.

Spreadsheets can be Import and export with .multiple formats such as xls, .csv, .txt, .pdf, .html and .ods extensions. One can also navigate and edit whichever document or spreadsheet you want while chatting in real time with other collaborators. Calculations and formatting are the features of Spreadsheet. The spreadsheet can also be

Embedded in blog or website which can be directly accessed online.

Presentations can be edited by different co-workers. It can be imported or exported in different extensions such as .pdf or .ppt. Insertion of images and videos are possible in presentations. One can View the presentations in real time viewing from any computer any time and any place. It can be Published or embedded in a website so that it can be seen by an online audience.

The Google app has certain limitations too. There is a limit to number of files, size of the files. A single document should not be more than 500k plus 2MB for images. In the spreadsheet there is a limit to 10,000 rows, 256 columns and 40 sheets. Also, for documents, 5,000 documents and presentations, 5,000 images and 1,000 spreadsheets in all can only be stored. 11 spreadsheets can be opened at the single time. As it is in the cloud, the content is saved in the web platform, do not required any local hard disc and one do not have to carry laptops, pen drive or hard disk. It can be directly accessed from any location. Also, there is no multi-versions are available. Many people can work on the single file. It also uses the single storage space. There are many tools available in Google for the use in an ELT classroom where the mentor or mentee, Teachers or students share their documents in a single platform.

4. Apeejay School of Management: A Case Study

Apeejay School of Management (ASM) is an industry-anchored, have been recognized and acknowledged by the All India Council for Technical Education (AICTE). ASM has a unique environment where people work in innovation and creativity. The B- School has dynamic faculty team experienced in academic or corporate. They offer a two-year full-time Post Graduate Diploma in Management (PGDM) Program. This

program has Marketing, Finance, Human Resource, Information Technology, International Business, Operations Management as specialisations.

This program built on our strengths in research and consulting in the areas of Marketing, Finance, and HR. The pedagogy of the courses is such that it involves the in-dept knowledge of the technical and the hard-skills over the span of two years. These courses promote the participative approach to learning and involving the students in extracurricular and co-curricular activities over the span of two years at both personal and professional fronts. The students are exposing to the collaborative environment in the campus by involving themselves in various activities such as cultural fest, mini marathon, organising conferences, blood donation camps etc. ASM wants their students to face the challenge and learn within a dynamic and tech-savvy environment.

The span of two years of this course, these students are challenged and encouraged to be enthusiastically handle the problems and achieve right results from the beginning commencing with a 'Bridge Program' at orientation classes. The program inculcate a student's mental and physical fitness is put to strenuous test with a 20 days training program involving workshops, communication classes and yoga and meditation sessions. This program ends up with a talent show organizes and done by the students. The course curriculum at ASM is a tempting blend of in-depth subject knowledge and practical experience gained through a continuous process of industry-academic interface. The involvements of guest lectures from industry and case based approach matters a lot in the development of individuals. So, every attempt is made to utilize the practical knowledge of a student and the same is considered while evaluating a student's performance through class test, assignments, projects, viva, observations, interaction and Case studies etc.

Special focus is to ensure that the students develop in well-rounded personality over the two years. Thus various personality and communication classes are provided to students on a regular basis to supplement their hard skills with soft skills. Students take Final Research project who have a keen interest in research this will help them to not only develop practical knowledge and analytical ability but also enhance their skill levels. The rigours two years of the PGDM Program will transform wonderful experience to the students as they will gain experience from our strong corporate interface within a tech-savvy and beyond-academic environment, besides learn from the traditional classroom teachings. The eligibility of the program is minimum of three years Bachelor's Degree with minimum 50% aggregate as eligible for taking admission in this course.

5. Problem Statement

Apeejay School of Management (ASM) leads with a PGDM Program. This program is trimester based i.e. six trimesters covered in two years. The student always complains about the manual attendance system where the teacher takes the attendance and that will be updated by the Assistant of the program office on monthly bases. Prof. Amit Sahani, Director, ASM Director/Head called a Meeting regarding this issue and assign the task to Prof. Magrita Aurora (IT/OM Head). Ms Magrita Aurora, joined the ASM in 08 May, 2001. She is working in ASM since 2001; it's a long time 17 years association. Ms Margrita is working as an area head in IT and Operations also have 4 years of experience in Software Company as software engineer. Dr. Sahani had assigned the task to her to see and solve this problem. Due to this, the students are not able to cover 75% attendance in the subject. So, as per the rule, they are not able to sit for the trimester end term II exam and they are considered to be fail in that subject. As per the examination policy each student should have at least 75% of attendance in each

subject. There should be 30 classes delivered by the faculty in total in each subject. But how many days before the attendance should be calculated. Every trimester got 7-8 subjects to be taken by different faculty. The Students are allowed to attend the classes up to last date and make up their classes up to last date. The students cover their attendance in which their attendance is short. The attendance is first filled by faculty and submitted to the Program Office and further recompile for all the students and put up at notice board. The faculty gets the attendance sheet at the starting of the month/ session. The faculty marks the attendance daily as per the class is schedule. As a regular practice the faculty submits the sheet at the end every month

The program office keeps the track of monthly attendance and displays it on the notice board on the monthly basis. Monthly, as the trimester system the student get the details of attendance details only twice or thrice. Even they do not get the preparation time for exams. The students who are at the border line of attendance even don't know whether they are able to give the exam or not. Because if the attendance is short, the student won't get the admit card and not able to sit for final exam. The program office will take 3-4 days to compile the total attendance and present for the final decision. As this had become a big problem and also a time constraint. There should be a solution which will update daily or weekly and also conveyed to the students as well. It had become an overburden to the program office to collect the two weeks attendance (probably 6 classes) and it will again take 3-4 days to compile.

6. Change Management

Ms Magrita decided to look for some solution to help the students. Ms Margrita had discussed the problem with Mr Dalbin George and assign a task to lab assistant Mr. Dalbin to look for some open source solution that may solve the problem of



attendance. Mr. Dalbin is looking for the open source solution 'Fedena'. Fedena is open source software having much more features than student information system. Fedena is not only manages students but also teachers, employees, courses & all the system and process related to any institution.

Fedena is a solution for school management system. Prof. Magrita & Mr. Dalbin had spent approx. 200 hrs to implement the solution. As it is a free openware, it does not have all the functionality for extra features a) options of extra classes, than normal classes and b) if the teacher is absent it is counting as a class. It is not reflecting in the teachers sheets. It is also concluding it as a class. As there is a problem with the open source software and solutions, it contains only basic functionality and the advance features are available in paid version. We have to go for purchase option. How to do it that became a problem, we never know, whether Magrita and her team is able to solve this problem or not.

As the time is passing by Ms Magrita is worried about solving the problem in some easy way; by some solution, which is easily manageable. She had heard about Google drive from one of her friend, who is managing their attendance through drives. Now, Ms Magrita has to search how she can use the Google drives can be used for student attendance. Now, she has to start doing the R&D on the Google drives for the implementation. Ms Aurora has to design a template for attendance. She had done the following steps a) search for similar templates in Google. b) Share it to the faculty c) Protect the faculty only to edit on their respective sheets. d) Send the template to the faculty to use. Somehow she had created the 2-3 sheets and assign to different users and done the testing. Finally she found that the template is working fine. The sample template sheet at Google drive is in figure 1. Thanks to technology, every solution is available, only thing is it should strike right thing at right time and right

place. Finally, Ms Magrita had come out with the template in 3 to 4 days. The template prepared is as follows (see figure 1).

S.No	Roll No	NAME	13/11	15/11	16/11	18/11/2015					%
1	22001	Aditya Uberoi	P	P	P						100.0%
2	22002	Aditee Kam	P	P	P						100.0%
3	22004	Ankit Goel									50.0%
4	22005	Ankit Narang	P	P	P						100.0%
5	22006	Ashra Malik	P	P	P						100.0%
6	22007	Bharti Vasisht	P	P	P						100.0%
7	22008	Chirag Verma	P	P	P						100.0%
8	22009	Deeksha Govil	P	P	P						100.0%
9	22010	Harsh Agarwal	P	P	P						100.0%
Total students											

Figure-1: Faculty entry attendance sheet

She learns and does the following steps to implement. a) Adding the user (faculty going to use the Google sheets. b) To share the Google sheets to the authorized users. c) Protect the sheets with the authorized users. d) Create the consolidate sheet for notice board display. Also create the consolidate sheet for website display for students (see figure 2).

S.No	Roll No	NAME	MIS_M.A.A	%age	HRM_MB_B	%age	Total classes	%age
1	22001	Aditya Uberoi	4	100.00%	4	100.00%	8	100.00%
2	22002	Aditee Kam	4	100.00%	4	100.00%	8	100.00%
3	22004	Ankit Goel	2	50.00%	2	50.00%	4	50.00%
4	22005	Ankit Narang	4	100.00%	4	100.00%	8	100.00%
5	22006	Ashra Malik	4	100.00%	1	25.00%	5	80.00%
6	22007	Bharti Vasisht	4	100.00%	3	75.00%	7	87.50%
7	22008	Chirag Verma	4	100.00%	3	75.00%	7	87.50%
8	22009	Deeksha Govil	4	100.00%	1	25.00%	5	80.00%
9	22010	Harsh Agarwal	4	100.00%	4	100.00%	8	100.00%

Figure-2: Consolidated attendance sheet

Also Ms Magrita had uses the dummy email-ids to test whether it is working fine for multiple users. She had created is new Gmail id to test the template. Finally this email can be used for different users as Program office, to maintain the details. For the implementation, Ms Magrita had to convince the director (Head of ASM) and the faculty members to use the sheets for attendance. This is going to be a

Technological use and change in terms of taking attendance. As Ms Magrita had conducted a session for the faculty members, to show how we can use the template for attendance. The director's concern was for the security of the data. Ms Magrita says, "As the sheets were protected, only the authorized user can access these sheets. So, it is fully secure."

Director (of ASM) was very focused and targeted person. He believes to get the things should be done immediately. He asked Magrita to contact a meeting immediately for all the faculty and discuss the template in open session. First, discussion was happened, Ms Magrita conducted the session and she had discussed the problem faced by our own students. Then, she discusses how this is going to help the students and program office by a live demo. Faculty members are influenced by Ms Magrita and are ready to update their attendance of subject. Now, Ms Magrita have to complete the sheets of all faculty for First and second Year. The faculty should complete their attendance through the template. Up to this it is half way, but what for sharing it with the students. Otherwise the purpose of putting is online efforts got wasted. Now the next problem is, about sharing the attendance to the students. Ms Magrita assigns the task to Ms Vinay Kumar, who had done MCA, competent to use macro in online result and same kind of application is going to be use in attendance display to the students. This is very interesting but shows he should get it done. The individual sheet by the facility is already maintained; now he wants a consolidate for program office and website display to students. The sheet should be generated dynamically. So that it could have become a regular practice and this attendance has to be display to students every week. Ms Magrita decided to display the attendance every Tuesday. Mr Vinay Kumar, will be using it for student display interface. The application for student display interface is shown in the figure 3

and figure 4. Mr. Vinay Kumar will take 10-15 minutes to get this available to the students where the students can see their

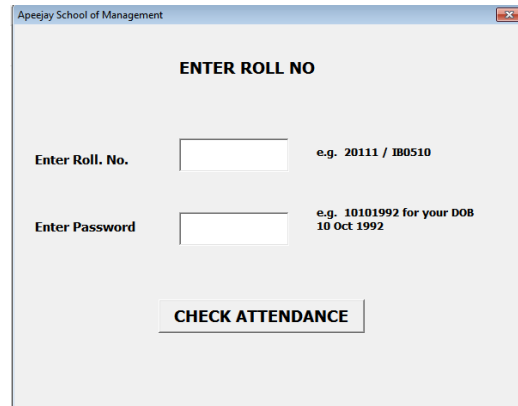


Figure 3: Student attendance interface screen

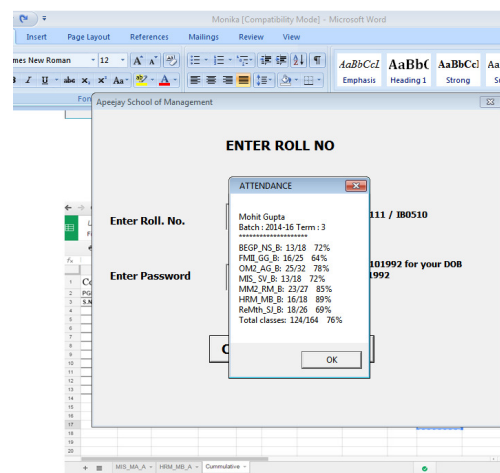


Figure 4: Student final attendance

present attendance

For the security purposes, the students should put their roll no and DOB and able to see their attendance shown in the figure 4. Prof Karan Kapoor (Dean of ASM) had given a full support and encouraged the faculty members to use the google drive attendance sheet for students. Dr Davinder Singh, Head of Program Office has also encouraged the faculty and staff members for the use of technology in daya to day life. This is a great learning and experience for ASM team behind the successful story of Google drive!!!!.

7. Conclusion

With the starting of Google drive using spreadsheet, Apeejay School of Management (ASM) has started with attendance and further incorporate their many more applications on Google drive such as Evaluation system, Feedback survey systems for stakeholders, Alumni databases, Call record system for admissions and Head office Dak Management System and many more. The use of system in a cloud has provided a support and secure system and available anywhere and anytime. Further, any education support ERP cloud based system can be implemented in future, so that it will automatically integrate the different modules of the education based system.

References

Electronic References

1. Cotos, E. (2011). Potential of automated writing evaluation feedback. *CALICO Journal*, 28(2), 420–459. Dang, T. (2010). Learner autonomy in EFL studies in Vietnam: A discussion from sociocultural perspective. *English Language Teaching*, 3(2), 3–9.
2. Darasawang, P., & Reinders, H. (2010). Encouraging autonomy with an online language support system. *CALL-EJ Online*, 11(2). Retrieved from http://callej.org/journal/11-2/darasawang_reinders.html
3. Dixon, D, (2011). Recent literature concerning the support of initiatives promoting language learner autonomy around the world. *Language Teaching*, 44(2), 266–276.

World Wide Web

4. <http://www.infoworld.com/article/2948125/cloud-storage/8-free-apps-pump-up-google-drive.html#slide2> accessed on January 20 2018
5. https://en.wikipedia.org/wiki/Google_Drive accessed on January 10 2018

6. <https://www.google.com/about/philosophy.html> accessed on December 20 2017
7. <https://www.businessinsider.in/15-amazing-features-in-Google-Apps-you-probably-dont-know-about/Send-email-from-different-email-addresses/slideshow/46462751.cms> accessed on January 15 2018
8. <https://www.forbes.com/forbes/welcome/?toURL=https://www.forbes.com/sites/micahsolomon/2014/05/05> accessed on May 09 2018