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SEIS 744 Semester Paper

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An essay concerning the application of IoT on modern day Church

An increasing digital world is forcing many traditional industries to adapt, and IoT can bridge the gab between the physical world and digital space. Many organizations are utilizing IoT to improve their operations, better serve their employees, costumers, and enhance the interaction experience. IoT is revolutionizing the way leaders facilitate process, manage employees or participants, and address key situations. The similar needs and issues are emerging in religious organizations such as churches.

The Challenges modern day church are facing

Church organizations are investing in technology to adapt their way of thinking quickly in order to avoid the risk of getting left behind in the future. But they must recognize that the people are changing, and the ways of communication are evolving, and they need to answer the challenges that coming with it.

Disconnected church

Old church buildings are starting to show their age and fall behind in terms of infrastructure and technology. Churches must be viewed as a platform that functions

together in terms of church operations, staff management, and regular member experiences.

Evolving members

As the distraction of modern day life and at-home convenience improves, many churches are seeing their service attendance steadily decline. And younger people are more tend to seek experience newer and more exciting verse traditional setting. Church organizations must recognize that attendants are evolving and engaging with churches in new ways, both from within the church and from the outside.

Stand Alone Data

Churches are gathering data on their staffs and members from multiple sources, such as basic information, weekly schedule, past ministry experience, etc. But these data sources are often not being integrated and managed in the most effective ways to provide insightful analysis on decision-makings. Usually after certain event is finished, the collected information is left in isolated files, instead of being collected to a central location for future reference.

Potential opportunities for transformation

IoT has transformed industries as it enables breakthrough results by bridging the physical and digital world in innovative ways, and drives value by integrating data sources and connecting with people through many technologies. So IoT can also transform the way church organization has been operating.

Data combing

IoT can provide churches with immense amounts of raw data about their staffs, sermons, church service, church building and regular members. When these data sources are integrated and used together, church can make effective insight-driven decision. Integrating the data gathered by different IoT sources and improving the connectivity of systems can improve venue and operation efficiency, enhance member experience, increase spending budgets, and provide real-time personalization.

Increase Venue Efficiency

Church organizations can leverage IoT to drive venue efficiency through a number of initiatives such as building performance, security, and temperature management. Monitor all building systems from a centralized area to track metrics such as energy cost and optimize building performance. Energy usage and lighting conditions can be optimized based on time of day and occupancy levels. Use surveillance cameras and facial recognition to capture suspicious behaviors. Adjust building temperature based on set requirements, including traffic count, machine usage and outside temperature.

Connect with members

IoT can also give churches the ability to connect with members through many mediums, including reward program, mobile and interaction technology. Once the user profile is established, all the activity involvement in the past will be counted towards participations records, reward and benefits can be given to the member for accumulated experience in relevant areas.

Enhance the participants' experience

Mobile apps are changing the way church members engage in the spiritual life while the reception of the sermon may still be the main focus for majority of fans, several enhancements such as past-time and real-time statistics, social media integration, participants will be encouraged to use new technology to express opinions and understandings with interactive means, and deliver reasonable feedbacks in public platforms.

Data driven decision-making

In general decision-making process in church organization requires laborious discussion among board members, and it is almost unavoidable to generate outcomes based on these member's knowledge and experience given their long-term involvement in the ministry. IoT key enablers such as networked hardware, connected display hardware can lead to detailed data analysis, allowing board members to tailor their offering to regular attendant's specific needs in real-time.

Use Cases

Example 1 – Member loyalty Programs

Current church member loyalty programs often fall victim to latency issues. They simply provide benefits too late for the member to engage or act upon potential opportunities, for instances, if a customer exceeds a certain threshold of concession purchases for church bookstore, the current model may reward them with a credit towards their next

purchase. This can be perceived as lesser value since the reward is not immediately redeemable.

Potential solution

Member loyalty programs enabled by IoT can remove the latency factor, creating a real-time offering that is significantly more personalized and valuable to the fan. If specific milestones and accomplishments provided immediate value, members would be more inclined to strive for those benchmarks and making real time decisions.

Impact

Integrating IoT can create value for the member, who can immediately reap the benefits of their loyalty. The church may also see increasing incentives of members in a wide range of areas from purchasing books, signing up for mission trips or retreats, to utilizing church facilities.

Example 2 – Church app for communication

Church organizations often struggle to collect valuable data on member availability and preference to organize events of different scales. This can lead to chaos formed by various email chains or clutters of Google docs. And a less personalized church experience and can leave the organization guessing on a specific preferences or perception of people in given time. This is especially troublesome for the irregular members, who may be less likely to attend an additional event if their interests are not addressed in time.

Potential solution

Mobile apps provides by an organization's system can enable a range or IoT capabilities in order to take a more holistic approach regarding member engagement. If a member chooses to opt in, he can fill in his own time schedule and personal interests of any area, the mobile app will become a direct interaction between the church and the member, allowing for significant data collection.

Impact

The data collected from mobile apps can be utilized to provide the member with a customized experience. For instance, the app could notify the member the best meeting time with the pastor, post prayer request and conversation time request, and seek if anyone in the same user group have the same needs. Additionally for event organizers, they can plan small group meetings and outings based on member's preferable times and interests that are readily available on the app.

Example 3 – Audience Sensors

With an increased focus on providing the members with valuable spiritual addressment, it is imperative that ministry team utilize big data, which can be used to derive such information. The data necessary to formulate these insights, however, can be obscure or hard to obtain, such as engagement level during sermon, post-message feedback, or people's general knowledge about the scripture.

Potential Solutions

IoT devices can be leveraged to obtain the data necessary to run meaningful analytics. By leveraging IoT technology, church organizations and ministry team can obtain real reception level of the sermon message from their members. Providing quick digital surveys could provide new data that was once not available.

Impact

With an abundance of data from member surveys and feedbacks, church organizations and ministry teams can generate the insights that the nowadays-church attendant craves. For example, by adding the option of asking for member's most desired book or topic to study, they can form different small based upon user preference, and increase the level of member engagement. The priest can restructure the way the message being presented based on posted feedback during or after the sermon.

Example 4 – Digital Sunday elements

New churches are further increasing their digital assets, but in many cases, they are failing to leverage the full potential of these assets to further engage the members. Resources were marginally invested to improve the quality of interaction during the message discussion.

Potential solution

Member engagement apps and other IoT technologies can be integrated into message visualization to significantly increase interaction between audiences and priest during and after the message. These innovations could allow for activities such as polls and

hash tag answers of discussion questions that are posted to church projection screens in real-time.

Impact

Digital church elements allow for member understandings and opinions to be displayed on a large scale and increase the member's perception of engagement. Polls could be posted on visualization hardware or even social media channels that marks the appreciation of the presence of those who contributes.

Further Outlook

Once these IoT methods being adapted to modern day church, the general public will vision the church experience with evolving prospects, more than an ancient institution focus on scriptures and disciplines around for thousands of years. IoT adaption in church will not merely borrow existing practice from other industries, but all the more generate more innovative ideas that enlighten us, just as it has been in the past.