Whitepaper

Internet of Things and Customer Relationship Management

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Introduction

In earlier days, the focus of Customer Relationship Management (CRM) was to reduce the cost around customer acquisition, retention, and servicing them. While the current CRM focus is also around reducing the cost, it has now become more about providing quality of service to customers. Companies are looking to retain their existing customers, and while they now have real-time integration, also through social media, with CRM applications, customers are looking for next level of services. They are expecting quick response and resolution to their problems.

However, what if, we are providing predictive and preventive actions by alerting our customers in advance, before they face the problem and provide a service or solution to the issues they might face in the near future? What if, we get to know the buying pattern of customer in real-time, and it will help CRM application to include them in the right marketing campaign?

Is it possible?

Yes, it is possible by using ‘Internet of Things’ and its tight integration with CRM Applications. This paper discusses the importance of ‘Internet of Things’ (IoT) and its use with Customer Relationship Management (CRM).

What is ‘Internet of Things’?

The dictionary meaning is, “A proposed development of the Internet in which everyday objects have network connectivity, allowing them to send and receive data.” To simplify this definition, consider your everyday objects like car, smart phone, cloths, refrigerator, TV, etc. are embedded with built-in sensors, and these sensors will collect the data on a certain event. This collected data will be sent to other devices to perform certain preventive actions, or to central system through internet. And, CRM applications will access the required data for further processing.

There are three important attributes you need for IoT:

- Sensors
- Wireless Internet Connectivity
- Computational Capability at the Device i.e. Data Processing Capability

Below image depicts the understanding of IoT with CRM application at a very high level.

According to Gartner, there will be more than 25 billion connected things by 2020. It means Internet of Things is going to be a huge connected network between people-to-people, people-to-things and things-to-things.
Future of Internet of Things in Application Development

a. Information & Analysis  
b. Automation & Control

<table>
<thead>
<tr>
<th>Information and analysis</th>
<th>Automation and control</th>
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<tr>
<td><strong>01</strong> Tracking behavior</td>
<td><strong>01</strong> Process optimization</td>
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<tr>
<td>Monitoring the behavior of persons, things, or data through space and time</td>
<td>Automated control of closed (self-contained) systems</td>
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<td>Examples: Presence-base d advertising and payments based on locations of consumers</td>
<td>Control of consumption to optimize resource use access network</td>
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<td>Inventory and supply chain monitoring and management</td>
<td>Examples: Complex autonomous systems</td>
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| **02** Enhanced situational awareness | **02** Optimized resource consumption |
| Sensor-driven decision analytics | Automated control of open environments with great uncertainty |
| Achieving real-time awareness of physical environment | Examples: Collisions avoidance systems to sense objects nad automatically apply brake |
| Examples: Sniper detection using direction of sound to locate shooters | Continous cleaning of hazardous materials through the use of swarms of robots |

| **03** | **03** |
| Sensor-driven decision analytics | Continous monitoring of chronic diseases to help doctors determine best treatments |
| Assisting human decision making through deep analysis and data visualization | Continous, precise adjustments in manufacturing lines |
| Examples: Oil field site planning with 3d visualization and simulation | Examples: Maximization of lime ldn throughput via wireless sensors |
| Continous monitoring of chronic diseases to help doctors determine best treatments | Data-center management to otimize energy storage, and processor utilization |

Generates Events and Send It to Central Server  
Central Server  
CRM Server  
Generates Events and Send It to Central Server

CRM Server Picks Required Data From Central Server

Sales Representative  
Marketing Representative  
Service Representative
Internet of Things and CRM

In current Customer Relationship Management, there are four important drivers (Source: https://www.gartner.com/newsroom/id/2665215)

- Mobile
- Cloud
- Social
- Big Data

According to Gartner, ‘Internet of Things’ is going to be the fifth driver after these four.

According to Gartner, “These drivers are spurring a critical need for more traditional operational CRM, as CRM continues to top software investment priorities. This further validates businesses’ focus on enhancing customer experience and consistent investment in CRM software, especially in CSS, marketing and sales software”.

IoT is going to provide valuable real-time data to CRM systems. It will help product companies in many different ways to increase their sale, promotions of new products, and provide next level of services to existing customers.

Jim Heppelmann, CEO of PTC, a US-based technology company named global leader in IoT platform by IDC Marketplace, and a leader in IoT software platform by Forrester, says, “The whole relationship with the customer is changing because companies are now able to stay in touch with the product after the initial sale. The product, in a sense, becomes a sensor for the relationship with the customer. Companies can gain amazingly detailed insights into the customer relationship by collecting and analyzing product usage data to understand how the product is performing, how much is it being utilized, which features are being used, and which features are not. Because products are now connected we can stay in touch with the customer throughout the entire lifecycle of the product. This creates tremendous potential for cross-selling and up-selling.”

Consider a scenario of hearing aid industry. Hearing Aid Industry has become more advanced and trying to introduce innovative features in their products. Examples could be longer battery life, Bluetooth compatibility, noise reduction or controlling your hearing aid device through smartphone, etc.

Let us take few scenarios from this industry and understand how it will help in providing services to customer, with the help of IoT and its integration with CRM.

Below are few examples:

- A customer’s hearing aid instrument’s battery is malfunctioning, and it needs to be replaced within next few days. As a customer service representative, you are informing the customer proactively and updating him that your instrument’s battery is having some issues, and it needs replacement very soon. It will help a customer to replace the battery, and he/she will not face any problem while using the product.
Internet of Things and Customer Relationship Management

- A customer’s hearing aid instrument is under warranty period and not working properly. Suddenly, one day you get a call from customer service representative that we are replacing your instrument, since it is not working properly and it is under warranty period.

Cisco predicts that the opportunity represented by the Internet of Things will be worth USD 14.4 trillion for companies and industries worldwide in the next decade.

- The customer is not using certain new incorporated features of an instrument because of some reason. On such event, service representative make a call to customer and ask for a session or training, so that he/she will get awareness of those new features and customer can start using it.

In all these scenarios, how service representatives will get to know about all those issues? It is because a sensor placed in a hearing aid instrument will send a notification to a central application that there is some issue with battery or instrument, and it needs replacement, or it will trigger some informative information that certain features of the product are not being used for single time. This notification will get integrated with CRM application, and a service case will be registered automatically against the customer. This generated case will be assigned to a service representative automatically, who will make a call to customer to update the problem, or asking for other services. This way a customer will be happy that the Product Company is taking a preventive action, and providing service promptly before any issue is faced. It will help gain the customer’s confidence on our services, products, and increase their satisfaction level as well.

Apart from this, IoT with CRM will help sales and marketing functions in multiple ways. Real-time data generated by IoT will help understand the usage of the product, buying pattern of the customer, opportunities for cross-selling and up selling, deciding flexible pricing, etc. Marketing people can analyze the IoT generated data to decide future campaigns that need to run along with right customers. It will help them reduce the cost in terms of market research. This data can also help the marketing function to identify those customers, which are at the edge of not using our products anymore. For such customers, we can run separate campaigns, or invite them for trade shows and product launch programs, and try to retain them.

Normally, it’s said that the life cycle of hearing aid product is of two years i.e.

- A product is launched
- After one year, its upgrade version is offered
- Then it’s a replacement with the new product

During this life cycle, IoT will play a major role to provide real-time data to CRM application. This real-time data will help to connect with the customer throughout product life cycle, which will help in multiple ways. It will help to improve products features, measure the product success, or increase the product sell, etc.
Benefits of Internet of Things with CRM Application

- Connected with customer throughout product life cycle
- Tremendous potential in cross-selling and up selling of products or services
- Real-time data will be available for analysis, which will help to support higher margin business operations
- It will help to provide proactive measures resulting in better customer service and their satisfaction
- Reduce in response time
- Increase in the profit margin because of decrease in service cost
- Provides personalized customer experience
- Right customer for right campaign
- Targeted offers to customer
- Send Customized marketing material and product broachers
- Automatic feedback tracking for the launched marketing campaign
- Reduce marketing research cost

Conclusion

Expectations of customers have tremendously increased from product or service companies. Customers are looking for prompt and predictive services. They will promote your product only when they will get a prompt service, and if product works well. They do not want to get multiple calls for product campaign or unnecessary calls of services and products, which are not useful for them. Companies also want to retain their customer base and encourage them to buy their products only. It is possible only through IoT and its integration with CRM applications.

IoT with CRM, will help companies grow their sale and business, while reducing the overall cost. In addition, it will help to retain the customer base and their satisfaction as well. CRM with IoT has a great future, it will take customer relationship to the next level in the near future.
About the Author

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Dinesh is a Microsoft Dynamics-Certified Consultant, with vast experience in Microsoft Technology. He has witnessed a transformation for Microsoft Dynamics CRM from version 4.0 to Dynamics 365, and has worked on versions 4.0 to Dynamics 365. He has vast experience of implementing CRM global templates across multiple industries.