



# International Journal of Innovative Research in Computer and Communication Engineering

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## A Survey on Better Tracking Using Digital Intelligence

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**ABSTRACT:** Humans are very well expressive with their emotions. Any Situation will make no two people to behave in the same manner, since all have their own emotions. So what the customers will expect from the product and how would they react to the same product service, is a major concern for digital markets. Hence there is a need to make a close study about the customer's behavior and find a way to progress in the growing digital world.

This paper focuses on why IT and Digitization should matter for the society and why the organisation should take responsibility for their teams and their own digital intelligence[8]. Digital Intelligence will incorporate customers (i.e users) interaction and their behavior towards a certain product with the help of some smart technologies. Importance is given fully to what the customers think and understanding them better, so they get the correct significance of the product received from the market.

**KEYWORDS:** Forrester definition, Layers, CXM (Customer Experience Management), values, emotions.

### I. INTRODUCTION

Digital Intelligence comprises of understanding the customer and how do they use your product, mobile site's, companies website or some apps, and then using this information to improve their experience irrespective of where, when and how they interact with you. In today's multi-channel, multi-device and digitalized world digital Intelligence has the possibility of transforming the digital information into real-time, customer-centric and actionable insights.

In the start of internet days, when we wanted digital presence it was possible only through websites. So "Intelligence" at that time was kind of web analytics and it was summarized. Then there was some evolutions in it and came up with digital analytics, and now we are heading towards digital intelligence.

Digital Intelligence is still emerging by focusing more on the people than on some aggregate metrics which were used earlier. Also it should look on more than a single channel, but many of the multi-channel today, actually takes only one channel at a time for making metrics.

**Cross-channel** means understanding what the single customer do in multiple channels. so, cross-channel marketing strategies will help brands in reaching to a current and future customers in a much powerful ways.

Eg: If a user is searching for a product on some website, but does not purchase it in reality, you can use cross-channel marketing to remarket the product which he or she has been looking for in some another medium, which includes email or some advertisements in the other sites.

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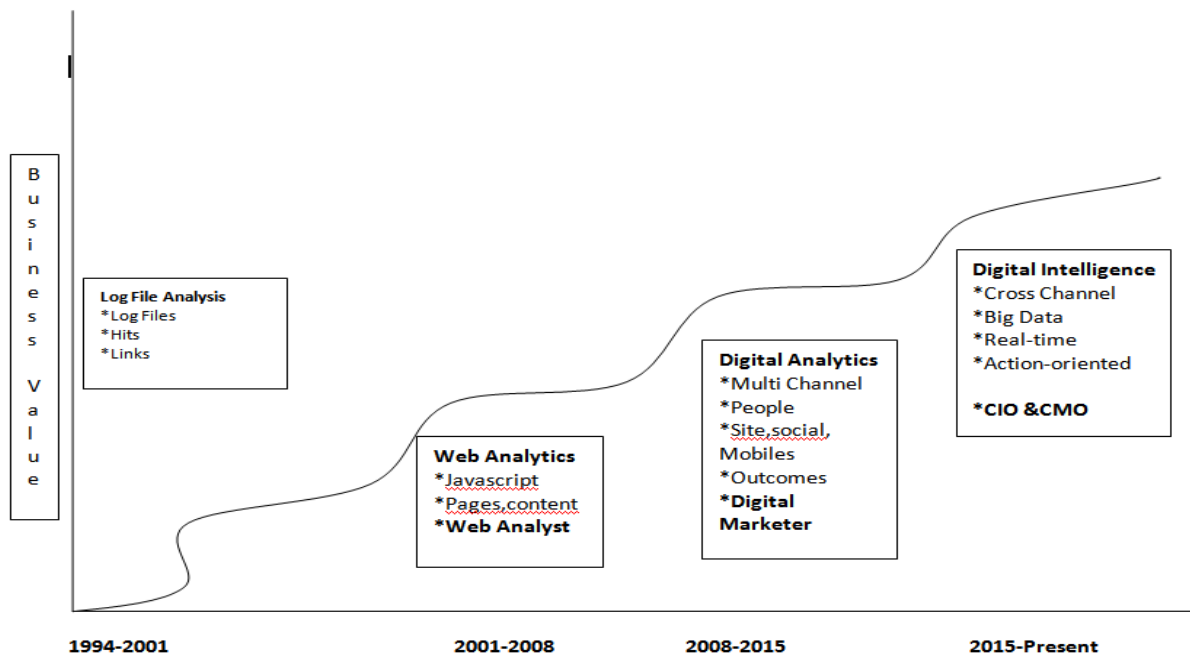


Fig 1. Beginning of Digital Intelligence

This chart depicts how the Digital Intelligence came into existence. From the time where we had just log files for analysis, then the pages and content became the part of analysis, then social sites and mobile were used for digital analytics. Thus the Digital Intelligence was developed by including Big Data and Real-time information.

## II. LITERATURE SURVEY

Digital Intelligence has been brewing from long time, especially in the field of web analytics. The market environment is changing and continuing to rapidly evolve to consider new experienced customers, new heights and highly coordinated customer experiences. As the scope of the markets are expanding, so must be the market analytics.

It's very well clear that the traditional approach was not made to handle the extent of devices, volume, speed and channels that enhances today's digital intelligence. The native symptoms of these gaps are obvious for anyone to see: the growth of analysis tools, the eruption of data warehousing projects, and the struggle to translate analytics into actionable insights. It is extremely clear that we need to take a step back and re-imagine about the analytics framework which supports modern digital marketing.

Digital Intelligence comprises of six layers:

- 1. Digital Input data:** consist of the data from all the digital markets point of contact.
- 2. Business Input data:** It combines the digital marketing data into a context along with data from the business.
- 3. Data Processing:** It involves fetching the data, combining the data and managing data with high degree of granularity and speed.
- 4. Data Warehousing:** Here we store the digital data, so that it may be available for the analysis and execution.
- 5. Analysis:** in this various reports and dashboards are prepared for data mining and forecasting the data in an effective manner.
- 6. Action:** makes analytical data prepared in analysis stage available directly to the applications which drives the interactions.



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## III.RELATED WORK

### Digital Intelligence- Backbone of Customer Experience Management

As it is very difficult to handle the content of the web in the absence of complete understanding of the customers. So, an effective CXM(Customer Experience Management) strategy allows the digital marketers to improve the data by creating a positive customer experience which improves satisfaction of users ,strengthens commitments and increases the profits. Also it makes available the right content to the right person at the right time[4].

All the market people should understand what actually digital intelligence is all about,and how does it benefit to the CXM.

**Forrester Research**[4] defined the Digital Intelligence as:

The capture, management and analysis of data to provide a holistic view of the digital customer experience that drives the measurement, optimization and execution of marketing tactics and business strategies.

According to them there are some challenging word:

**1.Holistic:** Due to the increase in growth of mobile accessibility and use of social networks, holistic view of the data is becoming more complicated.

**2.drives:** This means how the data is taken and used to take a certain actions accordingly.

For eg: if we want to optimize the customer's experience Now, then we have to see what happened to them in the last time they interacted.

If we want to evolve in the field of Digital Intelligence to drive CXM ,then we need to improve data actionability[4].It can be done in following ways:

**1.Data should be visitor – centric:** In CXM, aggregate data is not used. In short, there can be no “CXM” without a “Customer”.

**2.Cross channel:** Web channels are not enough as we need to know about the complete digital experience.

**3.Right Time to Real Time:** All the Actions are needed to be taken at a right time in order to optimize the results,even if its for NOW. Rapidly growing campaigns cannot wait until after the analysis is complete, as the customers will be gone.

**4.Open:** Digital intelligence is not just a process in data warehousing or fancy business intelligence,but it is about putting the data to use as soon possible. If the data is locked up in the propriety system, then intelligence needs to move from “Pull” to “Push”, meaning that it must proactively inform other marketing systems to not just wait to be queried.

**5.Predictive:** Digital Intelligence is somewhat a mix od Big Data and Big Science. Also its predictive and actionable.

So, by using these 5 elements marketing can move from aggregate,reactive and static to customized,proactive and personalized.

### Significance of Digital Intelligence for an effective CXM

As CXM is not a product.So we cannot sell it nor we can buy.CXM is made of some effective set of application that is delivered on its componenet.While several of the component might be because of their own integrated analytics,so its restricted to the single component in which it resides.An unified view solution cannot be existing if it depends on the set of point solutions.

Digital Intelligence enables us with the unified view.i.e integration of data from multiple sources and channels ,with individuals at the center. This allows to provide a very relevant offers like messaging and timing without depending on what channel the customer is experiencing at the moment.



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## Value of Digital Intelligence:

Many changes are made in this Digital World on the edge of the network, as we include the interaction of customers in their offices and home as well[1]. One Area from where we can add this interaction would be through Videos. For eg in Spain, some capture customers interaction in their home: like what events they watch in TV, their usage patterns and the preferences on home network[1]. Then the mining of this content is done using Big data in real time environment. Based on this intelligence better packages can be delivered to the customers.

Also there are some initiatives which is taken by DXC Technology in Spain to make a smarter cities. In Valencia and Santander, sensors are combined in Traffic and energy infrastructure and communicated to make city more energy efficient and healthier and safer[1].

## IV. PROPOSED IDEA

Emotions are what is missing in today's devices. Emotions are very important as it is the one which drives our behavior towards a thing, making decisions and how we communicate with one another. Even though there are many digital devices which have Artificial intelligence, smart technologies and embedded systems, there is a lack of emotions[11]. We can analyse a person's physical fitness by some measures, but we cannot measure their emotional state which is important to find overall understanding of a person's well-being[11].

One thing which may help us to better understand a customer's behavior is through monitoring their facial expressions. It is always noticed that a person can restrict his words but expressions cannot be hidden. So we can just have some customers to use the product under some observations. We can just observe their expressions while using that product, and also analyse their behavior about how they understand the things and what are they expecting. This actually needs a setup of some webcam and video analyser to have some algorithms which can help in capturing the expressions.

## V. CONCLUSION

This paper focuses on how the existence of digital intelligence happened, its importance and what more we can expect from it. Digital intelligence gives more importance to the customer's perspective. They are the most needed element for the progress of digital world. When emotions of customers are also included then, there are more expectations from this growing concept Digital Intelligence.

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