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# Marketing Research thought Near Filed Communication

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NFC Near Field Communication technologies in mobile phones and tablets, has an increased set up in the new hardware for mobile applications in the last period. The author will try a marketing research approach, using Meta data stored and transmitted through NFC Technologies. Therefore, a certain algorithm to read – and set up an information cube will be issued in last stage, but on this article we will debate the assumptions and conditions to be met, in order to allow the marketing research approaches by collecting the meta data from NFC activity of the customers with the mobile phones or tablets. The question is how to transform the marketing elements so that they can incorporate the NFC Technology.

**Key words**: marketing research, NFC, tap marketing, event processing, customer relationship

**JEL classification**: M31.

## 1. Introduction and some assumption on the NFC technology and the correlation with Marketing Research.

I suggest as a starting point some assumptions on the development of the actual context. Therefore, I do following assumptions: In an actual exchange of information, a buyer –supplier relationship is to be think also with an email exchange iteration. Let us think that relation also with regard to the web service, as an interaction between two software components. Furthermore, in the actual context, the internet data is accessed from hard drives with mechanical read –write mechanism, one can project this data access speed on "in memory" data storage. In addition, concerning the relational marketing hypothesis, we have a better understanding in the approach on relation equity, with a certain amount to exchange in regards to the purchase. (Equity-Theory; [online] 2015) Namely, here we expect an equity (post sales) relation – on the exchanged product/service and information. By this approach, the user/consumer will "pay" with information in exchange of service/products. Furthermore, manufacturing and investors expects to see real time performance. In this regard, they expect a communication method, which is transporting information as a web container. Also capable to be rewritten several times, allowing a quick connection with a certain transfer rate. A further approach is the relation between consumers and technical items in a large regard. Not only interactions between C-to-B, and B-to-B, meaning here optimizing dataflow B-to-B in this respect. Persuading this regard, we will discover the NFC, an initiative of Sony and NXP from 2002, at that times regarded as a technology trigger. (Nick Valmy; Infographic [online]; 2009) NFC is a radio communication RFID device for use under 10 cm, with RFID transfer of 424kb of data the transfer, nowadays under the ISO18000-3 of (DIN Deutsche Institut für Normung; [online] 2015) Not even going through the peak of inflated expectations, as suggested by hyper cycle emerging technologies (Janessa Rivera; Gartner Institute [online]; 2013), NFC had a slow entry in the domain of productivity once with the introduction by APPLE in APPLE Phones (model 6 and 6 plus) and with the application APPLE Pay ( The Apple Inc. [online] 2015).

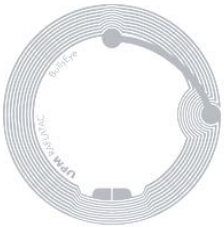

***Fig. 1. NFC Fear Field Communication tag.***
Source: 2015 RapidNFC Ltd; http://rapidnfc.com/ [online] / April 2015

Description for the NFC is: NFC is a ISO1800-3 RFID compatible, with a data transfer rate of 424kb per second, frequency 13,56 MHz and an operating time less than 0,2 seconds and distance less than 20 cm, the power consumption is under 15 mA, less than writing an SMS.

Marketing and actionable intelligence will focus on the business elements with the most interaction on the market. Gartner estimates that almost 85 % of the top companies will fail in 2015 to exploiting data. (Keith B. Carter ; Actionable Intelligence; 2015) There is not a new method, to use a mathematical approach to simplify complex rational expressions, using complex nominators and denominators to simplify the expression. Therefore, it is needed, a breakdown in basic components of the marketing act, so that we can recognize basic elements, and also make those elements available in real time. (Merriam Dictionary; [online] 2015)

## 2. NFC Marketing and a SWOT analysis.

In order to approach a NFC marketing campaign, I would suggest in the first place analyzing a SWOT chart, from the perspective off NFC Technology and its applicability. Furthermore, we will have a look at constrains and opportunities from NFC Technology. (Mitrea D.; NFC from Touch to Tap Marketing; 2014)

### 2.1. Strengths

Recent introduction of NFC Technology on Apple, with Apple Pay, will lead to a standardization of NFC payments, in first place, because trough payments, one can get the consumers profiles and data in an implicit manner. There is a two-way data communication in NFC. From NFC to a device, or from a device to NFC allowing information transfer in real time. In addition, this information is processed in real time and an interaction may be created. In addition, an https security protocol is used for this kind of transactions. A further strength: high penetration of mobile devices on Android and recently also on iOS system, along with shift in usage from desktop to laptop, to tablet, and virtualization, will lead to virtualization of some business processes, in regard of BYOD (bring your own device). High penetration of a personal profile on mobile devices from social platforms, (as mentioned the BYOD theme). Therefore, the assumptions is that NFC will exchange personal membership or Facebook information, and also to exchange employee information, if the NFC is used in business purpose.

### 2.2. Weakness

First, leak of standardization around NFC, with several small players regarding hardware. The top Investor is SONY, followed by Samsung and VISA (Sony Corporation; [online] 2015). Timing on data acquisitions for marketing, the feedback is to be stored on server level (regarding bidirectional communication). Multiple storage system on factory level, on sales unit level, sales division level - operate with different data typology and inconsistent standards or inconsistent naming conventions, or even worse with inconsistent data types – or web services. Sign off the data due data consistency and data reputation may be a risk.

### 2.3. Opportunities

NFC as a payment method, as mentioned, will probably replace trough mobile devices and mobile watch, the plastic money. NFC tracking devices (geolocation, gyroscopic), as mentioned above, with packaging collecting data trough sensors (for example temperature sensor). Therefore, the end consumer will actually can read the data collected (such as temperature of a shelf-life product), and avoid to buy older products. NFC will develop the consumer convenience and brand protection, trough aftersales connection with the main producer avoiding fakes and counterfeit products. Trough NFC - batch and production info's can be passed to the consumer. In this regard, products will interact with packages; packages will store information about products and exchange the information's with the customers upon further products and customer retention.

### 2.4. Threats.

Timing on data acquisitions for marketing, the feedback is to be stored on server level; it may lead to a long response time, much more that a native application based on the device. NFC working with web based packages of data, will need a powerful server and hardware background to run best in real time. A

next threat is the multiple storage system on factory level, on sales unit level, sales division level operate with different data typology. (Microsoft SQL Server, Google Big Query, or SAP HANA) In addition, Inconsistent standards, as well as inconsistent naming conventions, and inconsistent data types may lead to some risk. An interesting point, which may be an opportunity out of threat, is the sign off the data due data consistency and data reputation, so if the data is coming from employee data in case of BYOD or from a socialization profile, it has the necessary and sufficient data sign off value.

## 3. Marketing mix along the NFC Technologies

It might be helpful to relate also some others elements in relation to the NFC technology, like: event processing; counters and sensors; social analytics, private cloud computing, automatic content recognition and augmented reality, and social media infrastructure. It is not a new method and approach, to use a mathematical approach to simplify complex rational expressions, using nominators and denominators. Therefore, is needed a breakdown in basic components of the marketing act, so that we can recognize basic elements, and make those elements available in real time.(Merriam Dictionary; 2015) Marketing question to match the right idea and the right intuition, with the rights replies from the market and the right financial support for this direction.

### 3.1. Communication

NFC can communicate data trough content (incorporated and memorized information, on a hard ROM Memory) or through a web content which can be accessed by user action. For example, a smart packaging using temperature sensor, so the one can check the temperature history of the product with impact on the shelf life, like mentioned above. In addition, an anti-counterfeit NFC will communicate a serial number of batch and origin of the package preserving the corporate identity. (Innovation Excellence; smart Packaging; [online] 2015) For the Smart poster – with a NFC build in (with or without considering reusability), there are application available to buy Tickets and reserve seats trough mobile devices, in this regards, company SAPECOMO already developed a mobile app. product soon available on app store. I will reiterate the Idea that the NFC can communicate bidirectional; we will see later the Price component in the marketing mix. Individual communication will here take the shape of a personal profile exchange of socialization and loyalty of the person as consumer. Communication is interesting to consider the approach of geolocation correlated with personal information. Log in in Museum, at the bar, hotel or a bus or train station, may lead to results in information concerning persons with a certain profile and the geographical patterns used, with activity.

### 3.2. Product

Post Purchase smart packaging, enable to connect product packages to digital experience. (Brandpackaging; [online] 2015) Thin Film Company is suggesting a correlation between NFC technology and a kind of sensors attached to products, for example temperature sensors. (Thin Film Corporation, 2015) Therefore, besides the NFC Data exchange, Thinfilm enable also temperature tracking, or some other kinds, of sensor tracing to his packages, also information if it is still sealed or already opened. Product is the physical one purchased, and in addition may have some NFC software content, or a service content, or can be a service purchased, or any other correlation in between, or also a warranty content. In addition to the Museum Ticket, for example, the consumer can receive also a digital content of information and a guide. Differentiation of the product relate to branding, and to the Product Lifecycle Management. Also, for industrial products, an interchange of data with regard to periodical technical inspections is here on interest. Now let us consider the technical inspection not with a necessary lead time and with time necessary to perform the technical inspection, but with data transmitted in real time through an NFC interface, device to device. Production planning and the KANBAN concept are enabled and can be enhanced with the NFC bidirectional data interchange. Total Quality Management – and the Six Sigma methodology enhance trough NFC, and therefore overproduction and underproduction avoided, due real time signals from market on a sort or on customized products. Produces can become also interactive like an internet page.

### 3.3. Distribution

Distribution has taken some important steps, because of the NFC embedded almost in every mobile

smartphone, with the mobile devices incorporating NFC, also a physical distribution of NFC payment devices will be done, once with the investments from VISA in this area. A certain point of the distribution is on the one hand the interaction with valid profiles from social platforms, and on the other hand a geographically distribution. NFC enable the geographical dispersion and a certain trace and reach of the target group and the target segment. So loyalty of the target group can be established and maintained physically, as the same region, town, area, and also virtually, which reunite the same typology of the target group. Distribution channel will actually be physical and virtual, and any other combination in between. Capitalization on user emotion linked to a brand trough geographically distribution linked to social profile is here an interesting approach.

### 3.4. Price

At the first glance, the attraction of Mobile payment will set probably the standards in NFC usage. Apple invested also in Apple Pay, and set up the hardware in Apple S6 and Apple S6 plus, in order to access payments through NFC (Apple Inc. 2015). NFC Wallet was already set up by Google (Google Inc. 2015) on the Android devices. NFC payments can successfully replace the plastic money, and the credit cards in this actual version. In addition, it will enable a price configurator, meaning the price can be set up in regard of the person who is buying the service or product, meaning, the NFC bidirectional communication possibility can be used for this purpose. The connection in this case may be directly with the CRM Software who can calculate upon contract and loyalty parameters the price separately for every consumer accessing the NFC of the product. Proximiant is a next pricing product (Proximiant Inc. [online] 2015), of the category tap and go, which allow receiving the bill in an electronic format, also calculating a different price from person to person, if the person is registered in the database. Regarding Mobile Payment with NFC and Authorizations, an issues here seems to be obsolete, concerning the standardization trough VISA and some other key player in data security, using https secure encryption.

## 4. Marketing Research Questionnaire

The data source is in the NFC marketing research not a conventional one, so setting the right questions and finding the right path may be difficult. Data will be gathered from traditional questions and from augmented reality and NFC devices. The correlation between Traditional questions and Data must be documented in a data dictionary, with data standardization, in order to avoid the gaps of big data, were irrelevant data series are almost getting into correlation.

Questions proposed:

**Trust in the Eco-System:**

1. Would you log on with Facebook Account? (Good Data consistency; data sign off as being real)
2. Would you log on with Linked In account? (Good Data consistency; data sign off as being real)
3. On Time Event log on ? (Medium Data consistency )
4. Without Log On – Data ? (Poor Data Quality – Exit interview)
5. Log on regarding a benefit purpose? (or accept data exchange without a benefit (discount)) ?

**Trust in the profiling technology behind**

6. Do you trust the NFC – payment technology (NFC Payment)
7. Do you trust the NFC payment data privacy and security? (NFC Payment)
8. Is it easier for you to pay with NFC ? (NFC Payment)
9. Would you expect a discount? (NFC Customer Retention)
10. Would you expect a targeted discount on your interests? (NFC Customer Retention)
11. Would you share the payments habits in order to profile you with a discount strategy?
12. What kind of suggestion do you have in this regard? (open)

**Individual character questions**

13. Is it risky to enable NFC services, products, payments? 1-2-3-4-5

14. Are you risk adverse or risk friendly? 1-2-3-4-5
15. How much customizing would you have in a discount profile 1-2-3-4-5
16. Would you order online or trough tapping a NFC? Y / N
17. Nevertheless, NFC would mean a better discount, makes it a difference? (NFC Customer Retention)
18. What kind of suggestion do you have in this regard? (open)

**Communication enforcement**

19. Would you like to have an electronic invoice trough NFC, than a paper one? Y / N (open)
20. Would you buy a theatre Ticket from a NFC poster, rather than from kiosk? Y / N (open)
21. Would you buy some Bus, Museum, Theatre, Airplane tickets easier trough NFC? Y / N (open)
22. Would you download easier a web content and use it on the mobile device rather than on paper?
23. Would you print trough NFC from your mobile device on a shared printer? Y / N (open)
24. Would you print trough NFC from your mobile device on a shared printer, even personal critic information?
25. Would you use medical services through NFC; data exchange with hospital, medical personnel?
26. Would you share social media data through NFC from the mobile devices?
27. What kind of suggestion do you have in this regard?

**Media Content – post sales Services**

28. Would you use NFC to tap on information about a product from its packaging? Y / N (open)
29. Would you then order a similar service - product if it will be available as content trough NFC? (on line)
30. Would you use in this regard post sales services? Y / N (open)
31. Would you use the post sales service and guaranty trough NFC delivery, repair system? Y / N (open)
32. Dou you have a good or a bad opinion on the “Me-too” product?
33. Dou you have a good or a bad opinion on the “Proximiant” product?
34. What kind of suggestion do you have in this regard? Y / N (open)

The proposed questions are build up in a specific way, in order to allow some results on the profile on an average user or consumer for those services. It is not clear, and would be interesting to deviate from the questionnaire, if such a technology a “viral” set up has. The questionnaire refers to data considered relevant for the time being, so further modifications will be done in further versions. On open point is the reflection of relevant information from questionnaire, in addition or parallel with the use of different functionalities of this technology.

## 5. Conclusion

Creating actionable intelligence, based on big data but avoiding the gaps of irrelevant data streams, inserting also a personal variables and parameter to the equation, will lead to the approach of a shared service center, based on the described NFC technology. It may be spitted in core function and some external functions allocated to this shared center. The core business questions and data collected are to treat as reusable assets in the shared service center. Therefore, the assumptions is that NFC will exchange personal membership or Facebook information, and also to exchange employee information, if the NFC is used in business purpose. NFC will capitalize consumer emotion from social media; will enable different and quicker data bidirectional communication, and will lead to results in real time. All of this avoiding the gaps

of big data, and acting in regard of actionable intelligence. General marketing interview questions are not in scope of our approach, those can be derived from social platforms and social profiles of the user/consumer/customer. Also from employee data as mentioned before. (Age, gender, household size, income, profession, education, etc.); - partially derived from socialization profile; psychographic question also, in the same manner. Therefore, we have one result if the data will be prepared off line in traditional way and other result if the data will be prepared on line in the on memory approach. For the "on Line" approach, a sufficient infrastructure is needed in order to perform it correctly.

"There are approvals levels that are difficult to get past, but they actually never say "no" in the end. They just ask a lot of questions, annoy the heck out of you, and add no value to the validation process…but they've always done it like this, and made a career out of it…so live with it !" *Keith B. Carter*

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