CCAT News column: Development keys in Cloud, IoT and Big Data

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The essence of Cloud, IoT, Big Data Association

Cloud, IoT, Big Data, when discussed in the new economy, these three are often referred issues. How are they related to each other? The following is the author's experience:

We can use three sentences to illustrate the nature of Cloud, IoT, and Big Data:

1. Cloud is Service

   Cloud brings a XXX-as-a-Service that can be transformed into cloud service mode anytime, anywhere and across devices, as far as possible.

2. IoT is a kind of Purpose-built Cloud, which is concerned with what kind of IoT services are created

   All IoT applications are in fact all cloud services, but with more emphasis on "Connection through things" than "Connection through people".

3. Big Data is the sum of the data generated and stored during the Service process

   Whether it is a private or public cloud, during the service operation process, if the generated, flowing, or stored data meet the requirements of "large, fast, or complex format" and other characteristics, the service can be attributed to possess Big Data.

From the information facet, these three are also related to each other:

- Big Data is the "quantity" (traffic, membership, volume) nature of Cloud.

- The Data on a Cloud Service can be either human-generated or machine-generated, and the source of IoT Data can be humans or the environment, and sensed or collected then generated by machines.

- Big Data analysis may help Cloud

IoT services to add smart components, but if the only posses but do not use Big Data, Cloud IoT will only act as Storage function.

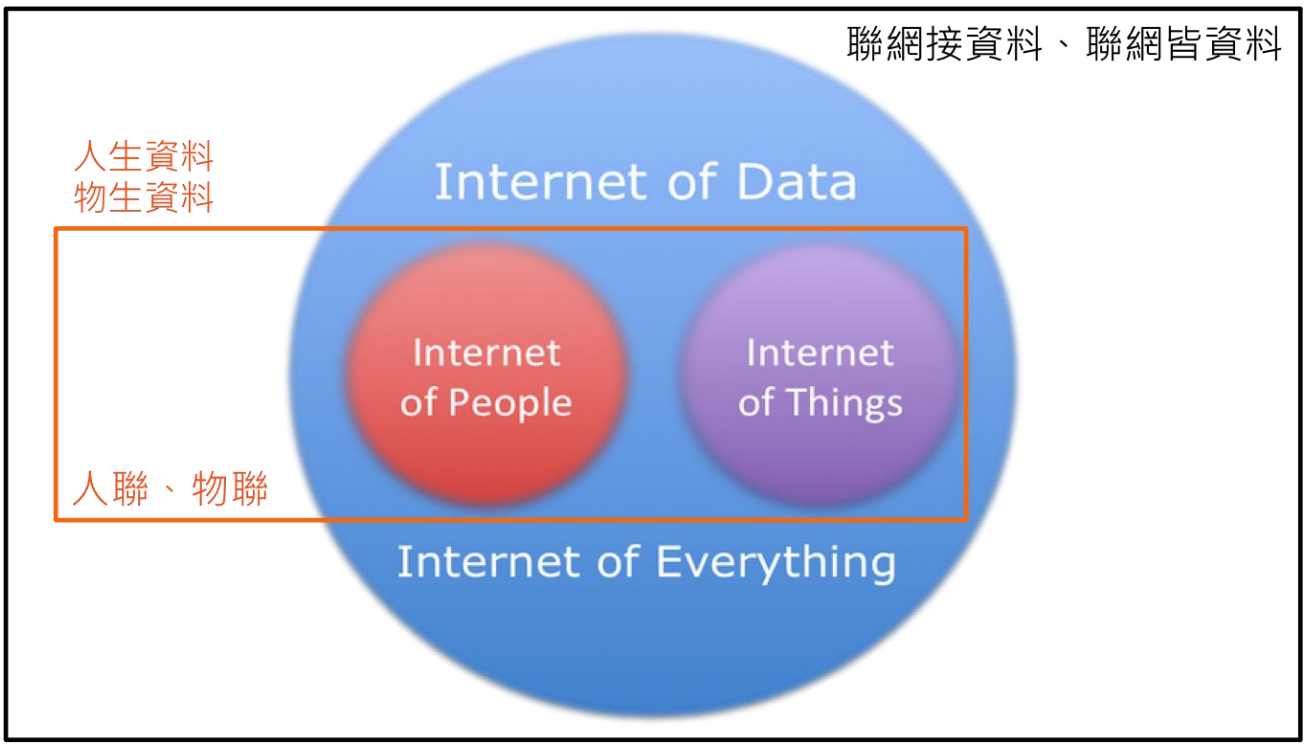

Fig. 1. Internet of Data – People & Things

From Figure 1 It can be seen that the so-called Internet is in fact not of People but of Things. Whether of People or Things, what is flowing, stored, processed on the Internet is in fact only Data. As for the other targets, they are all derived or an extension of the Data.

Cloud, IoT, Big Data enter into another stage of development: farewell to emerging technologies

Fig. 2. Hype Cycle for Emerging Technologies, 2016

Every August, Gartner publishes the highly anticipated "Hype Cycle for Emerging Technologies" to show how this market research organization views emerging technologies. If the reader has paid special attention, you can find that the terms Cloud, IoT, Big Data have already disappeared one by one during the last 2 to 3 years from the Hype Cycle for Emerging Technologies. This disappearance does not mean that these three technologies have fizzled, but that they have “graduated” from the emerging technology list and moved into a new stage of development. If we look carefully at the Hype Cycle for Emerging Technologies in 2016, is not difficult to find some of the more refined things, such as:

- Data Broker PaaS (Cloud/Big Data)
- Personal Analytics (Big Data)
- Amart Data Discovery (Big Data)
- IoT Platform (Cloud/IoT)
- Connected Home (IoT)
- Machine Learning (Big Data)

Development key for Cloud, IoT, Big Data: divide and rule

Cloud, IoT, and Big Data are all Umbrella Terms (conceptual nouns), each with a large ecosystem, and with inductive features and architecture. But if we stop the description here, it lacks of practical significance. So when we're talking about it, we need to ask, "What part of Cloud, IoT, or Big Data are we talking about?"

This "What part of XX", if replaced with "Use Case", can often focus the whole discussion immediately: in an application or user scenario, set the characters, generate interact, who does what, how to do it, what to do it with, what are the results after doing it, what does a human-machine interface look like? These should be able to be clearly refined.

Use Case makes the topic no longer just a high concept, but it takes it down to earth and possible, so it is the actual display of the Cloud, IoT, Big Data graduating from the emerging technology rather fizzing. Put into practice, Use Case may become one of the "success stories."

We can use the "Divide, Rule, It" in the "Divide and rule" dismantling a Use Case:

1. "Divide" is to define the question: What problem does this Use Case solve?

2.”It” is value proposition: Who is the user defined by this Use Case? For these users, what value is brought by implementing the Use Case?

3. "Rule" is the application program: this Use Case can use what kind of program to solve the problem, to achieve value?

Making good use of the "Divide, Rule, It" is key to the development of Big Data, Cloud and IoT. Only by establishing a consensus on what problem has to solved and what value to bring in advance, will bring meaning to designing and building an application program.