Research on Sustainable Development——Take "Ant Forest" for Example

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Abstract: With the rapid development of the Internet era, “Internet + green finance” and “Internet + public welfare” emerge, even in the form of games. Alipay "Ant Forest" game is a typical representative. From the standpoint of sustainable development, this paper analyzes the role of "Ant Forest" in advocating low-carbon behaviors and promoting effective reforestation, and draws the conclusion that it promotes ecological and regional sustainable development.

1. Introduction
With the rapid development of "Internet +" and third-party payment, more and more economic entities are longing for larger market share in Internet finance. Alipay, which is the leading third-party payment company in China, urgently needs to improve its core competitiveness. The United Nations Framework Convention on Climate Change and the Kyoto Protocol, two landmark international conventions in environmental protection, have contributed to the birth of carbon finance. The United Nations Framework Convention on Climate Change is the world's first convention to deal with the adverse impact of climate change on people's lives. The Kyoto Protocol, on the other hand, is a supplement to the framework convention which aims to stabilize greenhouse gas levels at appropriate levels and reduce the damage to the climate system caused by human activities. [1] In this context, "Ant Forest" came into being.

On August 27, 2016, Alipay launched "Ant Forest". "Ant Forest" users can reduce certain carbon emissions by walking, subway travel or using Alipay for online and offline payments and other environment-friendly behaviors. These emission reductions can be used for virtual tree planting in "Ant Forest". When the virtual trees grow up, Alipay will contact public welfare partners to provide subsidies as well as technical and personnel support to farmers and herdsmen in desert areas, and help netizens plant and maintain real trees. [2] The process of "Ant Forest" can be summarized as follows: planting users’ electronic tree -- selection of tree species online -- offline planting of real trees. (As shown in figure one)
Figure 1: Flow chart of Ant Forest operation

According to the given platform strategy, there are many ways to plant trees in “Ant Forest”. People can participate in public welfare link through a variety of ways. Green energy can be acquired 24 hours after as many as 18 types of environment-friendly behaviors take place, such as walking or taking public transportation instead of driving, asking for electronic rather than paper invoice, and so on. (see figure 2)

Figure 2: Ways to participate in "Ant Forest"

When the energy value reaches a certain level, users can choose the trees they prefer. At present, the tree species available on the platform mainly include ammodendron tree, sand tree, mongolia and populus diversifolia. The online energy required for tree planting is equal to the average amount of carbon dioxide that the tree species can absorb in their lifetime. After a user's application for planting is successfully claimed by the public welfare organization, the tree planting certificate with the
exclusive sapling number will be awarded online, and then corresponding offline public welfare will be carried out. The following table shows the specific planting strategies of the project.(As shown in table one)

| Planting area  | The energy on the line (g) | H.ammodendron tree | Sand trees mongolica | Populus diversifolia |
|---------------|---------------------------|-------------------|----------------------|---------------------|
| Alxa          | 17900                     |                   |                      |                     |
| Erdos         | 19680                     |                   |                      |                     |
| Tongliao City | 146210                    |                   |                      |                     |
| Chifeng       | 146210                    |                   |                      |                     |
| And he la     | 215680                    |                   |                      |                     |

2. The relationship between "Ant Forest" and sustainable development

Ant Forest, an online virtual tree planting project, promotes low-carbon and green lifestyle, energy saving and emission reduction, so as to promote sustainable and ecological development. Planting trees offline can help prevent wind and consolidate sand, control desertification, and promote sustainable development of the region.

2.1 Online: advocate low-carbon lifestyle

In order to make the virtual trees grow up quickly, users need to take low-carbon behaviors frequently, and log into the "Ant Forest" game interface to collect energy 24 hours later. Though an online game, it actually advocates a low-carbon and green lifestyle, and it is also a typical representative of “Internet + public welfare”. The following part will analyze how such green energy award mechanism advocates energy conservation and emission reduction.

Walking, donating, sharing bicycles, buses and parking of vehicles have reduced the frequency of using private cars, so as to reduce the emission of automobile exhaust and curb the harm of automobile exhaust to human body and the impact on the global climate. Offline payment and the use of electronic invoices can save small paper pieces, so as to reduce the use of trees and other raw materials. Online purchase of tickets, payment of living expenses, ETC payment, appointment registration can facilitate people's life. Since people can complete all those operations on mobile phones rather than going out, consumption for business trips can be reduced. Moreover, takeout orders without disposable tableware, paperless office online and biodegradable package all contributes to saving resources and, therefore, lower carbon emission. For example, the use of biodegradable express bag and no-tape carton can significantly reduce the white pollution caused by plastic tapes, thus reducing carbon emission and resource waste of express. Package recycling, second-hand recycling and other means, not only contribute to the recycle of cartons, express bags and other packaging materials, but also be conducive to the development of circular economy.

Low-carbon economic development refers to the economic development model based on improving energy efficiency, clean energy structure and pursuing green GDP. It is based on low energy consumption, low pollution and low emission. No matter, through the reduction of carbon emissions, or through the reduction of energy consumption, can be achieved economic low-carbon green development strategy.

2.2 Offline: promote effective reforestation

Alxa League is located in the western end of Inner Mongolia Autonomous Region, the hinterland of
the Asian continent in the hinterland plateau surrounded by mountains, that region has a typical temperate continental climate. Natural conditions are harsh. Drought, wind and sand, cold winter and hot summer, are obvious characteristics; the temperature difference between day and night is large. Annual temperature and annual frost-free period average respectively 5-8°C and 125-160 days. Due to the influence of the southeast monsoon, the rainfall is mainly concentrated in July, August and September. The rainfall decreases from more than 200 mm in the southeast to less than 45 mm in the northwest. The evaporation varies from 2400 mm to 4000 mm in the northwest. The average wind speed is 2.8 to 4.8 meters per second; the average annual wind days are about 70 days. 

Besides climate, hydrological conditions and terrain are also very poor. There is little rainfall and few rivers in the territory. Ejin River flowing into the Arab league is the only seasonal inland river in the league. Alxa is part of the Inner Mongolia plateau, with an average altitude of about 1,000-1,400 meters. The terrain, high in the south and low in the north, can be roughly divided into three parts: desert, gobi and desert grassland, each accounting for one third, belonging to the arid and desert areas in the middle and temperate zone. Three deserts, namely Tengger, Badain Jilin and Ulan Buhe, traverse the whole territory, and are collectively known as the Sarashan desert.

Thus, it can be seen that natural reasons such as climatic conditions, hydrological conditions and geological landforms in this region determine that a large area of desert will be formed in this region, while human activities also aggravate desertification. For example, in order to increase the yield of grain, land unsuitable for cultivation is reclaimed and used as farmland, resulting in unreasonable use of water. The originally barren soil becomes more barren and the grain yield does not increase much. Many herdsmen, in order to improve the living standard, expand the range of grazing, increase the number of animals. It will be difficult for the damaged natural lawns to restore or even unable to restore.

In this context, for the sustainable development of the region, the Alashan Region is in urgent need of desertification control, and "Ant Forest" is combination of the use of trees and grass, conversion of farmland to forest measures for desert control model. According to Alipay, by the end of May 2018, Ant Forest has as many as 350 million participants, planting 55.52 million real trees, guarding 39,000 mu of protected land, planting trees in area of more than 760,000 mu, and is expected to control more than one million mu of sand.

3. Promoting sustainable development
The 20th century is the period of the most rapid progress in the history of human material civilization, but also the period of the most serious damage to the ecological environment and natural resources. Human beings have made full use of their intelligence and wisdom, constantly changed and conquered nature, and created a brilliant human civilization. However, this reckless pursuit of economic growth forces them to face severe challenges in survival and development. With rapid population growth,
people begin to consider how big the earth's carrying capacity is. What kind of development can meet the needs of the present generation without compromising the resources of future generations to meet their needs is one of the most important concerns of current society. Below, we will analyze how this project promotes sustainable development via the case of Ant Forest.

3.1 Promote sustainable ecological development
With real ammodendron trees planted to Alashan Desert Region, Ant Forest contributes its own strength to slowing desertification. Moreover, it is an indispensable way to practice low-carbon life, such as adopting green travel, using the online payment (such as to reduce the use of paper), energy conservation and emissions reduction, reducing carbon dioxide emissions. In that case, people will gradually change the wrong attitude towards life and set up the correct view of environment-friendly lifestyle to achieve a harmonious relationship between man, protect nature and follow the law of nature in the hope of ecological sustainable development.

In "Ant Forest," the green energy bar for a real ammodendron tree is 17.9 kilograms. This specific number means that a single ammodendron tree absorbs about 17.9 kilograms of carbon dioxide in its lifetime. A large amount of carbon dioxide in the atmosphere will absorb long wave radiation on the ground, make the temperature rise and gradually cause global warming, global warming will cause serious consequences such as rising sea levels, declining food production, frequent floods and droughts. Therefore, it is imperative to curb the global warming trend. Large-scale planting of h. ammodendron can not only alleviate the desertification crisis in Alashan desert, but also restrain the acceleration of global warming from a macroscopic perspective. This is only one of the measures to alleviate global warming and thus promote ecological sustainable development.

3.2 Promote sustainable development in the region
The research direction of sustainable development systematically analyzes the overall ability of regional sustainable development into five supporting system abilities, namely the ability of regional sustainable development's survival supporting system, development supporting system, environment supporting system, society supporting system and intelligence supporting system.[5]

"Ant Forest" afforestation activities in Alashan area are mainly aimed at curbing the increasingly serious desertification in Alashan desert area and gradually improving the geographical appearance of sparse vegetation. Alashan desert area is characterized by obvious drought. The annual precipitation is between 40 and 110mm. The soil is loose and the number of windy days is large. On the other hand, unreasonable human activities have intensified the desertification phenomenon in this area. In order to gradually alleviate the desertification trend in Alashan, it is necessary to take active public welfare activities like "Ant Forest" to increase the vegetation coverage and restore the biological barrier as soon as possible. So as to ensure the sustainable development of the region.

4. Conclusion
In a word, "Ant Forest" project is an innovation of environmental protection in the Internet era. Online virtual tree planting helps facilitate low-carbon green lifestyle, energy saving and emission reduction so as to promote ecological sustainable development, while planting trees offline can help prevent wind and consolidate sand, control desertification, and promote sustainable development of the region. Both promoting ecological and regional sustainable development are important measures which will be conducive to sustainable development of mankind.

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