The feasibility study report of personal financial assistant(PFA)

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Catalog

Ⅰ. Project Background

With the development of the Internet，especially in mobile payment,social networking and computing development and perfection.And there is different from the commercial bank indirect financing,direct financing in the capital market is different from the third kings of financing model,called "Internet financial model".In this financial mode,payment is

convenient,the market information asymmetry is very low.It can reach and now direct and indirect financing as the efficiency of resource allocation.As the promoting economic growth，reduce transaction costs significantly.More importantly,It's a more democratic,rather than a few professional elite to control financial model.Now the division between labor and specialization of financial will be greatly weakened,market participants are more popular,more people will benefit.

With the development of ICT and people's income improving,mobile penetration rate also increased.Mobile penetration in developed countries and some developing countries has exceeded 100% of the average mobile phone penetration in developing countries is also more than 50%(In ps.5).In poor areas,some formal financial institutions due to the establishment of self-service outlets or equipment costs too high.What's more,with a small amount of poor financial transactions,the frequency is low,unwilling to provide basic financial services for the poor.。The birth of mobile banking,making the mobile phone to provide basic financial services to the poor as possible.Achieved without the use of Internet-based phone cards will become the future trend of consumer spending,but also on people's spending habits came into being more rational way of managing money.Based on these two concepts,our team designed software,with fast payment and financial functions,two categories.Combine two parts,there is greater commercial space.

Ⅱ. Software architecture projects
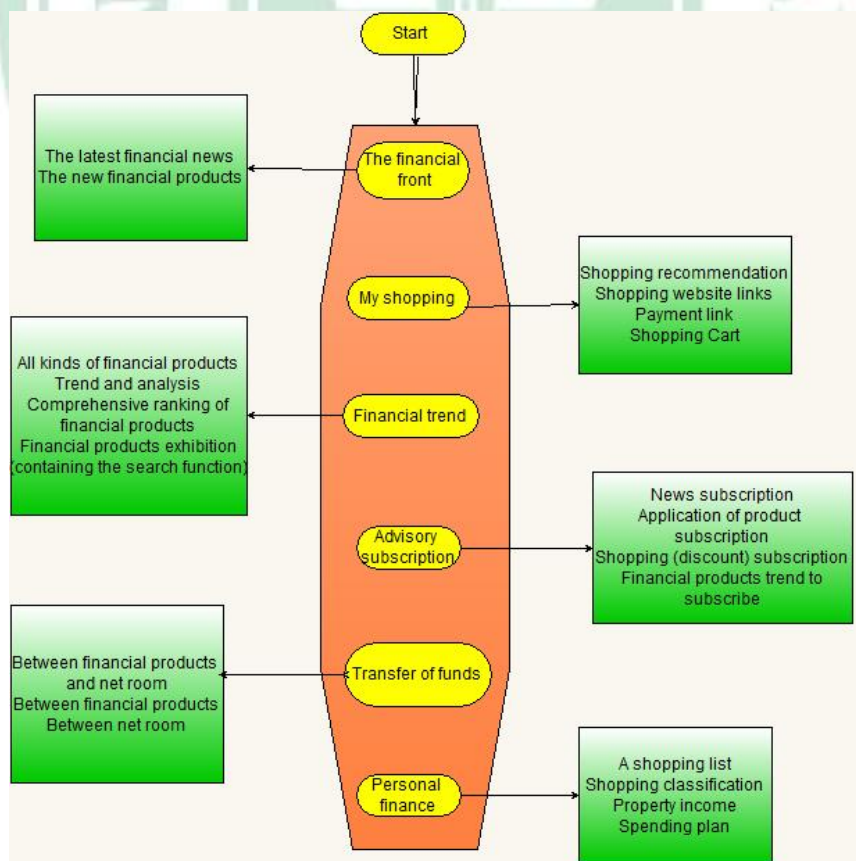
Ⅲ. Main function of the technical feasibility analysis[1]

1.Basic requirements

● Functional requirements

This system consists of five functional modules,called:Spending without cards,personal financial management(Spending plan),financial trend analysis functions,funds transfer,consulting subscribe to push.

When users submit accurate registration required software for personal information such as bank holding companies and partners for review.

● Performance requirements

Because this system will be work on the phone as an APP,system software should have a smaller occupancy rate,the hardware requirements should be low,a lot of computing and storage capabilities should for the server.For servers,in order to meet with the requirements,the system must have a high operating speed,depositors fill form input to the system,the system must be able to quickly respond promptly，Market participants are more popular,great benefits arising out of ordinary people will be more benefit.The rapid processing of the data,information ,showing all the necessary information and print out the list,the amount of information it requires high speed and large memory capacity;Due to the storge of large amounts of data and information,there must be a large enough disk capacity.

Because of funding problems related to user,one of the most important performance requirement is safety system.

● Security and confidentiality requirements

In order to ensure that the interests of users,users shall be confidential

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[1] Reference:《软件工程导论（第四版）》　　　　　　Tsinghua University press
《金融衍生品数学模型（第 2 版）》　　　Guo Yuquan,Edwin Kim Ho Wong
《无卡支付》　　　　　　　　　　　　　Wikipedia
《互联网金融模式研究》　　　　　　　　Xie Ping,Zou Chuanwei,Liu Haier

information,especially the security of user account passwords and other information.On the other side,the project involves the consumer information collection,the user consumption record confidentiality is also important.Because queries personnel identity and purpose,the system also provides different query permissions,such as between President and general business permissions.

● **Interface requirements**

Mobile phone APP connected to the computer for data synchronization,should provide for data exchange interface connected with the computer.

● **Support requirements system**

Based on Android and IOS.

● **The system language**

Based on server:such as IVR、 SMS、USSD2 and WAP;
Based on the client:such as J2ME（JAVA）、S@T and NFC.
Due to the security requirements,this system demand data analysis,a large amount of calculation and higher security,give priority to the use of the server functions.

2. The client interface · Example

Ⅳ.The main factors to determine the feasibility of

The feasibility analysis is in accordance with specification of software engineering steps.namely,review project goal and scale,the system current in use.Export high logical model of the new system,process of the redefinition of the cycle of repeated.First we should analysis he technical feasibility of system.Based on the function realization of system is proposed,analysis the possibility of realizing the function,choose the best alternative or course of action.Finally,do the feasibility analysis of economic environment,law,whether the system is worth developing and conclusion.

The main functional analysis

● **My shopping（pay without cards）**

Required information or technology	The existing solutions	Problem exist
Support of the payment	United Bank.net,pay	Unable to persuade the

account	treasure to account and other financial products association	bank and pay treasure to undertake cooperative
Technical support of the paying without cards	No-card payment APP existed: 1、 Yi-payment of Citibank's; 2、 No-card payment of China Union Pay; 3、 B2C Online payment Supported by Shenzhen Kuaihuibao Information Technology Co., Ltd Etc.	
The acquisition and storage of the store information and item information	1、 Cloud computing platform(ASE,Ali cloud)for data storage.; 2、 Businesses registered users,the businesses upload their own commodity information;	
Collection of the charge object	Combine the consumer and the payee,use the two-dimensional code swipe or use positioning technology,search other people nearby to pay.	The accuracy of GPS;To prevent malicious two-dimensional code's fraud
Safety protecting measures	1、 We have many encryption algorithm security; 2、 The payment password,random verification; 3、 Bank use SSL128Enctyption algorithm and SET(Secure electronic transaction)Agreement 4、 Transmission data on the Internet has its confidentiality,authenticity,integrity and non repudiation.	Further innovation on the basis which is existed,there is greater technical difficulty.
Access to consumer	1、 Because of the small	

information	data volume,we can use mobile terminal database storage. 2、Use the storage services of the cloud platform on the Internet.	
Innovation:The independent payment system(To reduce toe queue time)	1、Combined with GPS to select shop for payment; 2、Combine the software and hardware,degaussing the goods when the merchandise is paid.	Up to now,technical means existed is single and no successful cases,it's difficult to develop,but the Innovation highlights of this APP.

Analysis of function

1、New function,related cases have achieved sufficient and technical reference is enough,and strong possibility.

2、Innovation function:The independent payment system is quite difficult,still need a long time to develop and test.And also need business's fully support can be extended.The main technical innovation is the most difficult to implementation of the overall,this may delay the overall progress of the project.

● Personal finance(spending plan)

Required information or technology	Existing solutions	Straitened circumstances
Access to consumer information	1.By the function of 'MyShopping', we record the spending information that reliable and useful; 2.Self-uploaded by user;	We must receive the users' recognition then pick up the information.
Production of spending plan	1.According to the collected consumer information,find the best combination of the account of spending plan; 2.User proposes consumer plan,our software will compare with the spending	1.Thanks to the rapid change of spending plan,we may have dificulties in providing stable algorithm. 2.Early this function could be useless,the reason for

	plan of the past and advise on informing of overspend.	this is the paucity of data over the spending plan.
Shopping classification	1.Classify the product name in database by match probability. 2.Users classify by themselves	1.Various goods lead to low matching probability and big error; 2.The trouble brings to user will diminish the customer experience and reduce the user group.
Confidential consumer information	1.User sets the query password. 2.Encrypt the information from serve port.	

Analysis of function

1.It's easy to implement the information gathering technology.We should pay attention to the use of encryption technique,meanwhile,we should also protect users' privacy to avoid privacy violations.

2.The technique problems in practice:(1)Developing an effective algorithm to help us analyse consumer purchasing habit;(2)Developing a arithmetic and rationale algorithm which has practical significance in producing spending plan.

3.Summary:this function is innovative and easy to realize,so it is practical.

● Analysis of financial function trend

Required information or technology	Existing solutions	Straitened circumstances
Access to financial product information	Using web bugs to capture the data of various financial product official website In certain time.	To solve the identification and acquisition of the validity of the data.
Analysis of financial tred	1.Using various types of mathematical model to analyse. 2.Mining the collected historical data and existing data then analyses the result and pick up the maximum probability	; 1.How to pick up the appropriate mathematical model. 2.It is difficult to pick up the appropriate data thanks to big error of analysis.

	results.	

Analysis of function

1.The technical difficulty:The difficulty lies in the basis function algorithm for analysis of a large number of financial products is lack of data,and many of the **financial** and stock analysis software and case can be referred to.

2.Summary:this function has a little innovation and easy to realize.

● **Funds transfer**

Required information or technology	Existing solutions	Straitened circumstances
Correlation between accounts	Combining banks and businesses to support application.	undetermined
The security of transfer	1.Function authenticates name system ,banks and merchants to authenticate the user. 2.Banks and businesses to provide transfer interface,the application provides fast connections and transfers,and security information is not designed to interact.	undetermined

Analysis of function

1.The technique problems in practice:How many banks and businesses to conduct joint cooperation ,and the development of trade secret technology.

2.Summary:Lower technical difficulty,the larger the feasibility.

● **Financial frontier functions and consulting subscription(Latest financial products push)**

Required information or technology	Existing solutions	Straitened circumstances
Push the latest financial	By hand on the official	undetermined

products information	website of the major information collection or to cooperate with the bank,the bank updates.	
Push the selected information	1.Using APP push information; 2.Pushing the obtained data of financial chart function analysis; 3.Combined with user consumption trends and analyse financial products to propose push.	undetermined

Analysis of function

1. The technique problems in practice:This function is an additional product trend analysis of financial products,has no technical difficulty to achieve.

2. 2.Summary:Lower technical difficulty,the larger the feasibility.

Technical analysis summary

The feasibility analysis is based on standardized software engineering steps, namely by reviewing the scale of the project objectives and research system is currently being used to export high-level logical model of the new system, the process of redefining the problem that repeated cycles. System implementation requires a long development cycle, you should use spiral development model, first developed and put to use some features, such as: non-card payments, financial trend analysis capabilities.After collecting a amount of information,the kind of personalized financial function that based on user consumption data capabilities can be into use.

In terms of strict data protection measures, to ensure foolproof system data, system architecture design in strict compliance with safety regulations of the financial system, the use of radio frequency cards, terminals, computer "trinity" of data protection technology, three levels taken from six data protection of important data on the system tight protection, advanced "black box" data collection function is repeated to ensure the safety and accuracy of system data.

In general, the development of computer hardware system has been very popular, so there is no problem; present various aspects of computer technology is very mature, relatively speaking, the development of this system also requires relatively simple technology, so the technology is feasible .

Ⅴ. Social Background Analysis

Legal feasibility analysis

Purchashing only genuine products;Machine settings available through the proper channels; All use of legitimate software, technical information presented by the party custodian, data can be guaranteed legal sources.

In terms of user information collected, with full respect for user privacy, before collecting user information users need to confirm permission before proceeding, so there is no question of invasion of privacy

So, it is feasible in legal terms.

Feasibility Analysis of business and social environment

from a **business** point of view, Internet banking (mainly type of business phones financial) services to cover the main "White Paper on China's Internet payment security" shows that in 2013 the mobile payment market is expected to more than 800 billion yuan, the scale reached 2012 5 times or more. Major banks, operators, handset developers to pay the excellent cooperation in the background, have launched a new business "mobile wallet" on the move before the car hit a smash hit Didi software is one of the typical representatives. But the Internet is not confined to the financial sector and the payments industry, the business gradually deposit and withdrawal from the payment, recharge, wages, integrated business loans transition. But in fact, this mobile phone terminals, technically can do almost all financial services. Therefore, Internet banking (mainly mobile phone banking) there is great potential for development.

According to the background analysis, we developed a "personal financial assistant" development strategy, that is, to the development of Internet banking services are most concerned about - payment services; while highlighting the dominant position in the civilian sectors of Internet financial model, and implement grassroots awareness services, training civilians financial model; Finally, comprehensive recording of user data to improve the utility of the data, the data is used to improve services, develop spending habits. By civilians exclusive custom business combination attack, the development of financial depth behavioral data to conform to the trend of Internet banking, training habits of users and improve user viscosity.

Through the above analysis, that this project has great potential in business and a better social environment ,is feasible.

Ⅵ. Concluding comments

Personal Finance assistant project is feasible, but requires a larger user base and a longer development cycle and therefore must take effective measures to ensure the funding and staffing,and need for development in phases.

For earlier into people's lives and get the trust of users, it is recommended to proceed as soon as possible the development and use of the project, in order to occupy a larger market share and pave the way for a successful follow-up function.