

Online Voucher Sales System for the National Aptitude Test 2013

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Abstract

This case presents the real-life situation of a convener who has initiated the task of implementing an online voucher sales system to collect the fees from candidates for a National Aptitude Test. The IT application was to be developed by an external vendor, but a few days before the application's launch, the vendor's point of contact informed the convener that development had been delayed. This placed the convener in a difficult situation because he had already announced the launch through the national media. The options available to him were rather few. He was faced with the dilemma of whether to announce the non-availability of online voucher system to the public and face the media trial or to explore the option of pushing the external vendor further to meet the deadline. The second option required him to coordinate with the senior management of the vendor company. In any case, the timelines were tight, and he had to make the decision promptly. It would be a difficult situation for the convener, in case the application failed.

Keywords

Project management, information technologies, decision analysis, IT project implementation

Hamid, what is this? What are you saying? That we won't have the online voucher sales system in place by the fifth (August 2013)? Do you understand what it means? Don't you know the implications? I don't know what's gone wrong. Get me your boss immediately. I want to know where the bottlenecks are. You and your boss need to have a lot of explanations ready. This is soon going to be on the media and I don't have a clue about how to explain this failure from our side.—Rahul Kumar¹

Rahul Kumar, a member of the faculty at Novel Institute of Management (NIM) of India, was shouldering additional responsibility by working as the convener of the National Aptitude Test 2013. He was furious. The online voucher sales facility that had been announced through the Indian media, a month ago, was not projected to complete on its due date as promised by the vendor and the project manager. Hamid Khan had few answers to satisfy him (see Exhibit 1 for the profile of Rahul Kumar).

The organization's name and other information have been disguised for purposes of confidentiality.

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Hamid Khan, a consultant, working with ABC Systems Private Limited, was the project manager for the INR² 360 million value online voucher sales project that NIM had envisaged for the National Aptitude Test of 2013. This was the first major full life-cycle implementation project for him. Khan was facing problems in figuring out the reasons for the delay in the project. He was aware that there had been a few glitches early in the project. However, he had not been comfortable reporting them to the client, despite Rahul Kumar's continuous follow-ups with him (see Exhibit 2 for a profile of Hamid Khan).

Khan was bright, had a great deal of technical development expertise, and understood the functionality of the online voucher sales system. He had been looking forward to making this project a success, and he expected to get a bonus upon the project's completion. His client, Professor Rahul Kumar, was demanding answers and Khan had to figure out the reasons for this crisis.

Novel Institute of Management

The Novel Institute of Management (NIM) is part of a consortium of six management institutes set up by the Indian government that are ranked as the top management institutes in the country. NIM offers full-time post-graduate programmes (PGP) in management that are equivalent to an MBA. In the past five years, it has expanded in terms of student intake, faculty recruitment, infrastructure development, course offerings, etc. (refer to Exhibit 3).

National Aptitude Test

Every year, the consortium administered a National Aptitude Test (NAT) and in the year 2013, NIM was the convening institute for the test. Approximately 2.5 lac candidates appeared for the NAT every year. Over the past fifty years, NAT emerged as a benchmark test for admission to prestigious business schools in the country and NAT scores were accepted in about 1000 management institutes/business schools across India for their MBA programmes.

NAT was introduced in the early 1960s and was administered as a Paper-based Test (PBT) until 2008. In 2009, NAT was administered as a Computer-based Test (CBT) that was made available online. For this, the six management institutes signed a contract with an agency, Fortuner Technology Limited (FTL), to administer NAT online. The FTL was selected through a tender process in accordance with the policies of the government of India, and the contract was signed for a period of five years (2009 to 2013).³

In the online mode, candidates sat in front of a computer terminal on a designated date and time slot for 120 minutes and answered questions that would appear on their computer screen. The test assessed a candidate's proficiency in quantitative as well as verbal aptitude. The syllabus for the test was according to the matriculation level, that is, grade ten or equivalent examination. Candidates considered the test to be tough and rigorous.

After the test, a candidate was provided with a scaled score and his/her percentile rank was based on the number of correct or incorrect answers. A complex conversion method was used to convert the raw scores to scaled scores. Based on the scaled scores and a further normalization process, the percentile rank of a candidate was calculated. It usually took a fortnight to evaluate candidate scores and percentile ranks, after which they were made available to institutes/business schools and candidates.

In 2012, NAT was administered over twenty days, starting from the second week of October.

In the year 2012, a problem arose when eighty candidates tampered with their scores on the NAT website.⁴ This attracted a lot of media attention as well as criticism about the administration of NAT. The government set up a committee to identify the lapses. The enquiry report found that an outside vendor had been entrusted with the job of maintaining the website of the voucher system portal for the past three years. It was alleged that the lapses had probably occurred at the vendor's end.

ABC Systems Private Limited

ABC Systems Private Limited (ABC) is an IT services solution provider and consulting firm which was established in 1968. It was considered to be one of the best solution providers in this field. ABC was part of a diversified multi-billion conglomerate, Big Sons, but it was incorporated as a separate company on 19 January 1995. For the financial year 2012–2013, its revenues were close to US\$ 11.66 billion. ABC's mission was 'to help customers achieve their business objectives by providing innovative, best-in-class consulting, IT solutions and services'.

ABC had 276,000 employees spread across forty-four countries. An employee designated as a consultant in the company possesses, on average, five years work experience in IT consulting, business process analysis and project management. ABC hired people who had a bachelor's degree in technology/engineering from the top engineering institutes and colleges of India through a rigorous selection process. In 2013, ABC hired around 5000 such employees.

ABC approached NIM to demonstrate its IT solution strengths and prove its services as a vendor. The initial contract of five years with FTL was coming to an end in 2013. Seizing this opportunity, other companies were approaching NIM to bid for the voucher system, which was estimated to be a multi-million dollar business deal.

The first meeting between ABC and NIM was held at the NIM premises and senior officials from both, ABC and NIM, were present. After discussions, it was decided that ABC would make an IT-application for the sales of the online voucher, given ABC's strong credentials. The ABC team also demonstrated another similar IT application, which they developed for a business client in the past. The NAT convener shared the online voucher sales requirements and the timelines with the ABC team. In principle, it was agreed that ABC would be able to deliver the complete solution within a few days. Hamid Khan was appointed as the single point of contact between application development team at ABC and the client, NIM.

Rahul Kumar was fairly certain that the task would succeed. He was confident about the capabilities of ABC, which had a solid reputation in the domain of IT services and solutions.

The Voucher Sales System

Rahul Kumar knew about the volume of work involved in making the online voucher sales system go live. He had accurately assessed the complexity in this deceptively simple task based on his experience, but he also believed that the new system would enhance the overall efficiency of the voucher system.

He thought that the new system would be more convenient for candidates taking NAT. Under the current system, a candidate who wanted to apply for NAT had to register through an online registration system called Abacus[®].⁵ To do this, the candidate had to log into the Abacus system using a unique number and then enter mandatory details such as date of birth, gender, social category, citizenship,

educational qualifications and examination scores. The final step of the registration process was to enter the preferred test location and preferred test date and time. If the preferred location, date and time were not available, the system automatically provided alternatives. It took an average of twenty minutes for a candidate to complete this registration process, which was similar to the web check-in facility provided by airlines.

The unique numbers were available in the form of vouchers similar to scratch cards (refer to Exhibit 4 for a sample voucher). The scratch cards were sold⁶ through the counters of a designated bank during a fifty-day registration window starting in the first week of August every year. The designated bank was a private sector bank with 2000 branches across the country. However, scratch cards were made available at only 10 per cent of the bank branches. The bank branches were open from 9:30 am to 3:30 pm, five days in a week.

A candidate or his/her nominee had to visit the bank in person in order to buy a scratch card. Sometimes, a candidate with a full-time job had to take a leave for a day or two in order to get this work done. It was found that candidates preferred to buy the scratch cards as early as possible so that they could get their preferred location, date and time slots. This wide window of fifty days for buying scratch cards was justified, given the short working hours of bank branches and a large number of candidates interested in taking the NAT. The bank that offered this service was paid INR 15 from the NAT account for each physical voucher that it sold. This was the process of collecting the fees for the last four years.

The responsibility for printing scratch cards was given to FTL based on the terms of the tender and a Memorandum of Agreement (MoA). The distribution of scratch cards to various branches of the bank was done through a third-party courier service provider, the cost of which was borne by FTL. The distribution team of FTL regularly took stock of the scratch cards at the bank branches and kept replenishing them.

Rahul Kumar remembered asking the distribution team of FTL whether they had faced any instances of stock-outs at bank branches. FTL company officials replied confidently, 'Sir, we have learned a lot in the past four years. We know our business exactly. You will not get any complaint this time.'

However, for the past four years, media reports had highlighted the long queues in front of banks. Sometimes, local police were called in to restore law and order. People resorted to breaking glass and furniture in the banks because of the long wait.⁷ 'Shall I take this as proof of the craze for NAT?' Kumar sighed.

Kumar also received many anonymous emails which reported instances of malpractice such as people engaging in black-marketing of the physical vouchers.

Proposed Online Voucher Sales System

The registration process and voucher sales through bank branches were scheduled to begin on 5 August 2013 at 9:30 am, which was exactly twenty-four days away.⁸ Kumar quickly realized that each day mattered in completing the project, which included only the online voucher sales system to collect the registration fee. He had to learn every minute detail from scratch and pass it on to the ABC project manager if the online voucher system was to be rolled out on schedule.

The proposed system, like any other system, had stages with specific information associated with each stage that Kumar had to write out correctly and communicate without any ambiguity to the ABC project manager.

1. Bank Account: NIM had opened a savings bank account for NAT 2013 with Synergy Bank (a prestigious private sector bank), a few months ago. Synergy Bank was known for its conservative approach towards risk management and had won several awards based on customer surveys.
The idea of opening a separate account was to keep the NAT 2013 fund transactions distinct and easily manageable from the institute's regular fund transactions. NIM, being a public institution, was subjected to a government audit.
2. Application Development by ABC: ABC was given the task of application development for the online sale of e-vouchers. Based on his experience with the Indian Railway e-ticketing system, Kumar listed the basic information that the candidate had to fill in before purchasing an online e-voucher. It was decided that six fields would be mandatory. If any of these fields were not filled, the candidate would not be allowed to purchase an e-voucher. The six mandatory fields were:
 - a. Name of the Candidate
 - b. Date of Birth
 - c. Category Choice (Reserved or Unreserved)
 - d. Address
 - e. Mobile Number (10 digits)
 - f. Valid Email ID

The application would use the last two fields to send a unique number to the candidate after payment was made either through credit/debit card or net banking. Kumar contacted Hamid Khan, the ABC project manager, to explain the requirements in greater detail on 14 July 2013.

It appeared, on the face of it, that the application would take the candidate's data (in the form of six information fields as described above) and would navigate the candidate finally to the payment page. On this page, the candidate was required to fill details of the banking channel preferred in the form of credit/debit card or net banking so as to complete the transaction. After the payment was successful (a credit, that is, money remittance hitting the NAT 2013 account), the candidate would receive the e-voucher number via the provided mobile number and email address. The system architecture of the proposed online system is described in Exhibit 5.

A comparison of the old paper-based voucher system and proposed online system is provided in Exhibit 6.

Internally, Kumar was informed by Khan that a computer program would be written to integrate the payment gateway of Synergy Bank with ABC's application. The system architecture would involve the server of the Synergy Bank gateway and ABC's server talking to each other in a protocol language to ensure successful payment.

Khan informed Kumar that this was no big deal for ABC; it would be developed and ready to go live on the testing platform by 25 July 2013. Kumar was upbeat and confident that this would be a great relief to the student community at large, which would not be required to travel and stand in queue for hours to purchase a voucher from the branch.

Chronology of Events

Subsequently, a series of meetings was held. The sequence of the meetings is provided in Table 1.

Kumar took a deep breath and sighed, 'Only a miracle can save this project. What was the need for getting into all this hard work, countless discussions, rounds of meetings, so on and so forth?

Table 1. Chronology of Meetings

Date	Meeting Description
14 July 2013	A meeting between the NIM's Director and the officials from five other government MBA institutes was held in Mumbai. During the meeting, ABC (the partner for NAT test delivery and execution) informed them that it was ready with the beta version of the application for online e-voucher sales.
15 July 2013	A meeting was held at NIM between the Convener of NAT 2013 (Kumar), the ABC team (led by Khan) and the team of Synergy Bank. ABC shared their requirements for the payment gateway at Synergy Bank. Synergy Bank agreed to provide ABC with the information in the shortest possible time. ⁹
18 July 2013	A meeting between FTL and NAT Convener was held at NIM. ABC was asked to provide NIM with the list of e-voucher numbers to make online sales of e-vouchers possible. A meeting was held on the same day between the Convener of NAT 2013 and the Synergy Bank team to sign an MoU (Merchant Agreement Form for Online Payment Gateway facility).
19 July 2013	It was decided to delay the release of the NAT 2013 advertisement by one week (from 21 July 2013 to 28 July 2013), which would give ABC more time for application development. It was also decided to extend the NAT 2013 registration process by one week, from 28 July 2013 to 5 August 2013. This information was shared with ABC. Khan agreed to make the application go live by 25 July 2013. Synergy Bank provided ABC with a kit to test the application URL within a record time of three days.
20 July 2013	Synergy Bank released a Transaction Identification Number to the ABC team, which appreciated and acknowledged the speed at which the task was done.
25 July 2013, 9:00 pm	Khan informed Kumar that there would be a delay in deploying the online e-voucher sales application.

Source: Authors' Notes.

Thank God I have already signed the Memorandum of Agreement (MoA) with last year's partner bank for physical voucher sales.⁷

Further Developments

Kumar decided to meet the director of NIM to update him about the recent development of delay in application development by ABC. On his way to the director's office, Kumar's mind was occupied with questions about the project. Many questions raced through his mind: What would the future of the project be? Would there be a change in the schedule for registration? Would the project be considered worthy of the money and time invested?

The director and Kumar held a long discussion on various aspects of the project's progress and further possibilities of its expedition. It was decided to meet ABC's consultant on an urgent basis. Kumar thought it would be better to discuss the situation with Khan and then take the final call. He flew to Mumbai to meet Khan that night. In the breakfast meeting with Khan, Rahul Kumar informally asked about the processes that were followed for this project. Khan explained:

For any project that we get in ABC, we follow a three-step process for the software development cycle. First, we collect the requirements from the client by sitting with him. Then we do the requirement analysis with a functional consultant...in this situation, it was me. I passed the information via email to our technical team well before time for their concurrence and readiness. The technical team is located in our command center at Mumbai. They sent back a standard document that I filled without delay. Finally, I had to complete the requirement freezing with your sign-off. In this case, since you told us that we should concentrate on the project, I thought that the sign-off on the requirement freezing was merely a formality. I have done a lot of hard work in coordinating this.

He then said:

One assumes that it is a simple job to create a payment gateway and online application. In fact, in many places like universities, government, and private institutions, we have already deployed similar online payment systems successfully. However, to tell the truth, there were a certain set of complexities involved due to your specific requirements in this project like what fees are to be collected from which of the two categories. Again, the data capture was also different. It was a transaction-based model, and a lot of testing was required. You will appreciate that money is involved so the impact will be huge; if anything goes wrong, we will be blamed...we can't rely on the past. We had to do everything from scratch. To make a similar application, we put aside ninety days. In this case, probably, we were fighting the losing battle.

It became clear to Kumar that Khan on his part had done whatever he could. When probed about the application that was demonstrated and showcased in their first meeting on 11 July 2013, Khan explained:

The application was shown to give you the look and feel of the web page and the possible flows. It was just to make you aware that we can make the application for you. It was not the so-called beta version. We never told you that. In fact, after getting the go-ahead from your side, I immediately got in touch with the technical team. Normally, it takes our technical team ten days to make a beta version as it involves designing and developing diagrams in UML code, besides arranging the teams, resource mobilization, allocation of work, etc. However, it was done in a record three days for this project. After that Quality Analysis (QA) is taken into consideration, where we have a dedicated team that tests the developed application on a set of processes. To give you the specifics, there is a specific sub-group of people called the infrastructure team that checks whether the server can take the load¹⁰ when the application goes live. Moreover, this application should be available 24/7 for users. For this, we need to strengthen our hardware and data center configurations. Without QA's stringent processes, no application can go live. I can assure you that we have not been driven by commercial feasibility at any stage in terms of resource deployment.

Kumar shared his difficulties with Khan. He wanted to know the exact status of the project then so that he could quickly make a decision. Khan summarized the discussion in chronological order about what ABC had done so far (Table 2).

Table 2. Chain of Events from ABC's Perspective

Date	Description
11 July 2013	Initial discussion.
14 July 2013	Requirement communication from Rahul Kumar to ABC and from ABC to Synergy Bank.
15–17 July 2013	Payment gateway: short-listing of vendor by ABC and Synergy Bank.
18 July 2013	Confirmation that ABC would make the programme go live by 28 July 2013.
20 July 2013	Payment gateway interface provided by Synergy Bank to ABC.
24 July 2013	ABC delivered the beta version of the application to Rahul Kumar of NIM.
25 July 2013	Testing results showed that internet banking was not accepting the communication between the Synergy Bank payment gateway and the ABC server. Other modes like credit card/debit card might be working.

Source: Authors' Notes.

Kumar decided to spend the entire day of 26 July 2013 with Khan to see how things evolved and to participate in the discussion between the technical teams of Synergy Bank and ABC. The same afternoon, an emergency meeting was held between the technical teams of ABC and Synergy Bank. Kumar asked the technical team of Synergy Bank about the failure of the payment gateway interface they had provided. Senior official from Synergy Bank explained in the following words:

We were using the same payment gateway successfully in many online applications developed by other software design companies; we don't know why the ABC server is not able to integrate with our payment gateway. We have two payment gateways as of now. The most commonly used one was provided to the ABC technical team in a record time of three days. You already know Hamid has sent us an acknowledgement in this regard (refer to Exhibit 8). In fact, this payment gateway is managed by our partner, PayU. PayU has designed and now maintains the necessary system readiness of this payment gateway. If you wish, we can provide you immediately with our internal payment gateway. It is directly connected with V-SAT links, but it is our internal gateway.

Kumar was deliberating over every new name in the chain of the workflow. He asked himself, 'Now, from where has this PayU emerged? It never came up in any discussion.' He asked the technical team about the role of PayU in the whole scheme. It was explained to him that PayU was an integrator of money transactions. It acted as an aggregator when financial transactions were done from several banks. It collated and sent the final amount to the designated bank account, which in this case was the NAT account at Synergy Bank. Candidates were given the option to choose credit cards of different banks. Hence, several banks needed to be mapped to the NAT account.

The technical team at ABC explained their side in terms of countering the argument of Synergy Bank:

Synergy Bank at any point of time hasn't told us about the involvement of PayU. We are just hearing it for the first time that a third party vendor is involved in the payment gateway. All our efforts have been wasted. We are now being blamed for the delay when in fact the Synergy Bank people have kept us in the dark.

Kumar intervened immediately to defuse the tension between the parties involved and asked Synergy Bank to provide details of their internal payment gateway. Kumar wondered that new problems would emerge in the following week.

Exhibit 1. Brief Profile of Rahul Kumar

Rahul Kumar obtained an engineering undergraduate degree in manufacturing from an eminent engineering institution followed by a master's degree in engineering with a specialization in Computer Aided Design (CAD) and Manufacturing. Later, he pursued a PhD in management from one of the top Financial Times (FT) ranked business schools in India. He worked for one year with a stock broking firm automating the manual processes and improving the efficiency before joining academia in the area of Operations Management and Quantitative Techniques.

Exhibit 2. Brief Profile of Hamid Khan

Hamid Khan completed his undergraduate engineering programme in computer science in 2002 from the Central Institute of Engineering in India. During his final year, ABC offered him a job as a trainee engineer. He was soon promoted to a software developer and eventually to his current role as a functional consultant. He managed several important projects on this scale. He coordinated the software development for an online examination to recruit clerks for one of India's largest public sector banks for which there were 37 lac candidates. He was also part of a project to conduct online examinations for the recruitment of village-level administrative officials in one of the largest states in central India; in 2011, this project was awarded the Skoch Digital Inclusion Award for e-governance.

Exhibit 3. About NIM¹¹

Established in 1996, the Novel Institute of Management (NIM) was part of the group of nationally important management institutes. The institute was set up in central India to give an impetus to management education and has been a pioneer in the field of management, interfacing with industry, government sectors and public sector units. The institute started with forty-five students in its flagship management programme in 1996, which increased ten-fold to 450 by the year 2010. The institute also started offering various programmes for different groups. In 2013, the institute had more than 1000 full-time students on campus during any day of the academic calendar. In the past five years, the institute has set up massive infrastructure consisting of hostels, classrooms, residential houses and a sports complex. NIM's achievements in such a short time can be attributed to its innovative spirit, its will to excel and to a great extent the relationship it has developed with the outside community.

Exhibit 4. Sample of the Physical Voucher

2013 Registration Voucher
for SC/ST and Persons with Disability (PWD) Candidates only

Serial No.:

Voucher No.:

Name of Candidate :

This voucher is worth Rs. 800/- and is valid for the purpose of registering for 2013 by SC/ST and PWD candidates. It is not valid outside the registration window.

Voucher once sold cannot be refunded under any circumstance including but not limited to loss of voucher, inability to read voucher number due to mishandling of the voucher by candidate, candidate being ineligible for taking not being a pre-requisite for a programme, and rejection of candidate registration due to incomplete and/or incorrect information.

Prior to registration, candidates must understand and prepare for the following:

1. A candidate must maintain a valid email account & phone number throughout the selection process.
2. Keep marksheet of X, XII, academic and any other professional qualification handy for calculating percentage marks that are mandatory in registration.
3. The basis of computing percentages obtained by the candidate would be based on the practice followed by the board/university/institution from where the candidate has graduated.
4. If academic institutions offer grade point averages (GPA), they need to be converted into percentage score as per the conversion scheme of that institution.
5. If an institution does not have a conversion scheme for GPA, the equivalence has to be calculated by dividing obtained Cumulative GPA (CGPA) by the maximum possible CGPA and multiplying by 100.
6. SC/ST and PWD candidates must send a copy of their valid caste/disability certificate to Centre immediately upon completion of online registration for verification purpose. Write your voucher no. & registration no. on the certificate. The address is Centre 2013, C/O Admission Office,

Important Dates

Registration Window:
Mon, 29 July 2013 -
Thur, 26 Sep 2013

Test Dates (20 days)
Wed, 16 Oct 2013 -
Mon, 11 Nov 2013

Score Cards
Available from 14 Jan 2014 at
Candidates must retain a print-out of the score card for future reference.

Candidate Care Services
1-800-419-0080

Registering for 2013

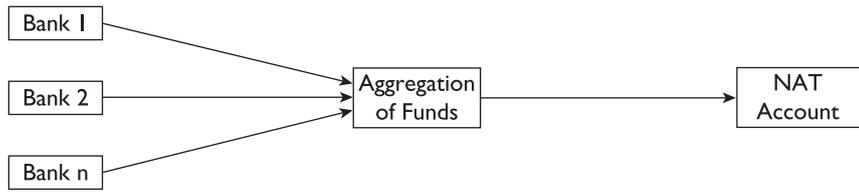
Having understood and prepared for the above, candidates must register for 2013 by visiting www.catiim.in within the registration window. Candidate has to enter the **Voucher No.** (found under the scratch area) provided at the top of this voucher. Please use a coin to scratch out the **Voucher No.** Scratch the voucher gently to avoid any damage to the voucher. Detailed instructions for registration are provided on . Upon successful registration, an Admit Card will be sent to the candidate by email. The Admit Card will contain information such as name, address, Registration Number, test date, test venue details, and instructions for candidates.

Disclaimer: Instances of provision of incorrect information detected at any stage of the selection process will automatically disqualify the candidate from the selection process and he/she will not be allowed to appear for in future. If such instances go undetected during the current selection process but are detected in subsequent years, such disqualification will take place with retrospective effect.

For ready reference you must retain this voucher with you during the entire selection process. Any dispute concerning would be subject to Jurisdiction of the Competent Courts within the territorial jurisdiction of City of Incore only.

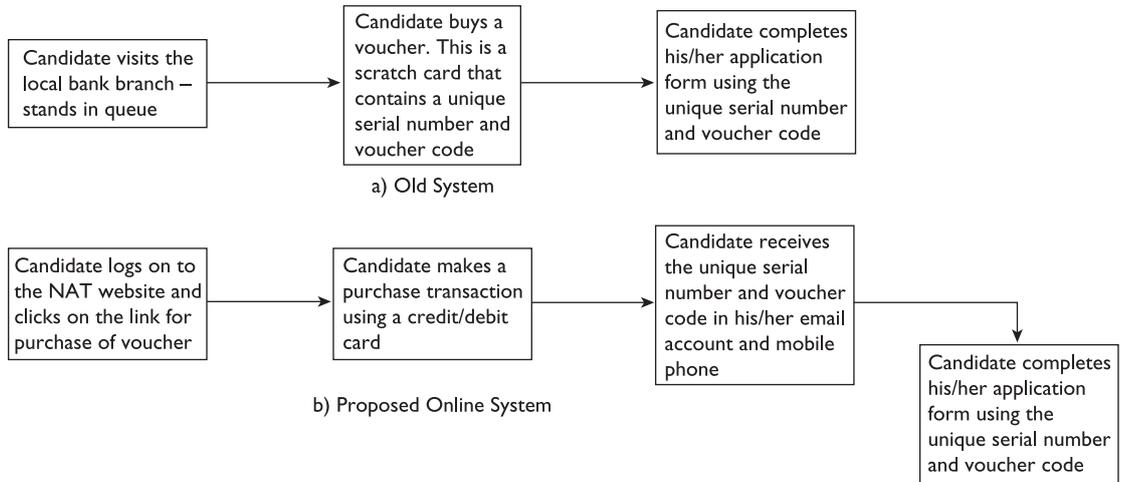
Source: Authors' Notes.

Exhibit 5. Architecture of the Proposed Online System



Source: Authors' Notes.

Exhibit 6. Comparison between Old Paper-based Voucher System and New Online System



Source: Authors' Notes.

Exhibit 7. Email Excerpts from Khan Praising the Timely Efforts of Synergy Bank

To: Avinash Garg			
From: Hamid Khan			
Subject: Re: NIM Nat 2013 (Tid released)			
Thanks Avinash.	_____		
It's really a great work done by you and your team.			
Regards			
Hamid Khan			
ABC Pvt Ltd			
Mumbai - 400083, Maharashtra			
India			
Cell:- XXXXXX			
Mailto: YYYYYY			
Website: ZZZZZZ			
Experience certainty. IT Services			
Business Solutions			
Consulting			
From:	_____		
To:	_____		
Cc:	_____		
Date:	07/20/2013 10:47 AM		
Subject:	NIM Nat 2013 (Tid released)		
Dear Sir,			
Tid has been released, we have completed our process waiting for green signal from ABC side.			
MECODE	TID	LEGAL NAME	DBA NAME
110343	70006456	NIM NAT 2013	NIMNAT 2013

Source: Authors' Notes.

Notes

1. Conversation dated 5 July 2013.
2. INR = Indian currency.
3. Source: Authors' notes.
4. Source: Authors' notes
5. Registered trademark of FTL for its proprietary software.
6. There were two categories of scratch cards. One was available for INR 1600 for Unreserved Category Candidates and the other was for INR 800 for Reserved Category Candidates.
7. Source: Authors' notes.
8. The actual number of days for application development was only seventeen. An advertisement in national newspapers was to appear on 28 July 2013. This was based on the policy of releasing the advertisement one week earlier.
9. ABC asked for information on six components: Merchant ID (NAT 2013 Account ID), Secret Key, Access ID, Payment Client URL, Redirect URL and Test Card Details for Testing. These six information fields were needed to integrate the ABC application with the Synergy Bank Payment Gateway. It required a lot of paperwork and usually took Synergy Bank an average of 21 days to provide this information. During the meeting, Kumar impressed on Synergy Bank that it should be made available in record time, and in fact, it was made available in three days. Khan acknowledged and praised the efforts of the Synergy Bank team via email (Exhibit 7).
10. When the application goes live, the server should be able to handle the load and balance it in terms of 70,000–80,000 parallel transactions.
11. Source: Authors' notes.