

User Centered IT for the Public: A Corporate Partnership in e-Governance

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Abstract—The high tech and world class IT Corporations in the rapidly growing city of Pune, India and its low-tech Government organizations serving the public form a striking contrast. The gap in work cultures between the two makes joint projects a challenge, even though much needed and apparently feasible. In this paper we present an approach where an intermediary role was adopted to bridge the gap in work cultures and a user centered design methodology was adopted in the interests of the common citizen, to successfully complete two projects, the Pune Municipal Transport (PMT) website and the Pune Garden Department website.

Index Terms—E-governance, User Centered Design, Corporate social responsibility, Information technology, Non-government organizations

I. INTRODUCTION

THE growth and unique profile of Pune makes it a city that is in strong need of e-Governance to enable it to manage its unprecedented growth and myriad affairs. It also houses among the best of the world's IT talent that is willing and able to step in. State of the art methods like Usability Engineering for creating quality products are also available at a few companies. However, there exists a gap in outlook, expectations and practices between the two sectors that is difficult to bridge. Government bodies have limited expertise in IT and are slow to leverage their potential for improving governance. Corporate IT on the other hand, though delivering world-class technology solutions, is ill equipped to create sustainable IT solutions working within a government culture. This is symptomatic of the classic divide between the public and private sectors. So despite the potential for much good from such a synergy, each is unaware of how to make this leap of faith and status quo continues for the most part.

The need that exists is however a virtual need, a 'felt' rather than an overt need, for IT solutions for e-Governance. For corporate IT it is the need to reach out and contribute for the good of the city. And for the government,

it is a 'nice to have' add on to existing governance. City governments, unlike Central Government and State Government bodies, lack any formal structures that help define a plan for implementing IT solutions. Change is driven either as directives from above [1] or initiatives on the part of a dynamic bureaucrat, like the Municipal Commissioner [2].

Pune's IT department comes under the Chief Accountant's office, where the main focus is on property taxes, birth and death records and online complaints [3].

With this background of a vaguely defined and 'non-urgent' need, the necessity of undertaking such projects as well as their value has to be created and proven. In this particular case study involving Persistent Systems Pvt. Ltd. and the Pune Municipal Corporation (PMC), a mutual need interestingly evolved. This happened through a combination of community and IT orientation of the initiators of the project, both in terms of motivation as well as in the power to make a difference.

II. TRANSLATING INTO ACTION FOR MUTUAL BENEFIT

A. The Genesis

This initiative began much like other community initiatives, with a 'volunteering' approach, the desire to 'do something for the community' and through the coming together of the following stakeholders:

--A socially responsible company supporting community oriented IT initiatives

--A government department willing to try, because of their past association with and trust in individual contributors

--Individuals from NGOs with IT backgrounds who could also devote adequate time for community projects
Though the effort began informally, it became clear very quickly that for the initiative to generate a real and meaningful outcome that was deployable, a 'volunteering' approach to such an undertaking by either party was wholly inadequate and not worth starting on a serious e-Governance project. Some level of formalization and official commitment from each of the potential investors was key to ensure that it was taken up and sustained both as a project and also as an ongoing activity.

B. Key Personnel Roles for the Initiative

The need for formalization goes hand in hand with role

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definitions of people who will service this requirement. Three key roles required for this undertaking (Fig. 1) were recognized and defined in order to make this project a success:

- A government delegate, with directive to follow through from an initiator with clout
- A lead on the corporate side with motivation for community work supported by a corporate champion
- An intermediary who is both tech savvy as well as involved in community work and aware of the bureaucratic configurations.

With the private player bringing to the table considerable range of skills from requirements gathering, functionality for end user, design and technical expertise, the public authority, in this case a department of the city government, is left with the main task of providing content, giving it official sanction and ensuring its ongoing upkeep. The intermediary needs to fulfill the key role of facilitating the process that is critical to address the work culture gaps and provide push to try and adhere to the timelines.

C. Motivation for Official Partnership and Value

The motivation for Persistent Systems to take on the project was solely to create software for the benefit of Pune’s public and specifically contribute software for the city of Pune’s e-Governance attempts along with other ongoing social initiatives. From the government perspective, being gratis was of course a strong motivator to engage. Being gratis also meant that approval bureaucracies were not required, which was an additional motivator for Persistent.

A Memorandum of Understanding was drawn up by Persistent as a critical first measure, to give a semblance of formality to the process and to detail roles and expectations. From a project perspective we were engaging no differently than we would on a user centered client project, regardless of whether or not monetary transactions were involved and therefore we felt this necessary.

The value of such delivered projects is of course apparent for the government, provided the projects are sustained and maintained.

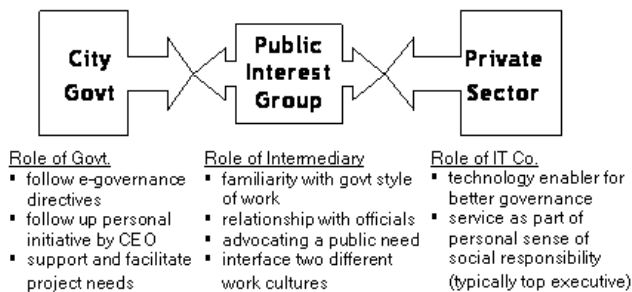


Figure 1. Bridging the gap between the “public” and the “private” in a Public Private Partnership

As an organization engaged in business however, it is imperative to be clear about the value we are providing. Direct and indirect business benefits are important to

sustain the effort. A business value may not be apparent to a volunteering mindset upfront but for the activity to be meaningful and sustainable it is necessary to derive it, albeit after the fact. Thus CSR initiatives must have clarity of ROI from a corporate perspective. One such business benefit for the corporate is the opportunity to try new technologies and showcase it in the form of a case study thereafter. Another is the possibility of getting other funded e-governance projects in India or abroad. And yet another is the opportunity for a complete lifecycle project experience for staff.

We must also acknowledge the unrecognized or intangible ROIs for each of the collaborators.

For the city, it is a push to organize their assets and information that existed in scattered manner. And for the private sector, employees are exposed to a “government” client, which presents unique challenges. The satisfaction of being connected to a local (community) project and making a difference to their city is also of great value. And finally, it also presents a learning opportunity for each of the parties to appreciate the workings of the other, even if gradually.

D. Project Selection Process and Formal Work Plan

The ideal and lofty goal of such initiatives is to make all Government services accessible to the common man in his locality, through common service delivery outlets. It is also to ensure efficiency, transparency & reliability of these services at affordable costs to address the basic needs of the common man.

Working with such goals and the large number of projects with strong unmet and unrecognized need of IT adaptation, we looked at various criteria to select our first project. The objective was not just to create a project, but also help establish a setup that supports and sustains the creation of such projects. Based on this we aimed for a first project among a list of potentials that would have maximum chances of success within a definite time period. Our initiative placed a low emphasis on process re-engineering, hence was not expected to directly improve governance, but focused on basic information access to the public at large. The criteria are elaborated in Table 1.

TABLE I
TEMPLATE OF PROJECT SELECTION CRITERIA FROM AMONG PMC PROJECT PORTFOLIO

	e-Gov Complaints System	Sanitation Dept Personnel Mgmt System	PMT Website	SMS for PMT Schedule	Garden Dept	Right to Information Workflow Mgmt System	Projects (Roads) e-Tracking
3 months duration							
PMC Support and Motivation							
Potential for Success							
Visibility							
Sustainability							
Scalability							

1) *Duration:* we wanted a project that could be launched within a short enough timeframe to demonstrate success but

a long enough timeframe to create a quality deliverable and this timeframe was defined as 3 months

2) *Support and Motivation*: Success of such projects is intrinsically tied to the support of the particular department, particularly its head. A project with maximum likelihood of support from the government department was considered a better candidate pilot project

3) *Success Potential*: this criterion was related to an overall chance of success of the particular project, based on the judgment of the initiators

4) *Visibility*: the expectation was that a project that would be the most visible to the public would generate enough public support to sustain the initiative

5) *Sustainability*: given the propensity of government websites to stagnate and eventually become obsolete, sustainability was considered a critical criterion. It was felt that the existence of an active NGO in the city that would act as a pressure group to ensure that the site is kept up to date would serve this purpose

6) *Scalability*: the project needed to be scalable as it grows and, if successful, to be replicable to other related areas

Based on the above criteria, we selected the PMT project as the first and the Garden Department project as the second.

Despite being an informal and an unbilled project, a formal project plan was created, communicated and adhered to diligently from the corporate side. A conscious effort to not project it as an ‘informal’ initiative from the corporate side was considered crucial all along. Otherwise it may have been difficult to cross the barrier of ‘flexible deadlines’ and for it to see the light of day.

A project plan was thus created in the manner done on client projects integrating Persistent’s Usability Engineering and User Centered Design methodology and is shown in Fig. 2. Every attempt was made all through the project to impress the need for adherence to this plan, particularly from the resource management perspective.

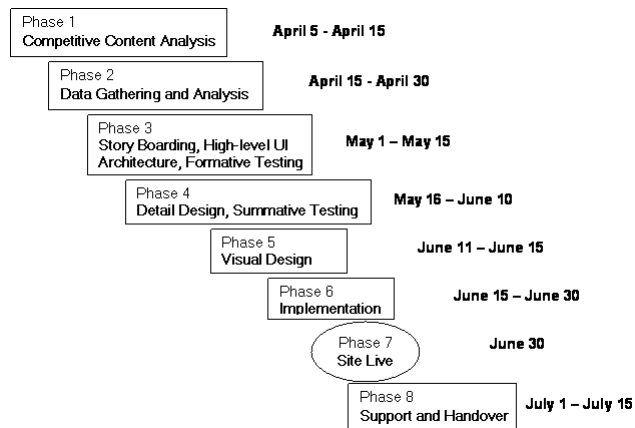


Figure 2. Project Plan for Garden Department Website

III. BUREAUCRATIC HIGHS AND LOWS

Historically and by definition, the two organizations

came together with their vastly differing work cultures as well as unfamiliarity with each other’s approaches and processes. As mentioned and defined earlier, upfront clarity of the work model between the Government and Corporate was critical to the success of the project. While in the corporate sector, accountability, performance basis, efficiency, productivity etc. are all expected and judged harshly, government departments may be unaware of and not used to their criticality and hence unwilling or unable to respect project guidelines, deadlines and constraints. With a common project on the anvil, this becomes a major barrier for its smooth flow and progress. The role as well as relation of the intermediary with the particular government department plays a key role here in being able to influence the level of cooperation.

Some of the highs and lows in the almost yearlong collaboration are elaborated here.

A. The Lows

We faced some of the issues highlighted by NASSCOM in its assessment of various e-Governance projects [4], in particular, the lack of a champion, lack of ownership of the project, transfer of key personnel and the lack of a “second tier” within the department, making the department head a single point of contact for information and to take decisions, and hence the weak link in the chain. Non-availability of this key person leads to project delays. On the PMT project, a strong delegate kept the project flowing whereas in the Garden Department, the Department Head was the focal point.

Some of the more specific issues we also faced were:

- 1) *Getting content*: The content was
 - Unavailable
 - Scattered in various formats, including hand written documents, partially in English and partially in Marathi
 - Conflicting, two versions of the same data would not match
 - Inappropriate for a website with lengthy descriptions of processes in ‘govt-alese’, which would be unfathomable to the public at large

All of these are major issues when making a user-friendly site from non-user friendly government documents!

2) *Authenticating content*: Given that considerable editing, translating, massaging and at times creation of data became a part of the project deliverable, it was essential that the data was authenticated by the right authority, usually the Department Head. This turned out to be a major cause for delay, since in a government hierarchy subordinates are unwilling to take on a task that entails such responsibility and the Department Head is a predictable bottleneck.

3) *Managing corporate deadlines within the flexible approach that characterizes government work ethic*: Government machinery works according to a strict prioritization protocol, wherein tasks assigned by a superior authority, often capriciously, take precedence over other tasks, even when deadlines are missed. The only recourse to

this is to get instructions issued by a higher authority, at least for critical tasks, which in the case of a Municipal Corporation is the Municipal Commissioner.

Timelines are often agreed to by subordinates in front of superior officers even with the knowledge that these cannot be realistically met.

In our case, both projects spilled over to a duration of about 5 to 6 person months each, largely due to delays in acquiring and validating content. Here, keeping in mind the fact that sometimes other client projects undergo requirement changes and get delayed too helps minimize frustrations.

4) *Communication*: While the private sector and increasingly even the NGO sector relies heavily on electronic forms of communication, at least in the urban areas, even Heads of departments of the Municipal Corporations do not access the internet and email and rely on manual methods of data delivery. This can and did become a major barrier and impediment to progress.

5) *Post handover Ownership and Maintenance*: IT Companies are in the business of design, development and delivery. They do not wish to be saddled with the ownership and maintenance of projects, particularly government projects with all the issues described in this section. Despite very clear demarcation of this point before, during and after handover, site maintenance is still a sorry step back from the quality deliverable that was handed over. A negative feedback by the public on a quality issue generated post launch, even led to Persistent taking off its brand association with the site. This is essentially due to a lack of capacity within city departments vis-à-vis technology. This leads to a knowledge gap about website maintenance processes and the inability to draw up such contracts.

6) *HR Challenges on the Corporate side*:

Despite the 'noble' cause, the 'unglamorous' perception of a CSR and government project made it a challenge to assemble the right team. It was also hard for them to feel engaged and excited about the project at start. Here the personal interest of the organizational head motivated employee participation as well as some employee 'volunteering'.

Through the collaboration, it becomes apparent that the government typically does not have the wherewithal to upkeep IT handed over to them, let alone manage the execution of IT projects. They need much handholding, orientation in work culture and training to take on the ownership of such projects. They do not have the ability to manage such resources either. Archaic and rigid structures and limitations in being able to hire the right personnel make this problem particularly intractable.

B. *The Highs*

Some of the more rewarding aspects of this activity we experienced are:

--Cooperation of the government department for the PMT project exceeded initial expectations. This was

especially critical given that the department head changed twice during the course of the project. This reiterates the need for a strong "second tier", which tends to be more stable in the organization and a more 'available' facilitator.

--The limited constraints imposed from a design perspective were rewarding and an opportunity for creative and systematic project execution. As elaborated further in Section 4, we executed the complete User Centered Design methodology by including user expectations, goals and user performance and success criteria into the process. The site received good feedback about its ease of use from the press and citizens. This also highlights however, that since the client had very few inputs, they do not understand, care and therefore value something 'intangible' like quality design. The concept and value of creating a brand is also unfamiliar to them.

--Working towards something that would benefit the citizens and the city as a whole excited the project team. It also seeded the beginnings of a 'community' consciousness and a means to do work in this sphere. The launch of the PMT website led to almost 350 comments and complaints within days, a clear sign of the public interest that the site created. There were also letters in the press commending the government for this initiative.

--The corporate team gains an appreciation and some understanding of the difficulties of working in governance. And hopefully it will translate into a gain of some of the positives of corporate work culture among the government agencies and individuals in these agencies.

IV. THE CLASSIC USER CENTERED DESIGN PROJECT BALANCING THE 'WOW'

Persistent's User Centered Design Methodology™ shown in Fig. 3 involves engaging users right from project conception through to finalization of the design.

This is done through a structured approach involving interviews, observations and studies, and then progressively refining and testing the design alternately in the Usability Lab with actual end users. The end goal is to make the design easy to use. It is finalized only when we are satisfied that it is actually easy to use by the intended user and according to predefined user performance criteria. This methodology was considered essential on an e-governance project, where technology is brought to the masses and the user would be 'anybody and everybody'. The methodology was followed meticulously in both projects undertaken.

We believe this can be the essential differentiator between widespread use or rejection by the public, of a public e-service.

Some highlights of the user-centered approach used were:

- Over 300 users surveyed to understand user needs
- The design of the user interface architecture reflected

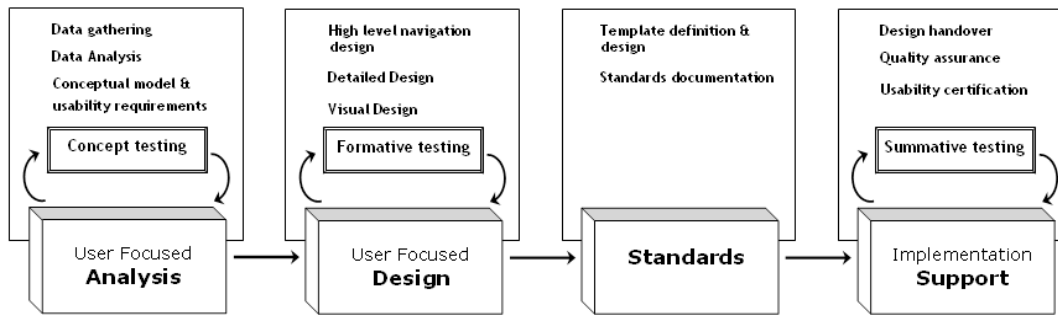


Figure 3. Persistent's User Centered Design Methodology™

this and was refined with successive interactions with users and discussions with stakeholders

- Formative and summative usability testing conducted to refine the design and arrive at the final version
- Performance benchmarks on tasks arrived at through research and used thereafter during testing
- Many interactions with users and user representatives throughout the design process
- Visual Design to reflect the envisioned brand of the website

Home pages of both sites are shown in Fig. 4. and Fig. 5. below.

The requirements of such projects are usually fairly open since the client defines and imposes very few boundaries. Aside from what the user requirements may be, this

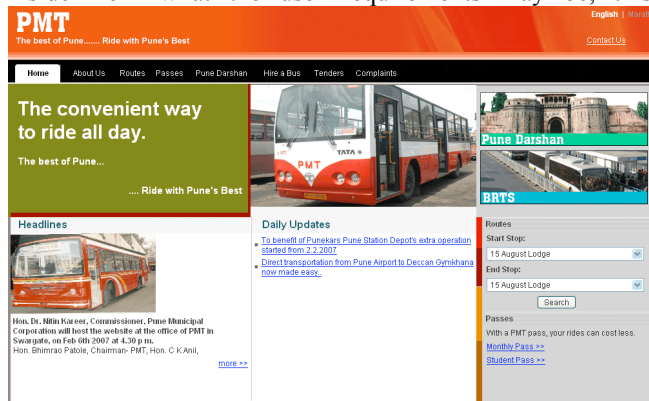


Figure 4. Homepage of PMT website

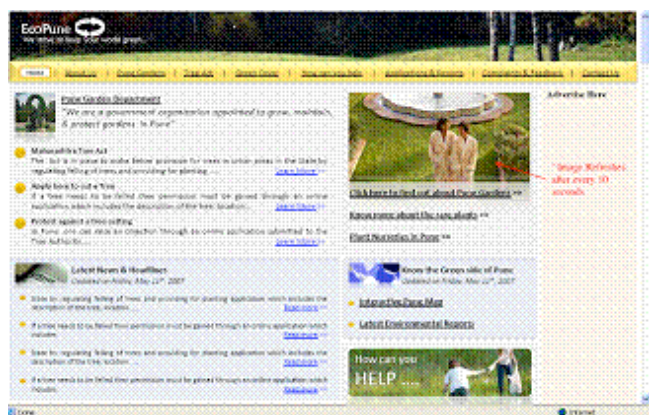


Figure 5. Homepage of Garden Department website

therefore also presents an opportunity from a technology

company perspective to try out new technologies as mentioned in Section 2.2, to generate a 'Wow'. It is a potential ROI for the corporate that could thereafter serve as a case study for clients and prospects. These new technology solutions however may or may not be relevant to the user population in question, since design for the public and therefore for ease of use often requires the simplest and maybe a low tech solution. So while these two conditions maybe divergent, it is important to try and balance them out in the interests of a longer-term view of sustained benefit for all.

V. CONCLUDING REMARKS AND LONG TERM VIEW FOR EFFECTIVE PARTNERSHIP

So is it a good idea to do such e-Governance projects for free as part of CSR?

On the one hand a service provided gratis seems to be taken less seriously than when paid for. So there is a desire to have a 'price tag' and therefore a value attached to the service. And on the other hand, money per se is not a limiting factor for a typical city government and the Pune Municipal Corporation is no exception. These would seem to indicate that it is in fact better to enter into a proper contract with the city to deliver products that would then have a clear 'need' and directive for deployment and sustenance.

Why then the whole circus of a CSR driven project?

The overriding reasons are the political-bureaucratic process and therefore the dilution of quality.

Almost all government agencies are plagued by outdated tendering procedures that involve the selection of the lowest bid. Without well structured Terms of Reference for the contract and a minimal in-house IT expertise, it is very easy to 'bid down' to a low quality deliverable. This inevitably leads to the plethora of low-grade, ill conceived and designed, user-unfriendly, unreliable sites that are the hallmark of most government websites. A reputable company would prefer not to get into a project under such circumstances.

With little or no value placed on 'usability', 'brand imaging' and overall look and feel, it becomes hard to justify the high price tag that usually comes with engaging high end IT companies for quality deliverables.

Political interference in the tendering process and the general perception that a government project is just ‘not worth it’, ultimately means that when a reputed IT company works for the city, it will only ever deliver the kind of world class projects it does to international clients, as a part of CSR. Working “outside the system” as it were, then gives the company a degree of latitude that allows for taking a more creative approach to the projects as well as the freedom to select a project based on an internal selection criteria without getting more bogged down with bureaucracy than already happens during project execution.

For an effective and long term partnership therefore:

--A holistic plan to tie all e-Governance projects together needs to be created by the city CEO, that is the Municipal Commissioner, who has both the vision to discern benefits and the authority to drive the process forward

--The mechanics of creation, ownership and maintenance need to be examined realistically and agreed to officially by both parties

--IT companies may need to carry the weight of incubation, training and transition of IT personnel for a considerable duration before the government is able to actually take ownership and ongoing maintenance, and thereafter handover as a unit

--Foreseeable benefits must be apparent upfront by the corporate. A long term continuation plan must be set up internally as well as with government in order for the activity to sustain officially and beyond ‘volunteering’, which is difficult to sustain

--Ease of use is a very important criterion for e-governance and must be a part of such projects for overall acceptance by the public and for its sustenance

--Intermediaries who can help bridge the gap between Government and corporate and are willing to take a strong position when required, can help provide a push to keep the process moving along

--The working model must keep getting refined with every project to move to the next level of formalization and towards more, better quality and extensively used government sites

-- A possible joint venture could be envisioned between the government and a consortium of IT companies aided by intermediaries. This consortium could help the city map out its IT strategy, set-up best practices in technology, design and project management. IT could lend certain key resources while actual development work could be paid for by the city

--Continue to select projects with strong community vested interests are a must, to ensure long term on-the-ground benefits to citizens

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