Enhancing cricket viewing experience on a mobile phone

Design Degree Project (Stage II)

Submitted by
Shaswath.V
08633804
Interaction Design
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Project Guide
Prof. Ravi Poovaiah

Approval Sheet

The Interaction Design Project III entitled 'Enhancing cricket viewing experience on a mobile phone' by Mr. Shaswath Vaidyanathan; Roll No.08633804 is approved in partial fulfillment of the requirement for the Masters of Design degree in Interaction Design.

Signatures

Project Guide : _____

Chairperson : _____

Internal Examiner : _____

External Examiner : _____

Declaration

I declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/ source in my submission.

I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

Signature:

Name of the student: Shaswath Vaidyanathan

Roll No: 08633804

Date:

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Finally, I am forever indebted to my family and friends for their support and encouragement.

Abstract

India is a cricket crazy nation and IPL has glued millions of users to television sets for the excitement it provides. The widely followed existing medium for watching cricket is TV and whatever is shown is purely based on editor's choice from statistics to advertisements. The widely reachable medium in urban India, like the Internet, majorly displays only static information although it can easily exploit the wide possibilities of the computing power.

Usually cricket matches take place when people go to work and there is a high probability that they are not near their television sets. Hence, the research is targeted towards mediums that are always a part of them anywhere, anytime.

The project started off with choosing the right medium, by understanding the people's requirements doing user studies along with in-depth analysis of the vital components of a cricket match, especially a Twenty2o game.

The author has proposed the idea of using the media richness of a 3G mobile phone combined with the simplicity and elegance of the designed cricket application's visual interface to bring about a rich cricket viewing experience overall.

Keywords: Cricket, 3G Mobile, Enhance, Experience, Media richness

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1. Introduction

A live cricket match provides rich experiences for users coupled with fun and excitement, at the same time, the same experience is not on demand. The richest media available now for watching it is undoubtedly television. It is also the most controlled and restricted media in its use. Its reach is in every common man's home in a metro city, but how often does the person stay in his home to attain its richness?

The project looks at intertwining different mediums, to provide one rich medium which has multi-purpose, by comparing the merits and demerits of the different mediums.

Further the television media is the most controlled and everything is based on the editor's choice from showing the stats to putting up the advertisements. Although the sub components (ads) of the game cannot be completely ignored considering the marketing angle of the game, it should very well be controlled by the user. Why does it so happen that when we need to watch the replay of a wicket, we are forced to wait till the advertisement ends? Or when we need to watch the scorecard desperately, we are shown the batting stats of a batsman? Considering the advancement in the technology in the mobile space, interactivity in the medium can always be brought about to enhance the viewing experience by providing better user control.

Television provides rich graphics, but is it a rich media? With today's world following the path of twitter and facebook, personalization and

socializing are important aspects that must be considered. Although interactive television is making inroads, it is lagging far behind the power of the mobile phones which are soon entering from the 3G to 4G arena. The author has looked at the different possibilities of the 3G medium and exploring the same to blend media richness with the existing features available for viewing cricket on a mobile phone.

The scope of the project is defined for people

a) who watch cricket ,
b) who have access to any of the existing mediums to watch cricket
c) who are at work/ away from home

This thesis discusses the following,

- Background study that explores the content that is shown on different mediums when a cricket match is going on.

- The perceptions of different users on the richness of the cricket related content that is shown, recorded through user studies.

- Initial conceptualization of design ideas based on analysis of background research.

- Further analysis and research leading to final concept and its prototyping.

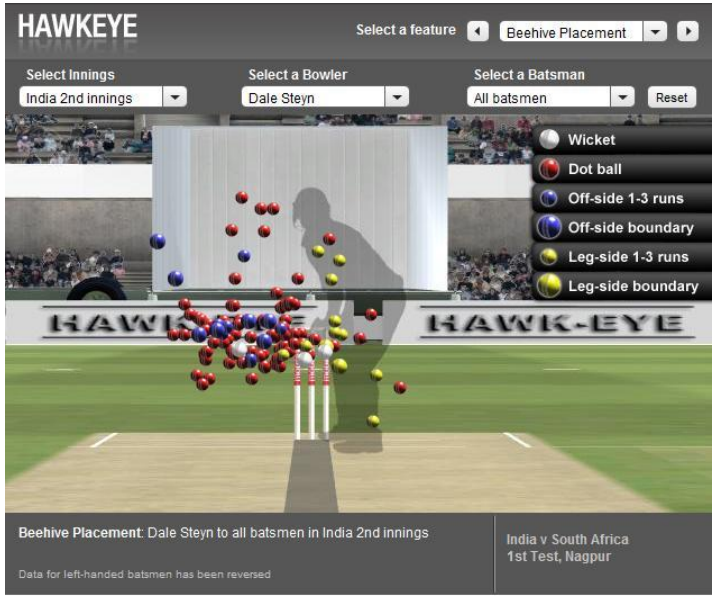


Figure 1: Rich content (Beehive placement for bowlers)
Source: Cricinfo.com

2. Background Study

Literature study

Cricket is quite a complex game and to keep the game engaging, lots of cricket content like graphics, replays, fun feeds etc. is shown to develop the user's interest and involvement in the game.

Content in Editors Control

Although quite a lot of interesting content is shown, eventually the choice of it being displayed is in the control the content producer (and distributor) and a viewer is a relatively passive component who consumes the content fed to him. [1]

Richness of the content

There lies a major scope for content enrichment which can enhance the viewing experience of an audience especially for a sports activity like cricket, in a major tournament like IPL. Richness is defined as the capacity of a media to share meaning. More complex the message the richer the medium need to be for effective communication. [2]

Adapting to mediums

The cumulative IPL audience for the current IPL has been around 130 million viewers in the first 33 matches, according to TV audience monitoring agency TAM. The television audience has starkly increased from the first two editions of the IPL, but what is interesting to note is the impact of the new mediums on the cricket viewing audience.

As per the current statistics, IPL channel on YouTube has attracted around 31 million views and it is adding one million new views every day.

Asia Cup (Jun 15 - Jun 24, 2010)

Match	Venue	Date	Match Time
1st Match - SL v Pak (D/n)	Rangiri Dambulla International Stadium	Jun 15, 2010	02.30 Pm
2nd Match - Ban v Ind (D/n)	Rangiri Dambulla International Stadium	Jun 16, 2010	02.30 Pm
3rd Match - SL v Ban (D/n)	Rangiri Dambulla International Stadium	Jun 18, 2010	02.30 Pm
4th Match - Ind v Pak (D/n)	Rangiri Dambulla International Stadium	Jun 19, 2010	02.30 Pm
5th Match - Ban v Pak (D/n)	Rangiri Dambulla International Stadium	Jun 21, 2010	02.30 Pm
6th Match - SL v Ind (D/n)	Rangiri Dambulla International Stadium	Jun 22, 2010	02.30 Pm
Final - TBC v TBC (D/n)	Rangiri Dambulla International Stadium	Jun 24, 2010	02.30 Pm

Figure 2: Matches scheduled at office timings
Source: Krishcricket.com

Background Study | Literature study

July Systems, which has rights for IPL clips on mobile, claims that over the first 12 days of IPL over 0.7 million IPL videos have been watched by users on mobile phones. [3]

Scheduling of cricket matches

The matches held in IPL were predominantly night matches [4] but usually the twenty20 or the international ODI events take place during the working hours of cricket viewers in India. As cricket is more of an international game, matches are scheduled as per the place where it takes place, and so often, people have to resort to mediums like the web for update on the cricket score.

Another reason is that different series are broadcasted by different pay channels, so sometimes people miss out on the fun because they don't have that pay channel.

These further aid the use of the new mediums like mobile internet to flourish, as it can be accessed anytime, anywhere. The question arises on how affordable will such mediums be?

Background Study | Literature study

Mobile phone as a medium

Mobile phones make a good medium to be explored for my project because of the rich benefits associated with it.

Easy access anywhere: The first and foremost reason is people complaining on missing out on cricket action because they are on the move or working in office. With the almost everywhere connectivity of mobile phones, users are guaranteed cricket action.

Overall rich experience: SMS alerts constantly update a user on the status of the cricket match. Now with internet access in almost every mobile phone around, websites for mobile phone display scorecards that refreshes every minute and with the bloom of the big screen touch based mobile phones, mobile TV allows for live streaming of the match itself. The experience of watching any sport has become richer with advancement in technology.

Staying in touch: Socializing has had a huge impact on people's life with the rising of twitter, facebook, g-talk etc. and it plays a key role in watching cricket as people tend to share viewpoints and facts about the game to a person who has just joined in to watch the game.

Good reach in India: Mobile phone reach in India is set to reach around 737 million by 2012. It is estimated that India already has more number of mobile phones (around 545 million) than toilets (around 366 million) according to the UN. [5]

Background Study | Literature study

Growth of Indian Telecom sector

India is having the world's lowest call rates (2-3 US cents), the

fastest growth in the number of subscribers (10 million in 1 month), the fastest sale of million mobile phones (in a week), the world's cheapest mobile handset (US$ 17.2) and the world's most affordable colour phone (US$ 27.42) and largest sale of mobile handsets. These are various factors which lead to revenue growth for the telecom sector as whole. [6]

Future trends indicate that there will be more mobile penetration in India with the launch of 3G as government is planning to introduce it to villages as well, but will there be enough supporting handsets that people can afford to buy that has 3G in it, is something that needs to be observed with patience.

Background Study | Literature study

3G technology in India

BSNL and MTNL launched 3G services in select cities in India. 3G now connects a lot of cities in the West and with the Government focused on connecting all of India, including the rural; 3G technology should get a huge push. Apart from the network providers, handset providers in India are waiting eagerly for the launch of 3G to earn very high revenues from the value added services provided by the technology. The technology is initially being launched on the CDMA platform. [7]

Benefits of 3G enabled mobile phones

Live streaming: One particular advantage of using such a technology is to watch television shows on the mobile phone, which includes cricket. Better data transfer rates assure live and smooth streaming without delay

Better Quality: 3G cellular phones also have conventional voice, fax and data services, as well as high-resolution video and multimedia services which can be used while on the move.

Video conferencing: It also allows us to have video conversations with other people who also use the same 3G technology, which means users can have a live chat while following a cricket match.

Good growth in India: 3G enabled mobile phones reach in India is set to reach around 30 million by 2012. Considering that research on 4G is already underway, mobile phones of the future will be providing a rich multimedia experience. [5]

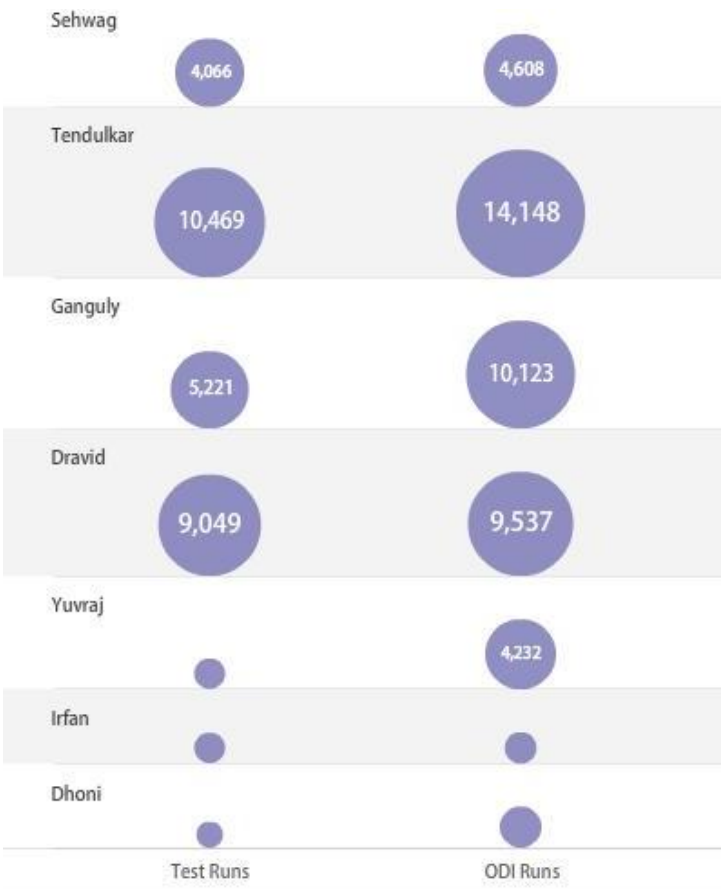


Figure 3: Significance of information (e.g. highest scorer in both formats)

Background Study | Literature study

Interestingness in Cricket

Many cricket related information are constantly being shown on television channels, broadcasted on radio, streamed on web etc. and some are interesting, some are funny, some say the entire match summary, some are facts taken from the cricket archives. But what makes the information interesting for the viewers to look at it, for viewers to search for it, for viewers to think upon it? [8]

Importance/ Significance

Example: Sachin Tendulkar hits his 45th test century

Any significant record that is being broken or any particular mark that is surpassed adds interestingness to that information.

Unexpectedness

Example: A tail ender scoring a century

An unexpected even that is about to happen will invoke curiosity for the viewer and it becomes desired information.

Neighbourhood

Example: How well can India fare in a seaming track?

A condition which poses a challenge, whether it can be achieved or overcome makes the viewers curious to look for that particular match.

1. Gilchrist has just taken more wickets in a match than any other wicket keeper in history;
2. This is close to the longest winning streak ever;
3. Tendulk.ar has just passed his personal best;
4. Wilkinson needs just two more wickets to become Hampshire's highest wicket taker this season;
5. This is the highest third wicket partnership for England in Adelaide;
6. If Waugh gets his century here then he will have achieved this against every ICC nation.

Figure 4: Examples of cricket related statistics

Background Study | Literature study

Thresholds

There are three different kinds of limits or thresholds that invokes interestingness in cricket for the viewers to watch a match

1) Individual

Example: Sehwag about to score a century.

2) Context Dependant

Example: No one has scored more than 80 against Australia in Australia in T20's.

3) Poor Performance

Example: Sehwag holds record of maximum ducks against Australia in tests.

Time varying interestingness

Sometimes information is very dynamic and changes as per the nature of the game. They are very temporal in nature and that's another reason for it to become more interesting for the viewer.

Anticipation

Example: Can Sehwag score a hundred at least in this match as previously he has got out on 90's on last three occasions?

One of the key points that make people glued to the television sets is the anticipation of a certain event becoming true or false. It makes it so interesting because of the suspense that is generated.

Background Study | Literature study

Relative Significance

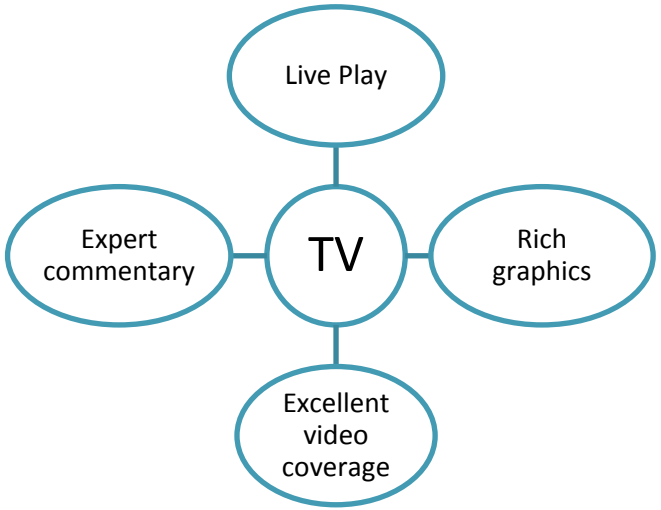
Example: How is performance of one player significantly better than another player in a match?

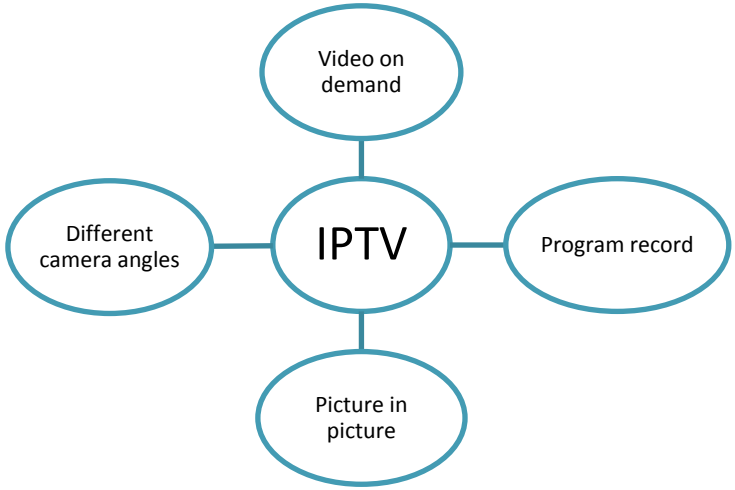
A comparison between statistics of a player or a match is always interesting as it brings out much desired facts about the game.

Opportunity for significance

Example: Can Amit Mishra take one more wicket to equal record with six wickets of opponents left?

An unlikely event that is very much about to happen also adds the interestingness quotient to the game.





2. Background Study

Existing Mediums

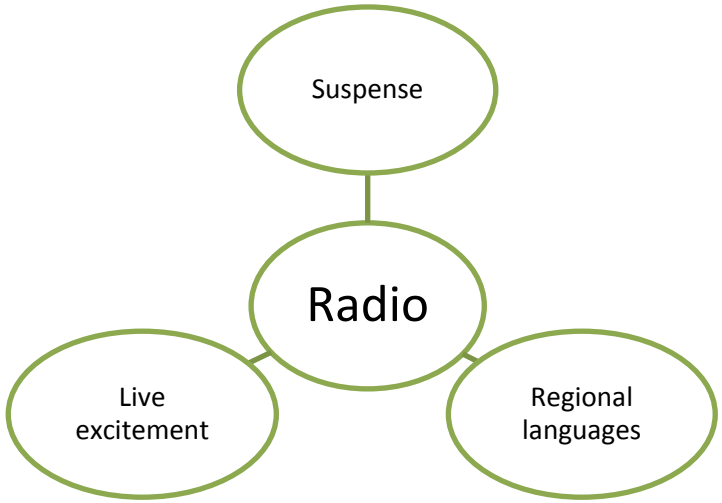
Different mediums broadcast cricket in different ways and there are benefits associated with each one of them.

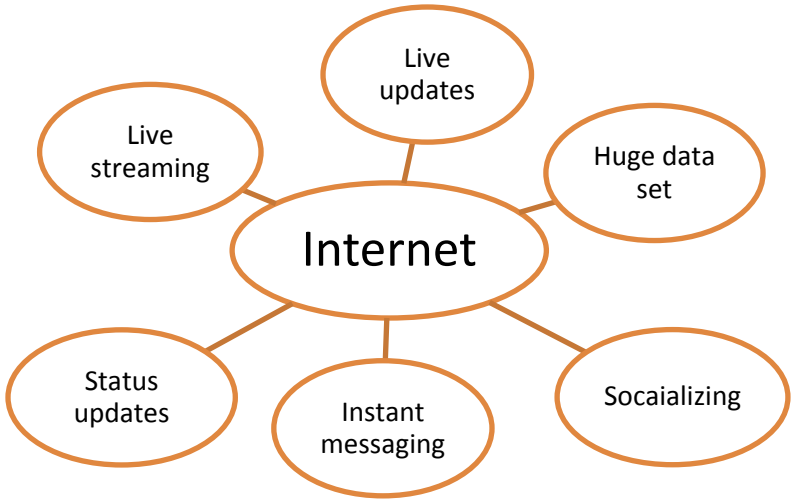
Television as a medium:

Television brings along with it rich media and live connectivity to the game which makes it the front runner for the most followed medium for watching cricket or any other sport. Its high points for users include rich on screen graphics, close-ups of play, instant replays, slow motion film etc. There are experts who work with these video clips to show us what bowlers and batsmen are doing, comment on the field setting making the match more lively and discussed upon. [9]

IPTV as a medium:

Interactivity in television was brought about in 1999 which allowed viewers to view highlights during the game, access statistics and select different camera angles. Apart from the Video on Demand feature, options for recording a program, picture in picture, IPG etc. soon followed up. Although internet in TV has provided a complete new dimension to watching television, it lags behind in speed and multiple connectivity and being more of a one way interaction than a two way interaction like the World Wide Web is.





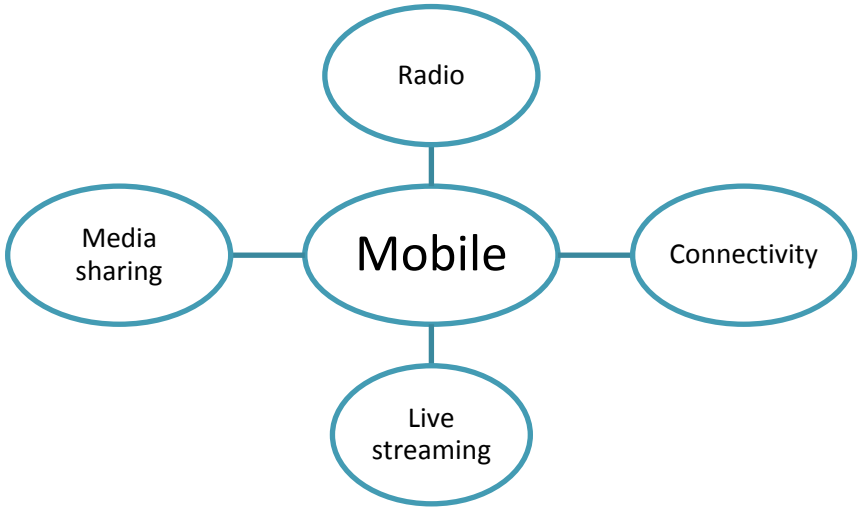
Background Study | Existing mediums

Radio as a medium:

It is one of the oldest mediums and still widely followed because of its immense reach ranging from big cities to small towns in India. Cricket is widely followed through radio as it builds up immense excitement. Hopes, fears, jokes (and anger) are very methodically expressed in radio which makes the game even more interesting. Another interesting factor is the suspense that builds up as the images are being visualized for the audio commentary that is been broadcasted. Another plus point of the medium is the different regional languages the commentaries are available in, which make it reach among the masses even more.

Internet as a medium:

Websites like Cricinfo, Indiatimes, and Yahoo have a dynamic scorecard display which updates/refreshes every one minute. Cricket scores have been never been so easy to get with all time connectivity and live updates. Cricinfo has added a new feature to their list of features – the Hawkeye, which shows a set of graphic visuals (Pitch Map, Beehive, Manhattan etc.) similar to the one displayed on the TV, for the current live match being broadcasted. Although a huge data set is available with these websites, the information being shown is very much static in nature. On the other hand, almost all these websites include the option of socializing with friends via tweets and instant messaging, status updates etc.



Background Study | Existing mediums

YouTube has come up with live streaming of cricket matches along with additional video packages that include match highlights, special moments, player interviews etc.

Mobile as a medium

Since long, mobile phones have been used as a medium to send match updates as a SMS; but with the advancement of technology and a bigger screen size, live streaming is possible in the mobile itself. It also has the advantage of having a wide variety of features that come in-built, like the radio for example. Sharing a media is also easily done. The mobile phone can also be connected to a computer and the shared media can be stored. The fact that the users carry this medium around where ever they go makes them feel connected to the game anywhere, anytime.

Fig. 5 shows the relationship shared by the different mediums

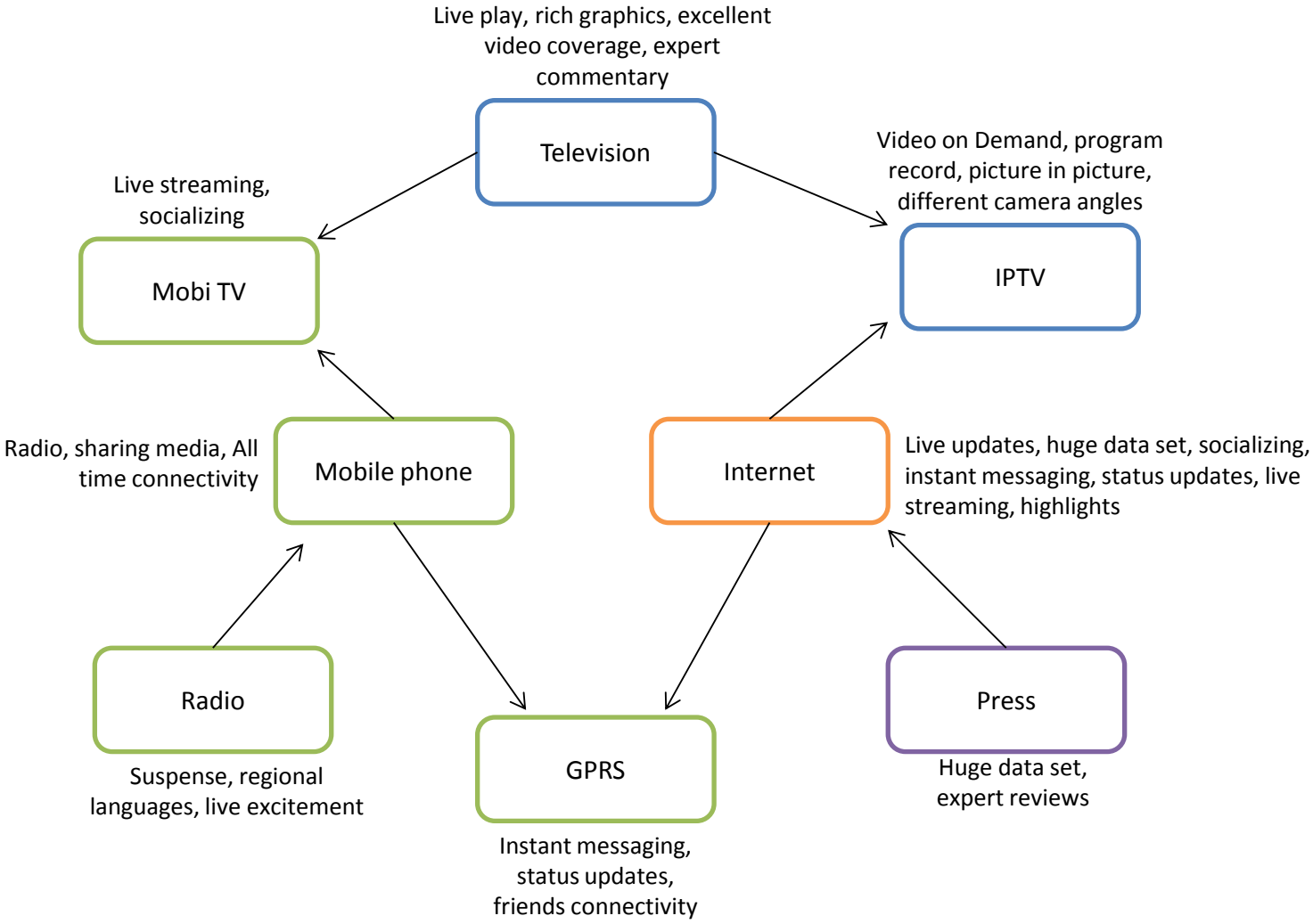


Figure 5: Relationship shared by different mediums

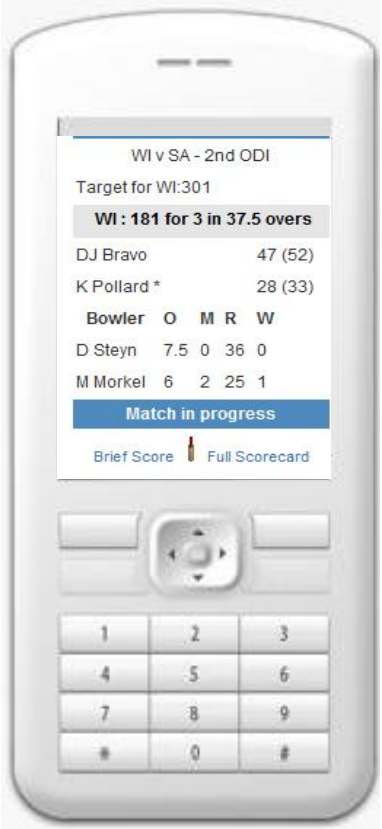


Figure 6: An SMS update on a cricket mobile phone
Source: Krishcricket.com

Background Study

Case Studies

Apart from the different mediums, I looked at some of the applications that broadcasts cricket and did a heuristics on them to understand their merits and de-merits. Some of them are listed below:

Mobi-cricket

One of the earliest features to regularly update cricket fans about a live cricket match was the SMS updates provided by different service providers. [10]

Some of the top insights regarding this feature are:

a) Though the options were quick and easy to know about a match, they lacked in details.
b) Graphs never were visually appealing in small screens, and big long scorecards were taxing on the users mind to be read all the way down.
c) The viewer doesn't get to see what he wants to see. He has to be contended with what he gets for 3 Rupees an SMS.

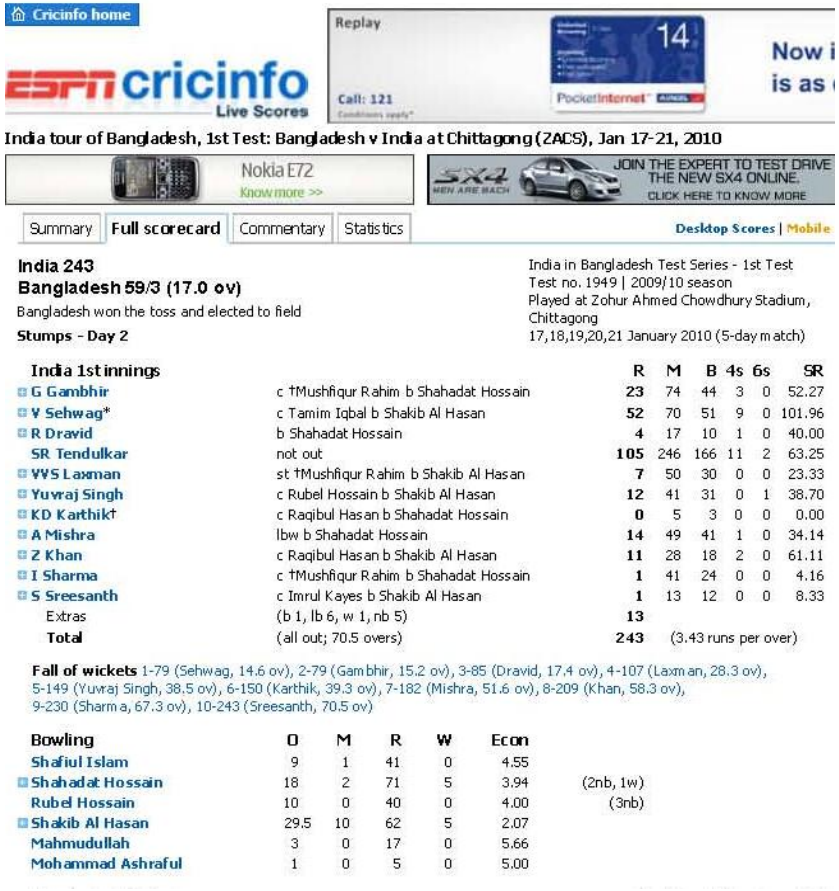


Figure 7: Web interface of Cricinfo.com
Source: Cricinfo.com

Background Study | Case Studies

Website: Cric Info

This is an online website which updates current live cricket match scores all across the world for different leagues. [11]

The major drawback includes:

a) Considering the advancement in computing power, these websites are very static in displaying the cricket graphics. For example, until recently this website only supported loads and loads of textual data.

b) With more and more features introduced by such websites (other examples include, cricbuzz.com, indiatimes.com etc.) , the sophistication increases in navigating these websites.

The positive points include:

a) A huge data set of information is available for matches taking place all across the world for many years.

b) Cricket toolbar that is available for download from this website allows the viewer to be constantly updates with the cricket score when he is online.

Background Study | Case Studies

MLb.com (Mobile application)

This is an application which was developed for baseball to allow viewers to be updated on the score on the go. [12]

a) The application is rich with features but doesn't allow the interactivity to happen, for instance:
The scorecard is static and refreshes only when we refresh it.

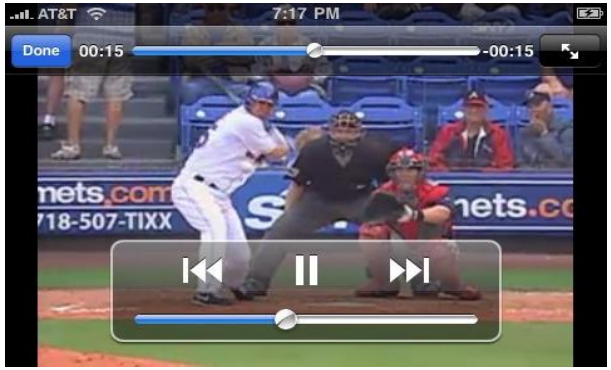
b) The scorecard doesn't allow us to show how the match progressed, rather just shows only the current state of the match.

c) The features are modular; there is no interconnection within the features, for example: each time a user has to come out of that option and get back into another feature

The positive points include:

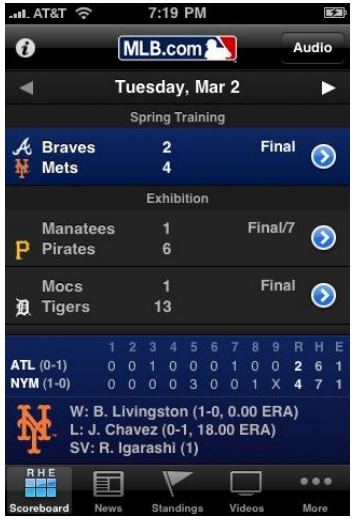
a) Simulation of the actual game that is taking place is available.

b) Latest news gets streamed on to the application and is denoted by an alert.



(a)

(b)



(c)

Figure 8: Features of MLB mobile application (a: Video streaming, b: Simulation of the game, c: Scorecard) Source: MLB.com

3. Research

Cricket match analysis

The map below categorizes the different components of a match based on the affinity they have with each other.

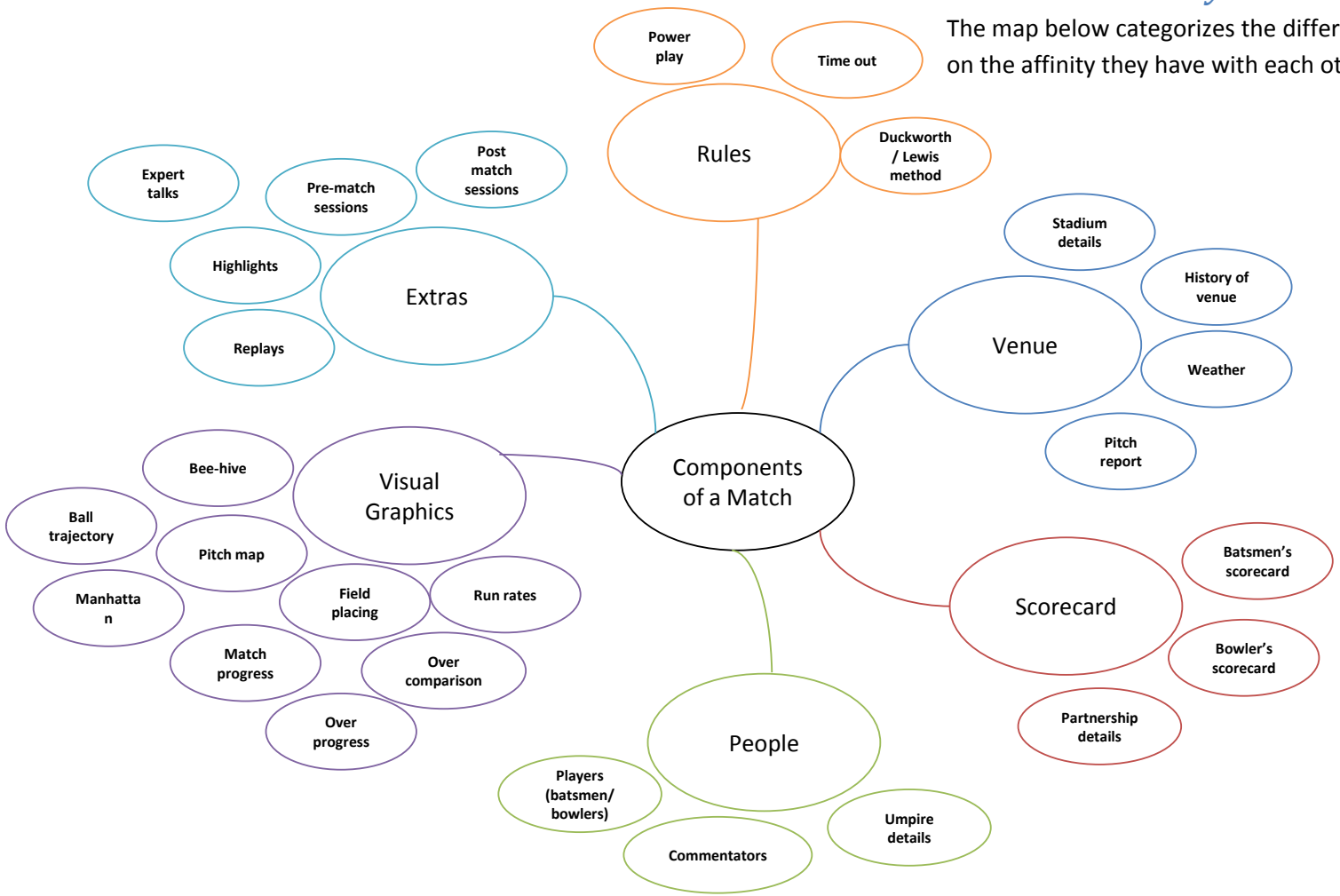


Figure 9: Components of a match

One line information

Box information

Full screen information

Figure 10: Types of information
Source: Youtube/ipl.com

Research | Cricket match analysis

Types of information

There are different types of information that are shown on television when a cricket match is going on. To understand about them, I analyzed an entire T20 game for 20 overs each side between Rajasthan Royals and Chennai Super Kings in the recently concluded Indian Premier League 3 (IPL 3).

Some are contextual: For instance, when an event takes place like the fall of a wicket. A replay of the wicket is shown along with the current match statistics of the outgoing batsmen and the profile statistics of the incoming batsmen.

Some are factual: Some facts regarding the game or the team are displayed time and again during a match. For instance, Sachin has hit the most number of centuries in ODIs.

Some are fillers: Fillers are added to add publicity to the event or the sponsors. For instance, like the advertisements displayed after every over, tourism spots in Barbados when a match is being held there, talks with famous celebrities who came to attend the event.

Now this information gets categorized into three different types:

a) One line information
b) Half-screen information/ Box information
c) Full screen Information

Research | Cricket match analysis

Classification of information

One line information

Match Details
Toss Details
Bowl Speed
Stadium Details
Over Summary
Umpire Details
Extras Information
Score with runs and overs
Boundaries Information
Score with Run rate
Commentator's details
Interesting Information
Balls Since Last Boundary
Last 5 over's summary
Projected Score
Score with runs required
Score with Target
Ball Speeds of a bowler
Distance of six hit
Score with required run rate

Box information

Player stats in the tournament
Player Profile (Batsmen/Bowler)
Player stats in the [Test/ODI/T20] format
Player stats in the match
Player information after fall of wicket
Fall Of Wicket (FOW) details
Brief Match Summary
Leading run scorers in the tournament
Surveys
Partnership Details
Team standings
Fair Play Award Standings

Full screen information

Replay of wicket
Replay of 4's & 6's
Replay of chances
Advertisement
Main scorecard - Batting
Main scorecard - Bowling
Over Replay
Team's inning's summary
Wagon Wheel
Commentator Reports [toss, pitch]
Big screen Animated Displays
Manhattan
Trajectory Replay
Wicket's highlights
Boundaries highlights
Player's highlights
Pitch Map
After Match Player Interviews
Quick Highlights
Awards Presentation
Catches Highlights
Fun Feed
Special Moments

Figure 11: Classification of information

Research | Cricket match analysis

Pattern of information

Figure 12: Pattern of information

Research | Cricket match analysis

Pattern of information - Insights

a) The density of information displayed is high during the initial stage of the match.

b) The density of information substantially increases when an event takes place. (In this case it is the fall of a wicket)

c) A replay of the wicket is expected after the fall of a wicket which doesn't happen. Replay is shown in the next over.
[Observe: First innings – Over 4 – red dot indicates wicket – Highlight (green dot) is not shown until mid 5th over]

d) In depth analysis indicate that the main batting score card (orange dot) is shown only once in 4 overs usually in the interval between overs for approximately 10 seconds, which is very short and scarce for a viewer who has just joined in to watch the game.

e) Although the information is mostly contextual, there is scope for user generated content to be shown in the middle overs where the match rather progresses uneventfully, leading to drop in the density of information as shown.

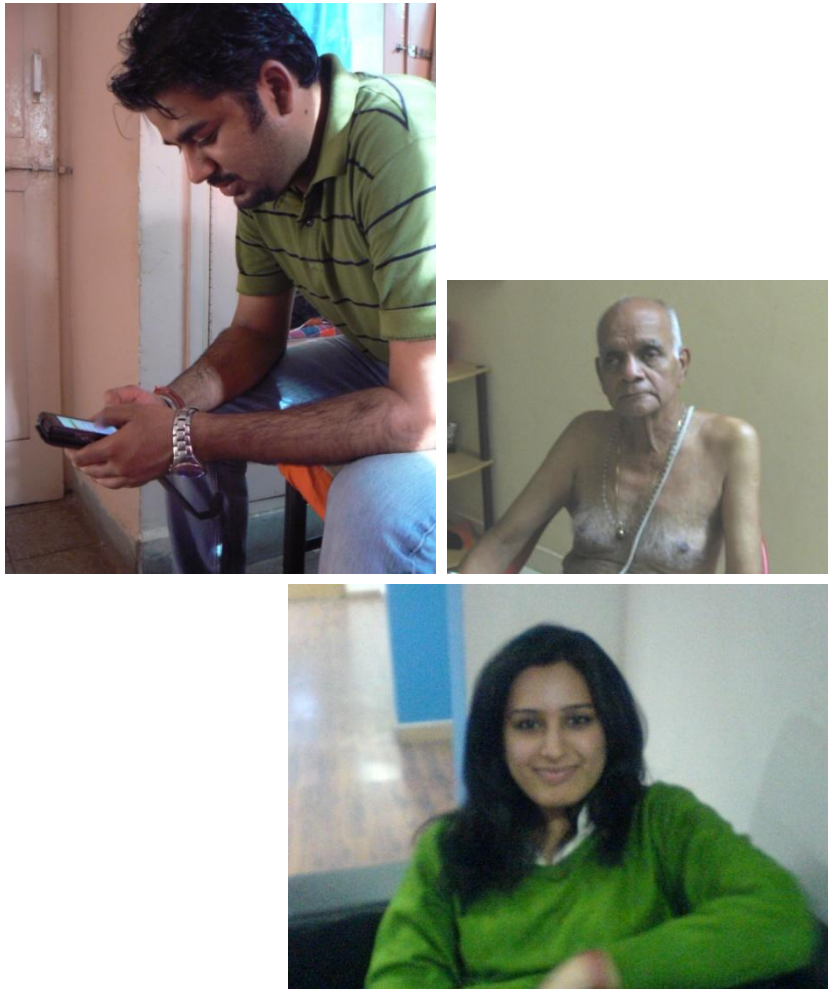


Figure 13: Users [clockwise from top: office going male, elderly, female student]

3. Research

User studies

It was significant to find out the user's needs and requirements regarding the game itself, and the medium they chose to view the game.

1) The user's choice of information displayed during a cricket match. For instance, "The likes and dislikes of different information regarding cricket shown on the television", "Frequency of the different kinds of information displayed", "Which are the relevant, irrelevant, interesting, predictable information",

2) The means adopted by the users to stay put with the game under different scenarios like "in office", "on the move", "at home".

3) The choice of medium for watching cricket and what they look for in that medium

4) Socializing aspect of the game involved "Like to watch alone or in a group?", "Share stories?" etc.

Since cricket is viewed across a range of age groups and also amongst both genders, following set of users were chosen to carry out the user studies:

No. Of Users: 9	[Elderly: 3, Office going: 3, Students: 3]
Among the users:	Male: 6, Female: 3
Among the users:	Cricket geek: 3
	Watches cricket regularly: 4
	Watches cricket occasionally: 2

Research | User Studies

Top Insights

Cricket Graphics

1) Very much interested in the cricket graphics like where the ball pitched, the speed of the ball, Hawk eye, field setting etc.
2) Context specific graphics are an added necessity for the user.

Excitement Builder

1) Not much into web scorecard of cricket, rather prefer audio commentary, because that builds the excitement.
2) Being with friends builds up the excitement while watching the match.

User Control

1) Users find advertisements as an unwanted distraction although some feel it as a necessary break.
2) Users want to see the context specific information when they desire to see it (for instance, how many times a batsmen has become out in his 90's when he is about to reach his 100).

Socializing

1) Users feel TV is the best medium to socialize while watching cricket – to listen to stories, view points, facts etc. along with friends, family.
2) Users feel free to express joy or sadness after a match has ended in a public forum

Personalization

1) Different Users have different surges of excitement while watching cricket, some prefer Sehwag batting, some prefer Warne's spin attack, some prefer tight matches etc.

Research | User Studies

2) Users have specific interest on the kind of information being shown on the television. For instance, some feel wagon wheel is the best way to show a batsmen's innings and so they want to see it always at regular intervals.

Want Regular Updates
1) Users are ready to send a SMS to receive current match scores.
2) Users are ready to stand amidst a crowd outside a TV showroom.

Adapt to new mediums
1) Users download cricket applications when in office, which when downloaded stays on the desktop and shows regular scores.
2) Live streaming of IPL on YouTube has been a hit amongst the users.

Creating an avatar, having a star icon
1) Users like a specific star icon (e.g. Dhoni) and like to see him perform well which makes the cricket game more addictive for them.
2) Users like following the statistics of their favourite star icons.

On the move
1) Users do not want to miss matches being stuck up in traffic or when having a long day at the office.

Record and replay
1) Users do not want to miss out on any action of the match while doing multi tasking.
2) Users want to see highlights and replays of an event at will.

Research | User Studies

Match history at a glance
1) The first requirement for a user, when he just begins to see a match, is to understand the summary of the match at one go.
2) Users tend to get irritated, waiting for a match scorecard for too long.

Share experiences
1) It's an exciting moment for a person to watch cricket in a stadium and share the experience along with his family and friends.
2) Some users want to watch a match in stadium just for the sake of meeting a cricketer live and getting a chance to get their autograph.

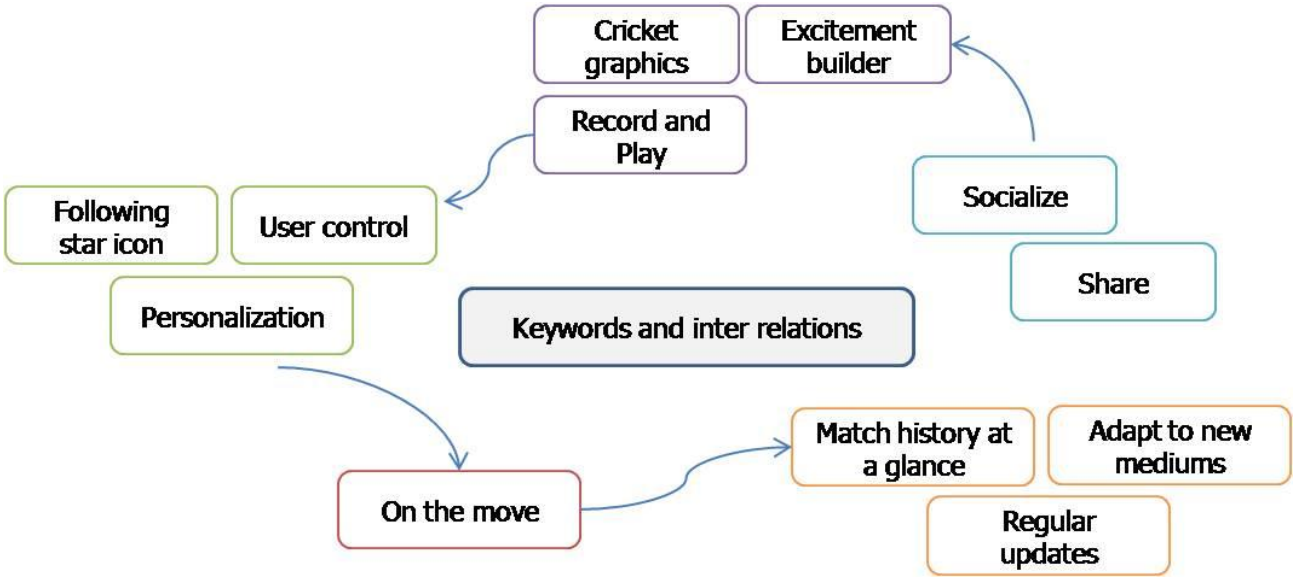


Figure 14: Inter-relation of insights obtained from user studies

4. Design Brief

The aim of the project is to develop a mobile interface that enhances the current cricket viewing experience for the viewers viewing on a mobile phone.

Essential Parameters:

1. The mobile interface must be easy to use for a user on the move.
2. It must be intuitive enough for the user to understand the match summary in a jiffy.

Desirable Parameters:

1. It must be able to provide user the control to view what information he wants to see intuitively and easily.
2. Options provided in the interface must be personalized to the user's needs and requirements.
3. The application must bring about the feeling of togetherness with friends/family while watching a cricket match.

Incentives:

1. The features applicable to the mobile interface can also be synched with the user's computer for him to provide additional options for viewing the game.

Match Meter
To indicate which team has the upper hand

Different interactive visuals
To indicate strengths of the team like 4 out of 5 bats

Figure 15: Match summary

5. Initial Concepts

Mapping user needs to technology features

The user's needs and requirements serve as a starting point for conceptualization. Different design ideas originate from a need and later merge into a concept. Considering mobile medium to be a rich medium for a game like cricket, as discussed from the background research, an apple I-phone was considered for ideation.

Need: Match history at a glance
Design Idea: **Match Summary**

The first thing that a user wants to know is the status of a match when he/she switches on a television or looks up at a scorecard on the web. The information on the first page of a mobile interface in this case can reveal details like

- Who has the upper hand in the match?
- In which department (bowling/batting etc.) did the team lag?

It will be useful for the user to immediately analyze the game.

a) For instance, the fig. on right shows Chennai Super Kings have the upper hand in the match. They have fared well in the batting department (4 out of 5 bats) and reasonably well in the bowling department as well (4 out of 5 balls) compared to their opponents, the Mumbai Indians.
b) There is also a match meter on top which shows Chennai Super Kings are clearly ahead in the game.
c) A standard brief match score card is also a part of the first page.

Figure 16: Quickie

Initial Concepts | Quickie

Need: Personalization
Design Idea: **Quickie**

There is so much information displayed on television which is very much contextual. Some may be useful for some viewer; some may not be depending on the context. A Quickie is a personalized user browsing option. If he consistently keeps browsing through the match scorecard, it automatically becomes a quickie. The next time the user logs into the cricket application, these are displayed as small semi-transparent icons which the user can quickly browse through.
A Quickie is assigned based on two options:

a) **User preference:** If a user likes a particular feature in the application he makes it a quickie
b) **Habits:** The smart application analyses a users preference on most viewed features of the cricket application and automatically makes it a quickie, next time the user logs in

This solves the need of a user wanting to see only his favourite feature in a game (like wagon wheel, pitch map etc.) whenever he wants to see it.

Initial Concepts | Radio mode

Figure 17: Radio mode

Need: On the move
Design Idea: **Radio mode**

Users do not want to miss matches being stuck up in traffic or having to spend a long day at the office. They can always be updated by SMSes on their mobile phone, but considering the possibilities that a 3G mobile has to offer there can be different modes that the user can access, to obtain different levels of knowing about the status of the match.

Users get to choose between different modes in the first page itself. The different modes being:

a) Radio mode
b) Video mode
c) Instant Messaging Mode

Radio mode in itself has four different options for the user to browse through.

a) Full Match commentary
b) Match Updates
c) Expert talks
d) Talk with interest group friends

The user can browse through the different options by just clicking on the button on the wired headset or via a Bluetooth headset or on the screen itself while he is on the move.

Initial Concepts | Instant tweeting

Need: Sharing viewpoints
Design Idea: **Instant tweeting**

It is very natural for Indian cricket viewers to express their opinions about the cricket match quite openly depending on which side they are supporting. They like to share viewpoints, know about facts and also express their joy or disappoint.

A tweet mode can allow the users to constantly update their status and also look at other peoples statuses and respond to the same. It allows the users to be a part of the game together, even though they are a long distance apart.

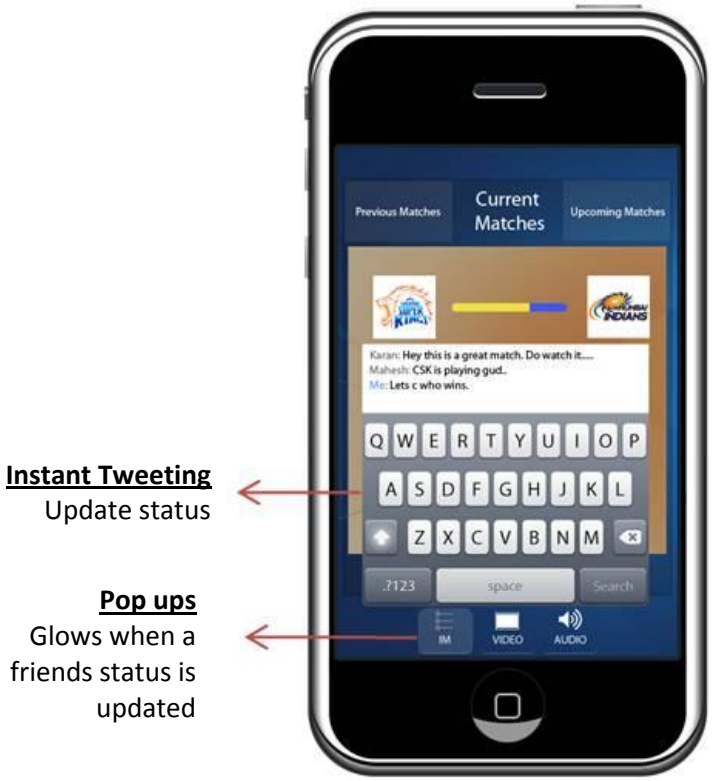


Figure 18: Instant tweeting

Initial Concepts | Video mode

Need: User Control
Design Idea: **Time Line | Video mode**

When the user has ample time to watch a match at leisure, but if away from his home, he can make use of the video mode. The display automatically makes use of the horizontal screen size.

The seek option for the video in this case, is divided into the total overs of the match, which allows the user to easily go to a particular over and view the match.

The viewer can also switch ON/OFF the audio commentary of the match.

Figure 19: Video mode

Initial Concepts | Semi transparent overlay display

Need: User Control
Design Idea: **Semi transparent overlay display**

A person may not want to miss out on a cricket moment while watching a graphic or going through the scorecard. Hence a semi transparent display on top of the video being streamed solves the needs of the user where he has total control of what he is seeing and can minimize it any time.

The user also has the option to add his favourite graphic to quickie, which will be displayed in the first page of the mobile application.

The user gets to choose from three different options – graphics, replays & highlights and scorecards.

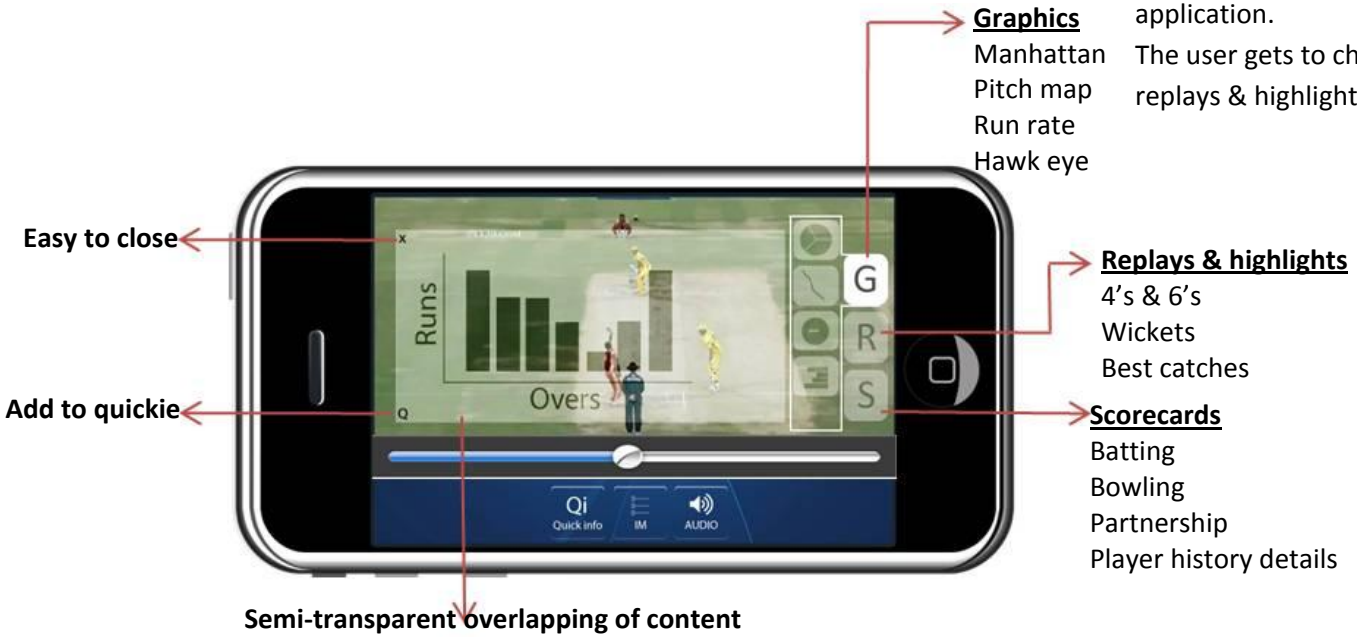


Figure 20: Semi transparent overlay display

Initial Concepts | Media sharing

Need: Share experiences
Design Idea: **Media sharing**

It's an exciting moment for a person to watch cricket in a stadium and share the experience along with his family and friends. The picture/video will be a memory for the person receiving it. Later it can be uploaded on social networking sites as well.
The user is indicated by a blinking pop-up when he receives a media file.

Figure 21: Media sharing

6. Leading to final Concept

Although there are many features that can be a part of the application, the key question to be asked is whether the viewers are indeed getting what they want to see. Further analysis is required in designing the information architecture of the application which is very crucial.

There are two main parameters to be looked at:

1. Prioritization: How users prioritize what they want to see given a scenario
2. Categorization: How users categorize the different contents they usually see during a cricket match

To analyze the above two parameters a card sort was performed with 8 different users.

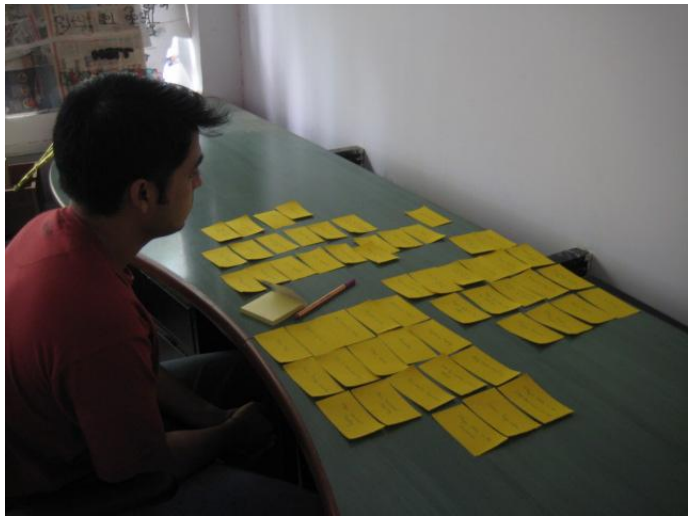


Figure 22: User performing closed card sort

Leading to final Concept

Card Sort

Approximately more than 50 different visual screens get displayed during a cricket match, which talks about a players profile, match summary, highlights, replays, scorecards etc. The information shown is very contextual, but to bring out the same kind of information based on user control, it is necessary to know its significance.

Closed card sort

Hence a **closed card sort** was performed amongst 8 users to understand the user's priority to information displayed. User had to place the 55 different cards (shown in Fig. 22) among three different categories of very significant, significant and less significant. Since the information is very much contextual, a scenario was presented that will help them in categorizing

Types of users

To have an overall understanding of different mindsets of viewers, following different types of users were chosen:
Cricket Savvy (Who follow even domestic cricket frequently) - 2
Those who watch international cricket regularly - 4
Those who do not watch cricket so regularly - 2

Sno.	Key words	Sno.	Keywords
1	Match Details	28	Interesting Information
2	Player Profile (Batsmen/Bowler)	29	Balls Since Last Boundary
3	Toss Details	30	Last 5 overs summary
4	Bowl Speed	31	Wagon Wheel
5	Replay of wicket	32	Commentator Reports [toss, pitch, sideline]
6	Replay of 4's & 6's	33	Surveys
7	Replay of chances	34	Bigscreen Animated Displays
8	Stadium Details	35	Manhattan
9	Over Summary	36	Trajectory Replay
10	Player stats in the tournament	37	Partnership Details
11	Umpire Details	38	Projected Score
12	Extras Information	39	Wicket's highlights
13	Score with runs and overs	40	Boundaries highlights
14	Advertisement	41	Player's highlights
15	Player stats in the [Test/odi/T20] format	42	Pitch Map
16	Main scorecard - Batting	43	After Match Player Interviews
17	Main scorecard - Bowling	44	Score with runs required
18	Player stats in the match	45	Quick Highlights
19	Player information after fall of wicket	46	Score with Target
20	Boundaries Information	47	Ball Speeds of a bowler
21	Fall Of Wicket (FOW) details	48	Distance of six hit
22	Brief Match Summary	49	Score with required run rate
23	Scorecard with Run rate	50	Fair Play Award Standings [team standings]
24	Comentator's details	51	Awards Presentation
25	Over Replay	52	Catches Highlights
26	Team's inning's summary	53	Fun Feed
27	Leading Run scorers/ Wicket Takers in the tournament	54	Team standings in a tournament
		55	Special Moments

Figure 23: Keywords for card sort

Very Significant

U1	U2	U3	U4	U5	U6	U7	U8	
1,5	1, 6	2, 5, 6, 9	1, 5	1, 8	1, 3, 8, 9		6	1, 6
13, 16	13, 16, 17	19	16, 18	10, 13	13, 16, 18	16, 17, 19	13	13, 16,
23, 26, 28	23, 26	22, 23, 26, 28	20, 22, 26	22, 24, 26	21, 22, 23, 28	23	20, 21, 22, 23	22, 23, 26
31	30, 34, 38, 39	36, 37, 39			30, 31, 32, 35, 37, 38		30	
45, 49	44, 46, 49	40, 41, 45, 49	40, 44, 45, 46, 47, 49		42, 44, 46, 48, 49	44, 45, 46	44, 46	44, 45, 46, 49
		50, 51, 52, 55	52					

1	Match Details	44	Score with runs required
6	Replay of 4's & 6's	45	Quick Highlights
13	Score with runs and overs	46	Score with Target
16	Main scorecard - Batting	49	Score with required run rate
22	Brief Match Summary		
23	Scorecard with Run rate		
26	Team's inning's summary		

Significant

U1	U2	U3	U4	U5	U6	U7	U8	
2,5,7	2, 3, 5, 7, 9	1, 7	2, 4, 7, 8, 9	2, 3, 4, 5, 6, 9	2, 5	2, 6, 7, 9	1, 5	2, 5, 7, 9
10,15,18,19	10, 18	10, 18	10, 12, 13, 15, 17, 19	11, 12, 14, 15, 16, 17, 18, 19	10, 15, 17, 19	13, 18	17	10, 17, 18, 19
21,24,27,29	21, 22, 25, 29	21, 27	21, 23, 24, 25, 28, 29	20, 21, 23, 25	20, 25, 29	29		21, 25, 29
30,35,36,39	31, 32, 35, 37	30, 31, 35	30, 32, 35, 36, 37, 38, 39	30, 31, 34, 35, 36, 37, 39	33	30, 35, 36, 37	38, 39	30, 31, 35, 36, 37, 38, 39
40, 48, 41	40, 45, 48	42, 43, 44, 46	41, 43, 48	40, 42, 43, 45, 46, 47, 48	40	40, 41, 49	40, 45, 48, 49	40, 48
51,52,54	52, 55		51, 55	51, 52, 53	50, 52	50, 52, 55	51, 55	51, 52, 55

2	Player Profile (Batsmen/Bowler)	25	Over Replay	40	Boundaries highlights
5	Replay of wicket	29	Balls Since Last Boundary	48	Distance of six hit
7	Replay of chances	30	Last 5 overs summary	51	Awards Presentation
9	Over Summary	31	Wagon Wheel	52	Catches Highlights
10	Player stats in the tournament	35	Manhattan	55	Special Moments
17	Main scorecard - Bowling	36	Trajectory Replay		
18	Player stats in the match	37	Partnership Details		
19	Player information after fall of wicket	38	Projected Score		
21	Fall Of Wicket (FOW) details	39	Wicket's highlights		

Figure 24: Card sort analysis 1(very significant and significant content)

Leading to final Concept | Card sort

Card Sort - Analysis

Scenario: "You have just switched ON your television and a live cricket match is going on. What information, if shown on TV now, will be most significant to you?"

The users were briefed on the scenario and these are the results of the 8 users who placed the 55 different cards in three sections mentioned earlier: Very significant, significant and insignificant

Methodology for analysis

The preferences were listed down from each user and based on the maximum intersection that is possible amongst the 8 users, following results were concluded

Very Significant

The results for the closed card sort indicate that much of the preference is given to,

a) Match Details
b) Scorecards
c) Match summary
d) Highlights

The top 3 of the above 4 gives an instant understanding on,

a) Who is playing the match?
b) What is the current status?
c) Who were the leading performers in the match?

Insignificant

U1	U2	U3	U4	U5	U6	U7	U8	
3,4,8,9	4, 8	3, 4, 8	3	7	4, 6, 7	1, 3, 4, 5, 8	2, 3, 4, 7, 8, 9	3, 4, 8
11,12,14,17	11, 12, 14, 15, 19	11, 12, 13, 14, 15, 16, 17	11, 14		11, 12, 14	10, 11, 12, 14, 15	10, 11, 12, 14, 15, 16 ,18, 19	11, 12, 14, 15
22,25	20, 24, 27, 28	20, 24, 25, 29	27	27, 28, 29	24, 26, 27	20, 21, 22, 24, 25, 26, 27, 28	24, 25, 26, 27, 28, 29	20, 24, 27, 28
32,34,37	33, 36	32, 33, 34, 38	31, 33, 34	32, 33, 38	34, 39	31, 32, 33, 34, 38, 39	31, 32, 33, 34, 35, 36, 37	32, 33, 34
42,43,44,46,47	41, 42, 43, 47	47, 48	42	41, 44, 49	41, 43, 45, 47	42, 43, 48	41, 42, 43, 47	41, 42, 43, 47
50,53,55	50, 51, 53, 54	53, 54	50, 53, 54	54, 55	51, 53, 54, 55	51, 53, 54	50, 52, 53, 54	50, 53, 54,

3	Toss Details	28	Interesting Information
4	Bowl Speed	32	Commentator Reports [toss, pitch, sideline]
8	Stadium Details	33	Surveys
11	Umpire Details	34	Bigscreen Animated Displays
12	Extras Information	41	Player's highlights
14	Advertisement	42	Pitch Map
15	Player stats in the [Test/odi/T20] format	43	After Match Player Interviews
20	Boundaries Information	47	Ball Speeds of a bowler
24	Comentator's details	50	Fair Play Award Standings [team standings]
27	scorers in the tournament	53	Fun Feed
		54	Team standings in a tournament

Figure 25: Card sort analysis 2(insignificant content)

Leading to final Concept | Card sort

Card Sort - Analysis

Significant

The majority chunk of information that fell in the significant section was interesting for the user but priority wise not as crucial as the “very significant” section, to understand about the status of the game. Some of the key cards that fell in this domain were,

a) Replays
b) Player statistics and details
c) Cricket graphics
d) Match statistics (Fall of wicket, last 5 over’s summary etc.)

The above information helps in,

a) Understanding detailed progress of the game
b) Watching exciting snippets from the game
c) Better understanding of match statistics visually

Insignificant

Majority of the information also fell in this section as the users felt that it is not so significant in knowing about the game given the scenario and that it can view later as well. Much of the key cards belong to

a) Pre-match details
b) Post-match details
c) Fun feed
d) Extra information (commentator’s details etc.)

Leading to final Concept | Card sort

Open Card Sort

Methodology

To understand the people's categorization of the information, an open card sort was done where the 8 users were given cards with information details on it and they had to categorize it into groups that made sense to them and then had to name that particular group.

Based on the similarity in the groups formed and the names given, following are analyzed results out of this study:

Categorization

The categorization done by users is as follows (refer Fig.26 and Fig.27),

a) Current Score
b) Replays and highlights
c) Player Profile
d) Feeds and extras
e) Pre-match details
f) Match summary

one line Score	Score	Score/ Timeline	Dynamic Match info	Current State	Batting stats	Current details	
				1, 2, 4, 9		1	
13	12, 13, 16, 17		13, 16, 17	13, 19	16	13	13, 16
23	20, 29	23	20, 21, 23, 29	23, 27, 28, 29	23		20, 23,29
	35, 38	35	35, 37, 38	32, 34			35
44, 46, 49	44, 46, 49	44, 46, 49	44, 46, 49	44, 46, 49	44, 48, 49	46	44, 46, 49
52				54			

13 Score with runs and overs
16 Main scorecard - Batting
23 Scorecard with Run rate
29 Balls Since Last Boundary
20 Boundaries Information
35 Manhattan
44 Score with runs required
46 Score with Target
49 Score with required run rate

(a)

Highlights	Highlights	Highlights	Highlights	Replays & Highlights	Replays & Highlights	Replays	Boundaries	
5, 6, 7	5, 7	7	5, 6, 7	5, 6, 7	5, 7	5, 6	6	5,6,7
25	25		21, 27		21, 25	25	20, 29	25
30, 39	31	39	36, 39	39	36, 39	36		36, 39
40, 45	40, 41, 45	40, 45	40, 45	40, 41, 45	41, 45, 48		40	40, 41, 45
52	52	52	52	52				52

5 Replay of wicket
6 Replay of 4's & 6's
7 Replay of chances
25 Over Replay
36 Trajectory Replay
39 Wicket's highlights
40 Boundaries highlights
41 Player's highlights
45 Quick Highlights
52 Catches Highlights

(b)

Player info in match	Bowling stats	Bowling stats	Player Profile	Player Summary	Player Summary	Individual Summary	Detailed info	Detailed Info.	
	4, 9	4, 9	2	2	2	2, 4, 9	2, 4		2, 4, 9
18, 19		17	10, 15	10, 15, 17, 18, 19	18, 19	10, 15, 18, 19	10, 15, 18, 19	10, 12, 15, 16, 17, 18	10, 15, 17, 18, 19
		21, 25, 29						20, 21, 22, 26	21
31		36				31, 36		30, 31, 35, 36, 37, 38	31, 36
	42, 47	47	41			41, 42, 47, 48	43, 47	42, 47 ,48	42, 47, 48
							54		

2 Player Profile (Batsmen/Bowler)
4 Bowl Speed
9 Over Summary
10 Player stats in the tournament
15 Player stats in the [Test/odi/T20] format
17 Main scorecard - Bowling
21 Fall Of Wicket (FOW) details
18 Player stats in the match
19 Player information after fall of wicket
31 Wagon Wheel
36 Trajectory Replay
42 Pitch Map
47 Ball Speeds of a bowler
48 Distance of six hit

(c)

Figure 26: Categorization of content 1

Feeds	Feeds	Feeds	Special Moments	Other info	Extra Info	Extra Info	Frills	Unrequired	Extras	Talks	Talks	After Match	After Match	Post Match details	
				3, 8	4, 8			3, 8							8
	14	14		11, 14	11, 12, 14	12	12, 14	11	12		11				11, 12, 14
28		28	28	24	24	28	28	24			24	27		22, 26, 27	24, 27, 28
34		34		33	32, 33, 34	34	33, 34	32, 33	31, 35		33				33, 34
					47, 48	42	43	42		43	43		43	43	43
53, 55	53	51, 53, 55	53, 55	50		51, 54	50, 51, 53, 54, 55	50		51, 53	54	50, 51	50, 51, 54	50, 55	50, 51, 53, 54, 55

8 Stadium Details
11 Umpire Details
12 Extras Information
14 Advertisement
55 Special Moments
24 Comentator's details
28 Interesting Information
33 Surveys
34 Bigscreen Animated Displays
43 After Match Player Interviews
50 Fair Play Award Standings [team standings]
51 Awards Presentation
53 Fun Feed
54 Team standings in a tournament
27 Leading Run scorers/ Wicket Takers in the tournament

(d)

Pre-match details	Pre-match details	Pre-match info	
1, 3, 8	3, 8	3, 8	3, 8
	11	11	11
	24	24	
32	32	32	32

3 Toss Details
8 Stadium Details
11 Umpire Details
32 Commentator Reports [toss, pitch, sideline]

(e)

Match Prediction	Summary	Match Stats	Match Summary	Match Summary	Static Match info	
	1, 9			1, 3, 9	1	1
	16, 17	10, 15		13, 16		
	22, 26	20	21, 22, 26	20, 22, 25, 26, 29	22, 26, 27	22, 26
31, 37	30	30, 31, 33, 35, 37, 38	30, 37	30, 38		30, 37, 38
41, 42			48			

1 Match Details
22 Brief Match Summary
26 Team's inning's summary
30 Last 5 overs summary
37 Partnership Details
38 Projected Score

(f)

Figure 27: Categorization of content 2

Figure 28: Nokia N810
Source: Nokia.com

7. Final Concept

The final concept is conceptualized on a Nokia N810 mobile PDA for its Flash compatibility that will be helpful in prototyping the final design. The design can be extended to other mobile phones as well, which have similar screen size.

The key points included while designing the final concept are:

a) Evaluation of the features discussed in the initial concepts

b) Information categorization done through card sort

c) Navigation and structuring of the information to be displayed

d) Aesthetics of the screen displaying the information

The latter two points mentioned above are explained through scenario based detailed wireframes.

Final Concept

The following picture describes the different modes of the final design

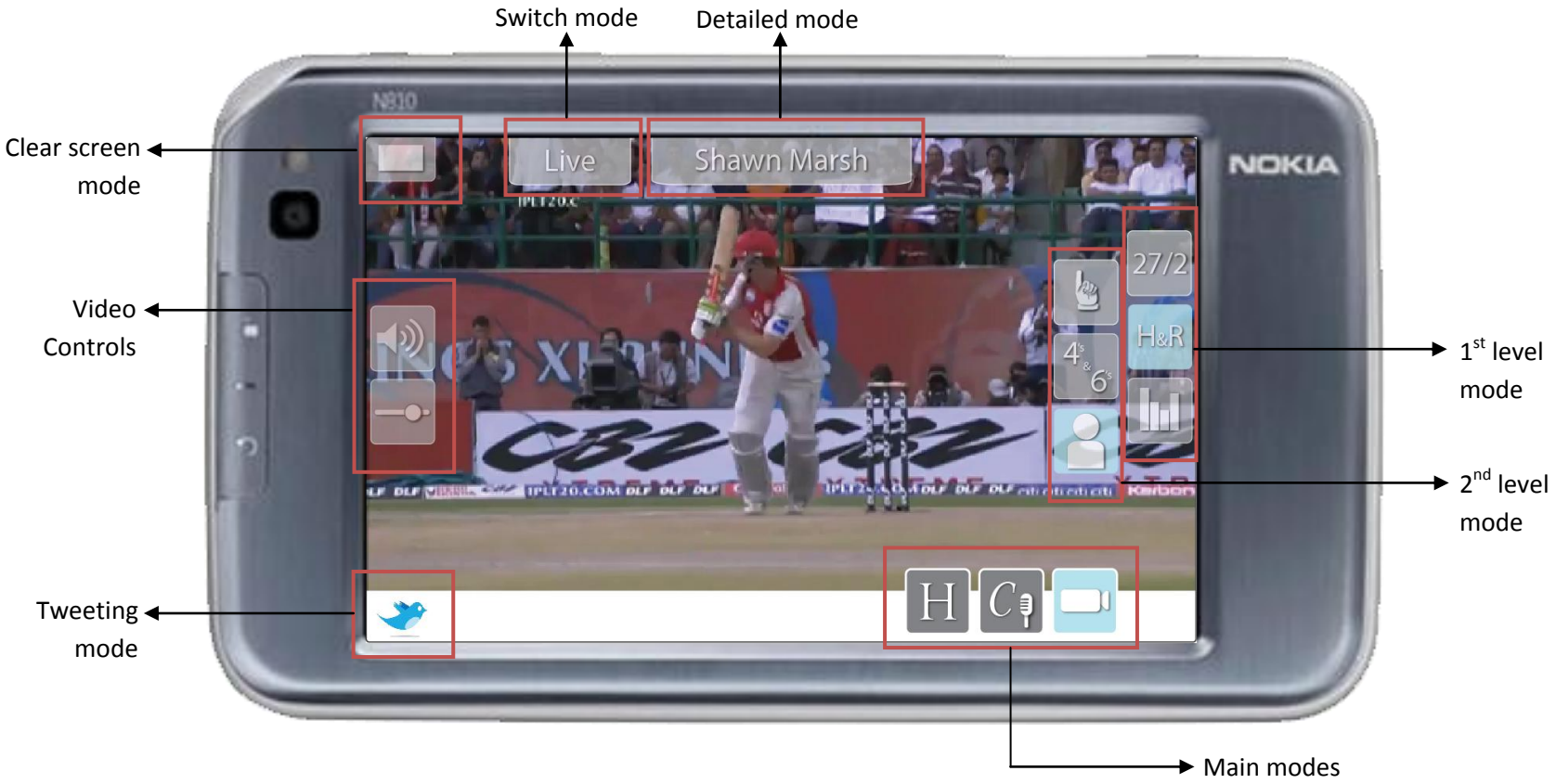
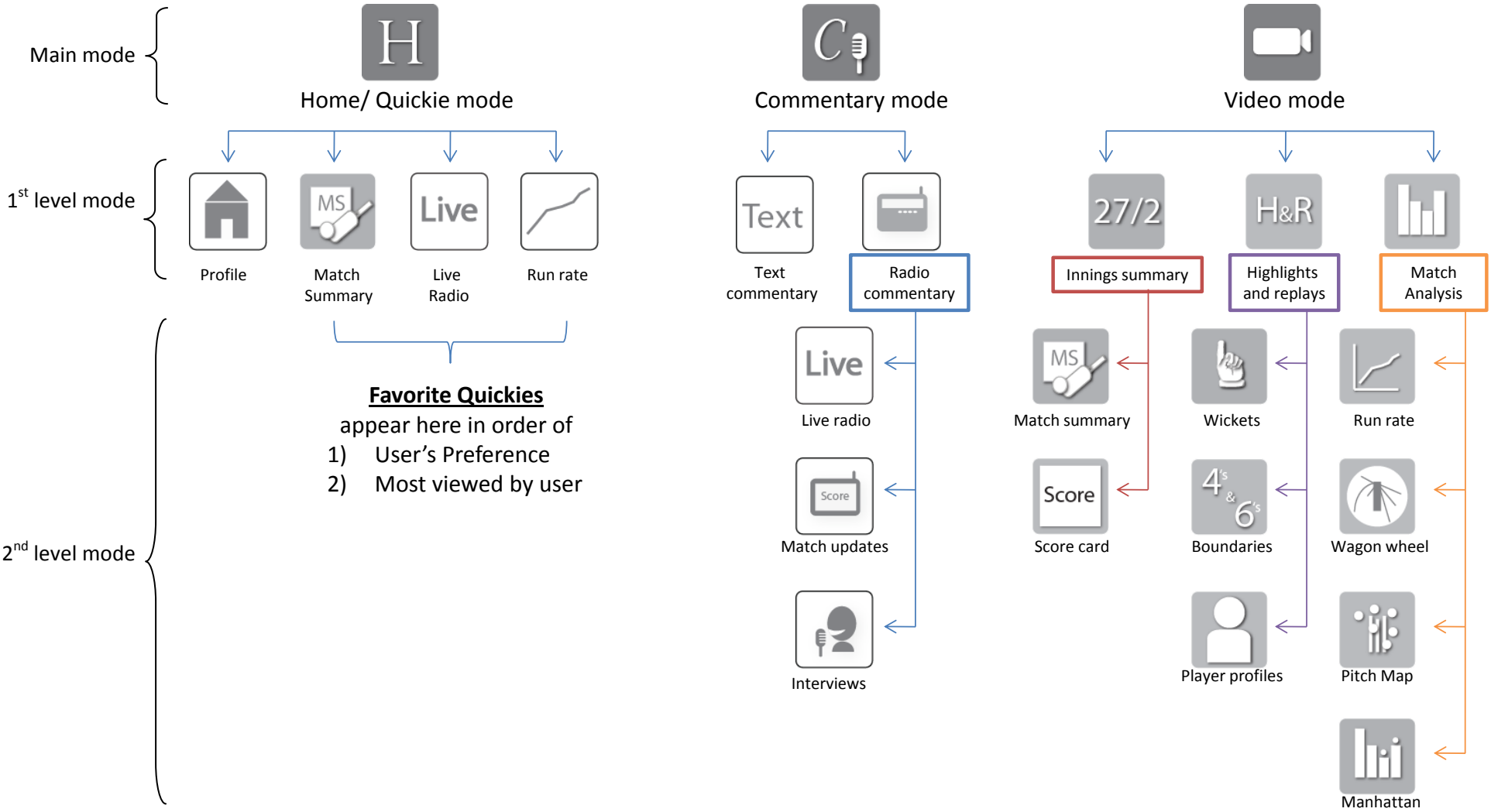


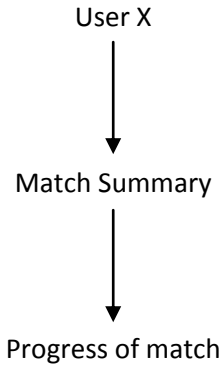
Figure 29: Different modes of the cricket application

Final Concept

Conceptual Model



Scenario 1



Final Concept

Detailed Wireframes

The detailed wireframes are explained henceforth with the help of scenarios to get a glimpse on the final design.

Scenario: 1

User X is travelling to home from his office and wants to know about the **match summary** of today's match between Chennai Super Kings and King's XI Punjab.

Since he has not had a glimpse of the match yet, he is totally unaware of the way the **match progressed**.

Final Concept | Scenario-1

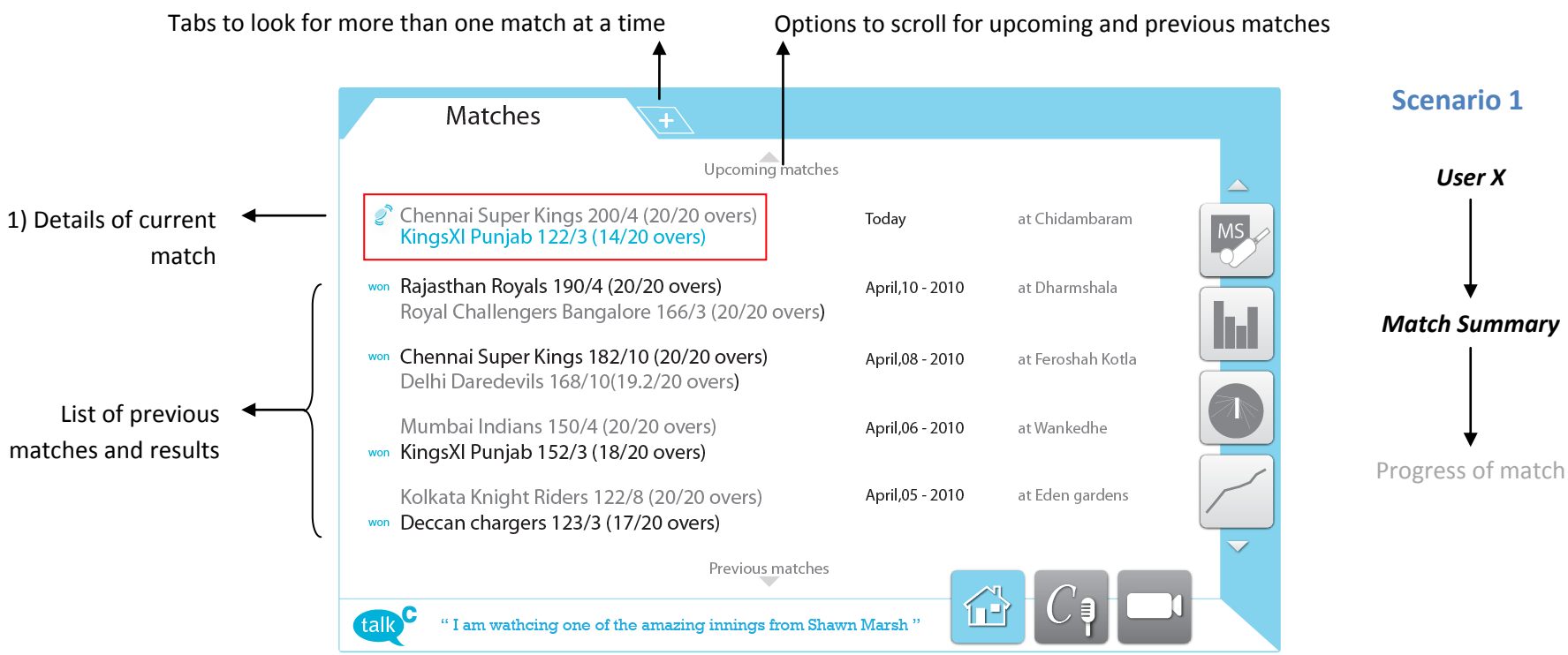
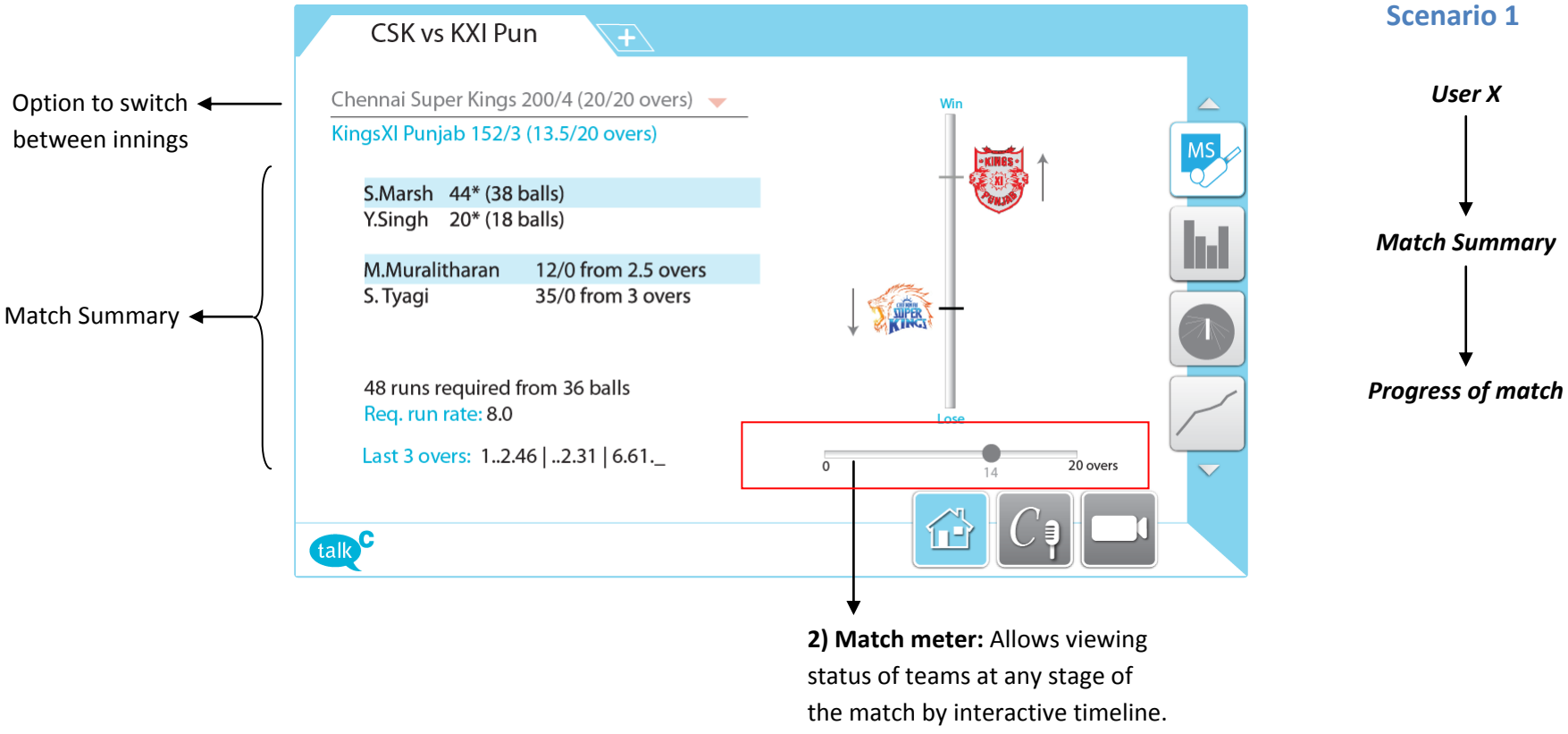


Figure 30: First screen to choose matches

Screen 1

Final Concept | Scenario-1

Screen 2



Scenario 1

User X

↓

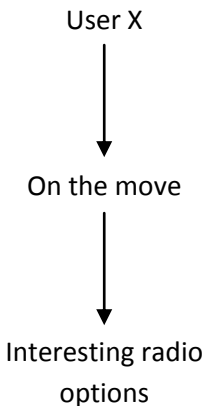
Match Summary

↓

Progress of match

Figure 31: Instant match summary page

Scenario 2



Final Concept

Scenario: 2

User X and his friend User Y have now boarded a local train. As it is difficult to operate a mobile phone in the train to know the status of the match, he puts it in the **radio mode**.

As soon as a wicket goes down, user X gets excited and shares the information with his friend Y and **rewinds the commentary playback** of the excitement that built up before the wicket fell. User Y is very much thrilled with this new application.

User Y gets to explore the **interesting options** of the radio mode.

Final Concept | Scenario-2

Screen 1

Scenario 2

User X

↓

On the move

↓

Interesting radio options

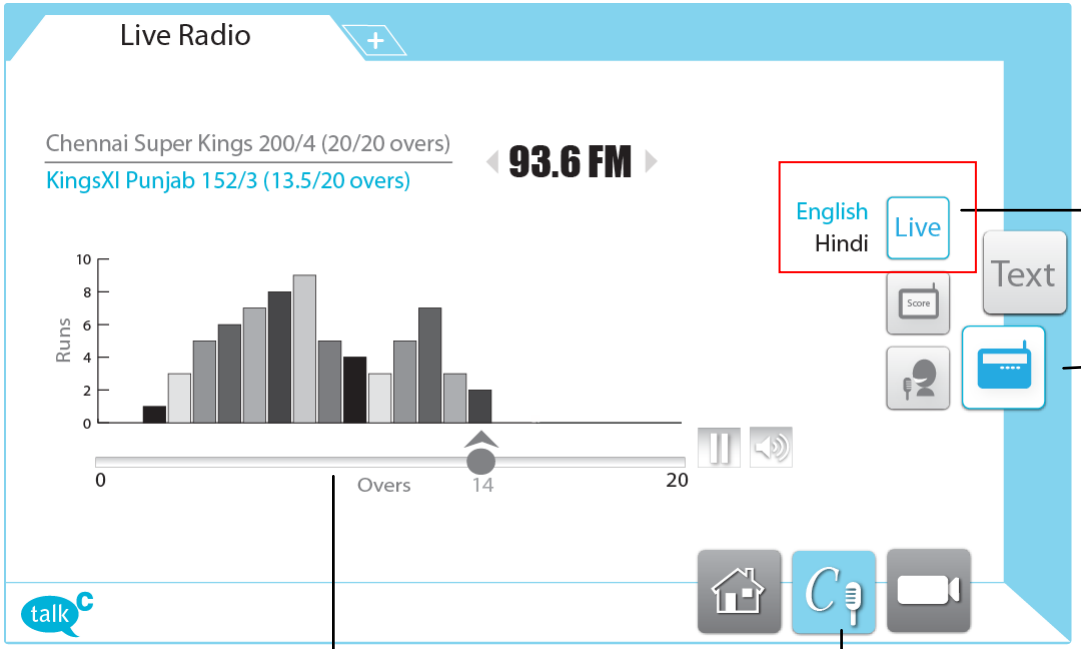


Figure 32: Live commentary of Radio

Final Concept | Scenario-2

Screen 2

Scenario 2

User X

On the move

Interesting radio options

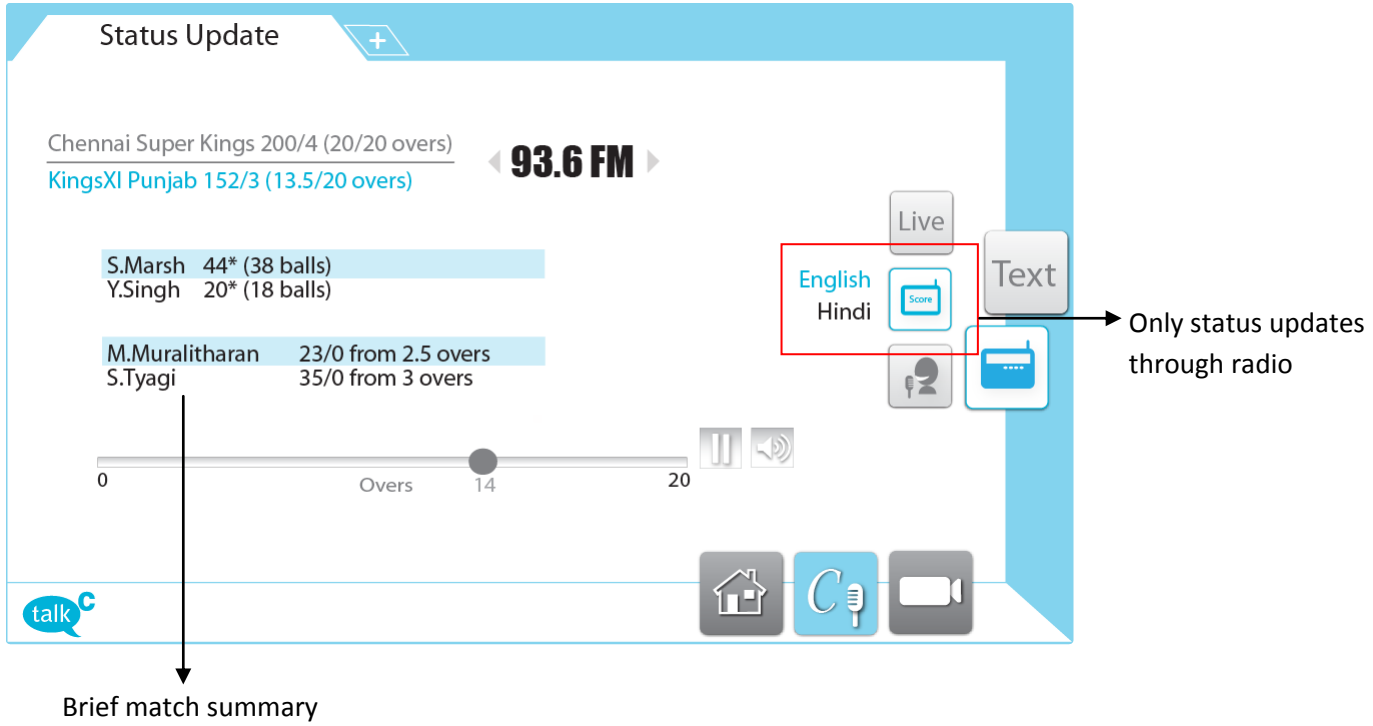


Figure 33: Status updates through radio

Final Concept | Scenario-2

Screen 3

Scenario 2

User X

On the move

Interesting radio options

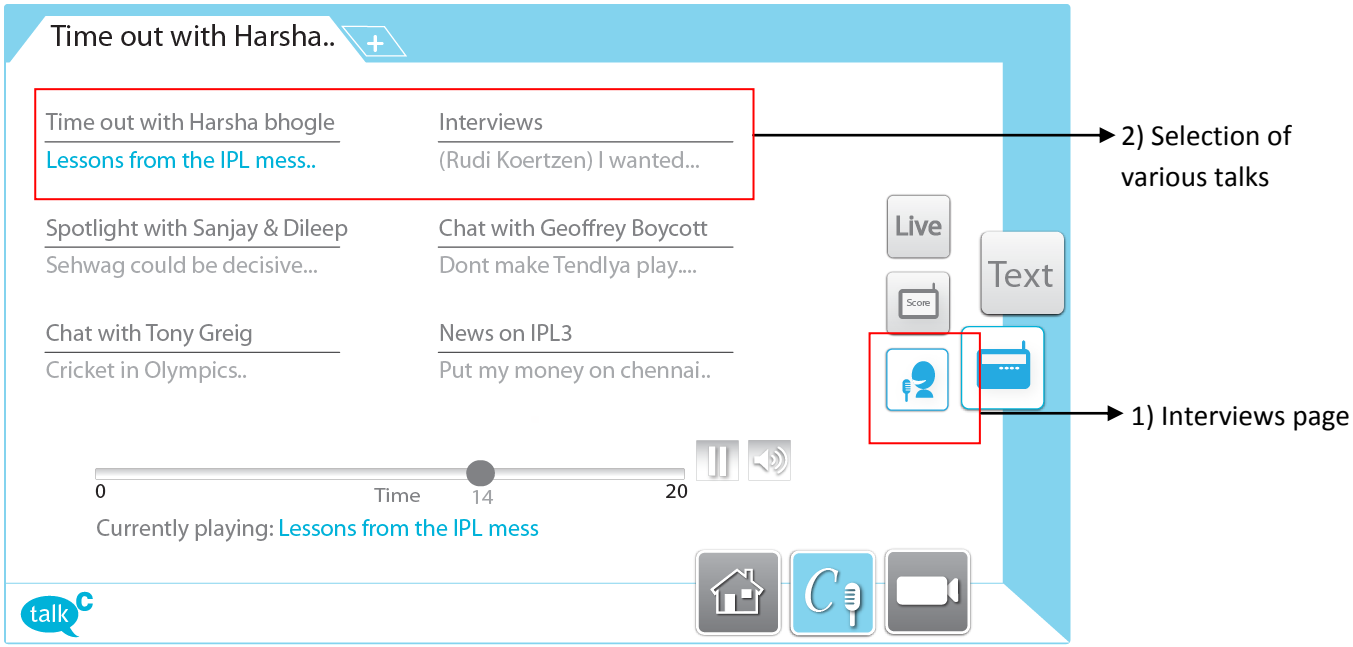
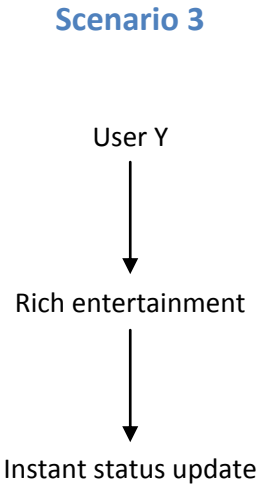


Figure 34: Interviews and talks page



Final Concept

Scenario: 3

User Y is a college going youth, and is an ardent follower of Kings XI Punjab. He boasts of his new application to his friends, that he came to know about from user X, which he has installed in his mobile PDA.

He starts off by switching to video mode of his application, which live streams the current ongoing IPL match. He explains how the simple application gives him rich information with ease.

He ends the demo session by setting up his status message via instant tweeting, which gets updated even on web.

Final Concept | Scenario-3

Figure 35: Video mode

Final Concept | Scenario-3

Scenario 3

User Y

↓

Rich entertainment

↓

Instant status update

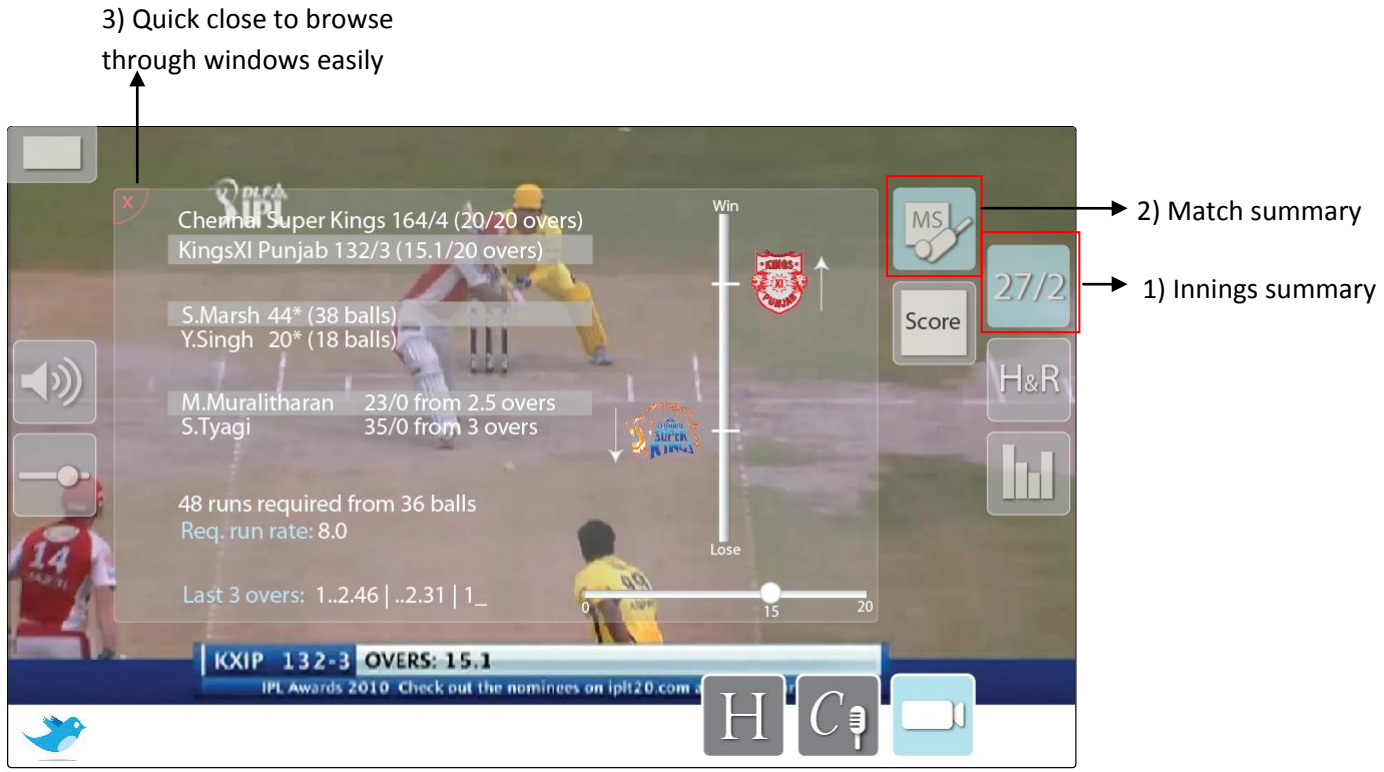


Figure 36: Innings summary

Final Concept | Scenario-3

Scenario 3

User Y

↓

Rich entertainment

↓

Instant status update

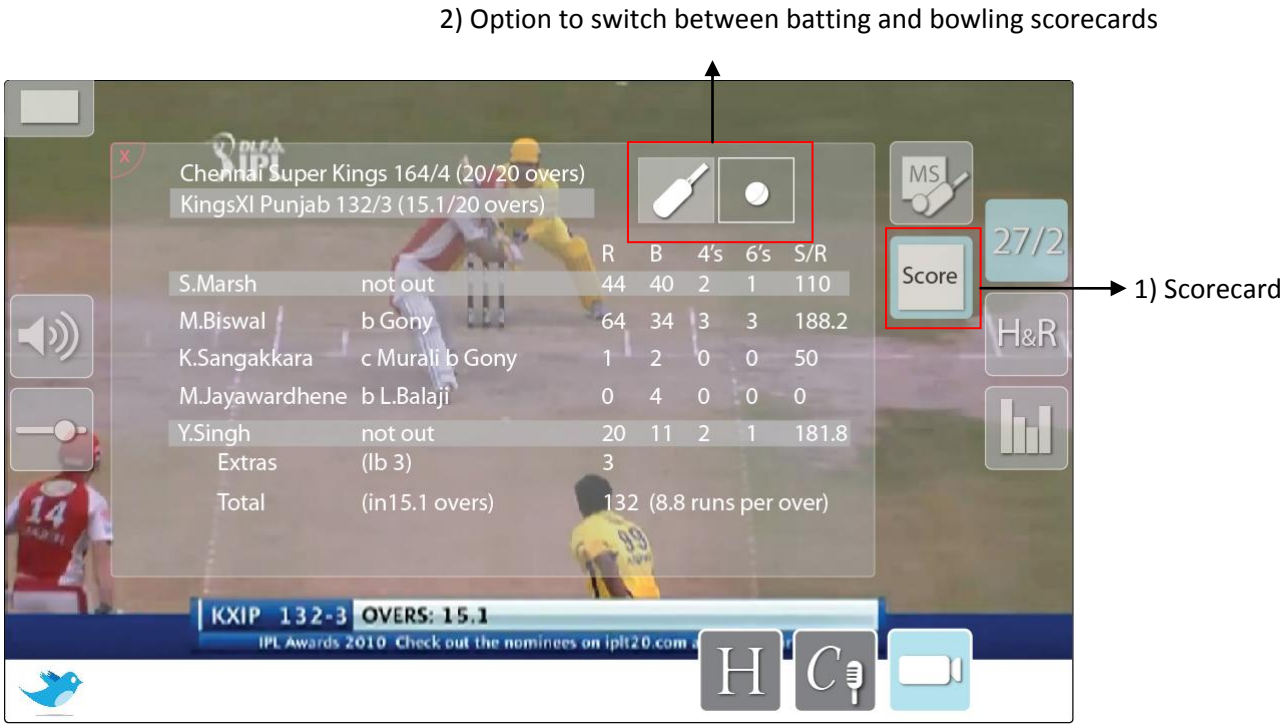


Figure 37: Scorecards

Final Concept | Scenario-3

Scenario 3

User Y

Rich entertainment

Instant status update

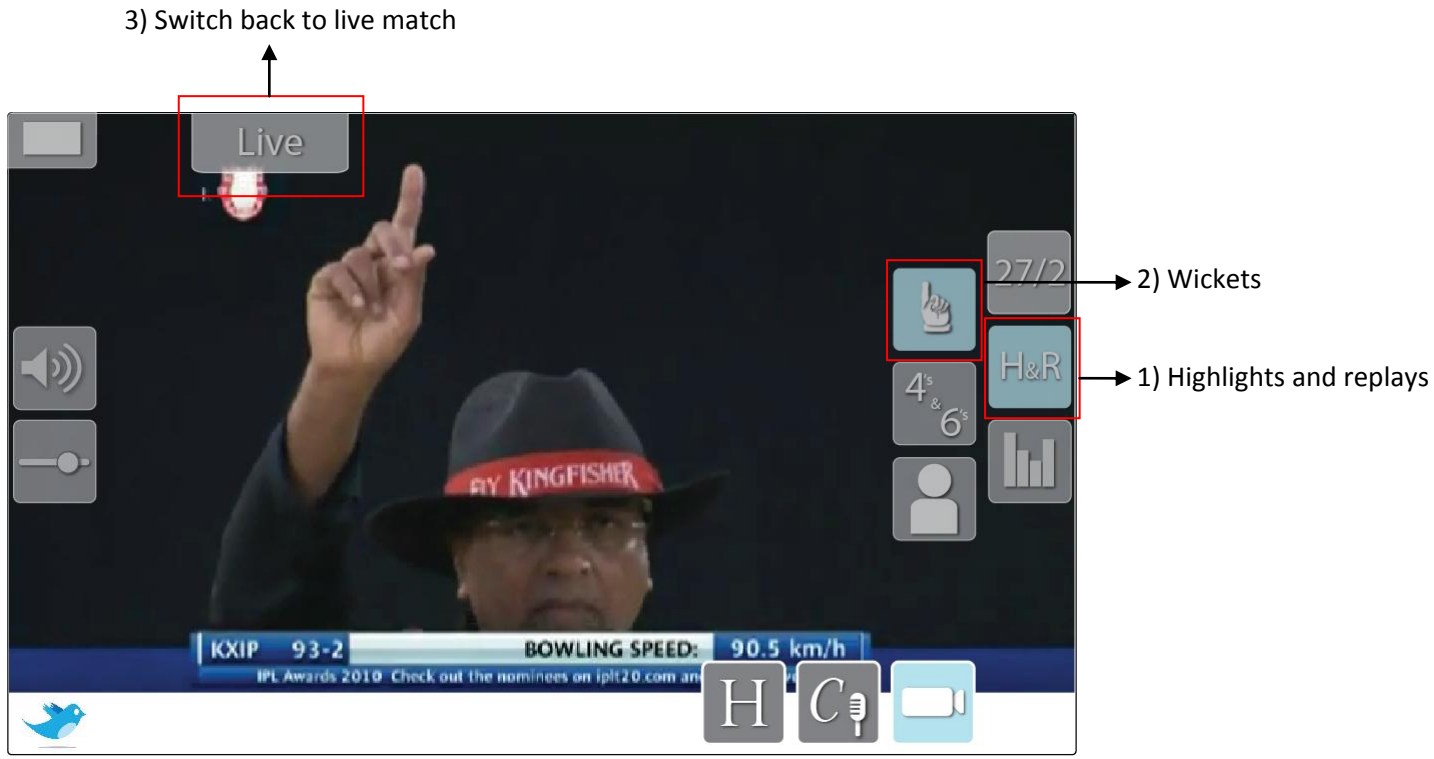


Figure 38: Wickets highlights

Final Concept | Scenario-3

Scenario 3

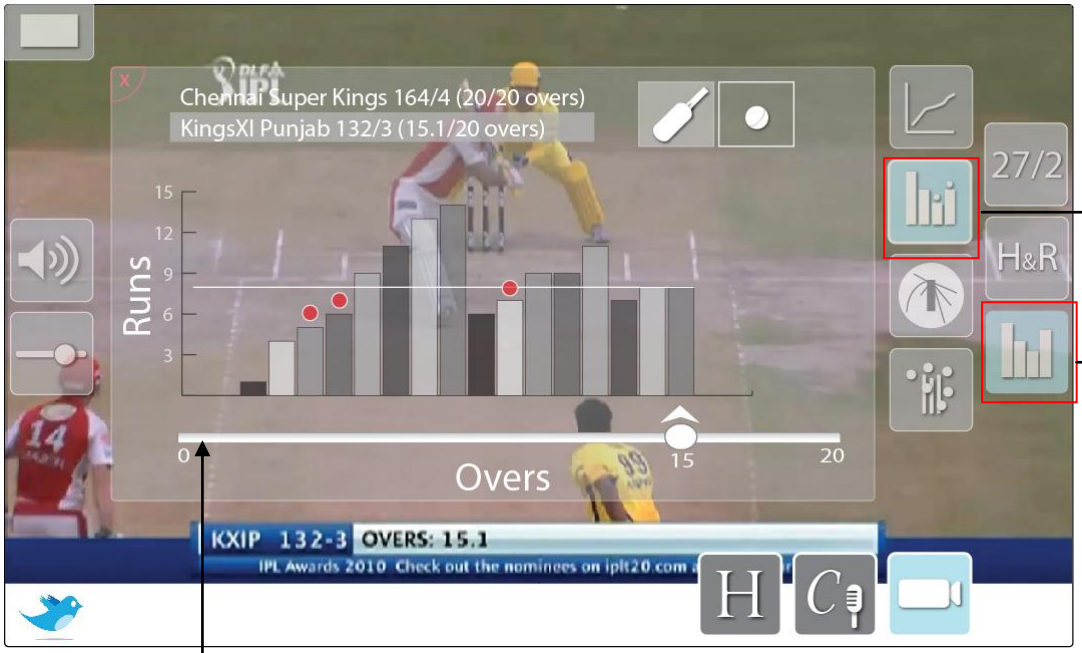
User Y

↓

Rich entertainment

↓

Instant status update



2) Manhattan

1) Match analysis

Seek video through overs, having a glance at match analysis a well

Figure 39: Manhattan (Match analysis mode)

Final Concept | Scenario-3

Clear screen mode:

Allows viewer to watch the match without any distraction

Scenario 3

User Y

↓

Rich entertainment

↓

Instant status update

Figure 40: Clear screen mode

Final Concept | Scenario-3

Instant Tweet mode:

Allows viewer to instantly update his status via the mobile keyboard

Figure 41: Instant Tweet

Scenario 3

User Y

↓

Rich entertainment

↓

Instant status update

8. Future Works

1. An actual model of the application can be developed and tested with its live streaming capabilities

2. There can be an online version of the same application which allows users to make their profile in office and also interact through their mobile phones.

9. References

1. **Pablo Cesar, Dick C.A. Bulterman, and A.J. Jansen.** *The Ambulant Annotator:Empowering Viewer-Side Enrichment of Multimedia Content.* Amsterdam : ACM, 2006.

2. **Daft, R.L. and Lengel, R.H.** *Information richness: a new approach to managerial behavior and organizational design.* Homewood, IL : JAI Press, 1984.

3. **Chakraborty, Swarup.** IPL begins innings abroad with a bang. *business-standard.* [Online] April 8, 2010. [Cited: May 15, 2010.] http://www.business-standard.com/india/news/ipl-begins-innings-abroada-bang/391134/.

4. **Krishcricket.com.** T20 World Cup in West Indies. *Krishcricket website.* [Online] 2008. [Cited: may 22, 2010.] http://www.krishcricket.com.

5. **IANS.** India has more cell phones than toilets: UN . *sify* . [Online] April 15, 2010. [Cited: May 10, 2010.] http://sify.com/news.

6. **Monarch Project & Finmarkets Ltd.** *Telecom Q409 Review.* Mumbai : Monarch Project & Finmarkets Ltd, 2009.

7. **Vijayaragavan, T.** *India's Telecom Industry: An Overview.* Coimbatore : PSG College of Technology, 2009.

8. *What's Interesting About Cricket? -On Thresholds and.* **Roddick, John and Rice, Sally.** 1, Adelaide : SIGKDD Explorations., 2001, Vol. III.

9. **Eldridge, John.** *Cricket, lovely cricket; a summer digression.* London : Fifth Estate Online, 2010.

10. **Krishcricket.com.** Series. *Krishcricket website.* [Online] [Cited: May 21, 2010.] http://ww.Krishcricket.com.

11. **Cricinfo.** India tour of Bangladesh. *cricinfo.* [Online] [Cited: February 21, 2010.] http://www.cricinfo.com.

12. **MLB.** Mobile App. *MLB.* [Online] [Cited: January 30, 2010.] http://www.mlb.com.