

September 2005

R-EVOLUTION

Newsletter for the Developer Community

For Private Circulation only

Editorial

Dear Developers

Mobile Phones with colour screens, internet data connection, FM radios, MP3 players, media players, digital cameras and entertainment content are now available at increasingly affordable prices. With these smart devices in the hands of mobile subscribers, and their increasing appetite to consume data services, provide huge opportunity for branded content providers and application developers to develop innovative content, applications and the opportunity to monetize content and applications. Our Lead Story in this issue provides insights into mobile entertainment space and potential areas where mobile application developers could seize monetization opportunities.

We are bringing you an exclusive interview with Vishal Gondal, CEO of a very successful mobile gaming company, Indiagames.

In our "Application of the Month" section, we walk you through a snapshot on Garfield, a sleek cartoon based game from Indiagames, which is now available for RIM customers through R World.

As part of our endeavor to equip developers with performance enhancement tools, we have provided tips on how to do caching data on the server side.

As always, we look forward to receiving your valuable suggestions and useful feedback.

- S P Narayanan



Tech Tip

Dynamic Server Side Caching



Applications of the Month

Garfield on your mobile



Interview of the Month

Vishal Gondal
Indiagames



Quiz

Mobile entertainment at your finger tips

Entertainment to the fore

As mobile users exponentially grow in the Indian market and data usage sees rapid adoption among all segments of mobile consumers, operators, handset manufacturers and mobile developers see a multitude of opportunities to capitalize on. With Indians eager to consume more and more of entertainment related stuff of every hue, it is clearly the entertainment applications/services that is HOT and a clear revenue ringer.

As per a study released by Strategy Analytics, mobile entertainment constituted 25% of around \$61 billion mobile data revenues in the year 2004 and is predicted to go up to 36% of the projected \$189 million revenues from mobile data by the year 2009. The main services contributing to this staggering mobile entertainment business will be games, music, ringtones and sports.

What's leading up to the rapid adoption of mobile entertainment services is the advancement in technology, state-of-the-art-networks, cutting edge software and multifunctional handsets. Mobile phones now come with color screens, data connections, FM radios, MP3 players, MPEG4 video players, digital cameras which facilitate delivery and fuel rapid adoption of entertainment content.

Range of services

The rapid proliferation of messaging applications, from the normal SMS to multimedia messages and other picture/image based services within the peer to peer community and the steadily growing popularity of games with specialization of content like multiplayer and 3D genres are expected to dominate mobile entertainment space in the coming days.

Mobile music has also caught up in the advanced markets like Japan, Europe and Korea. It has a tremendous potential to generate immense revenues for operators and content providers. Mobile music has already surpassed music singles sales in the UK. There is also a huge opportunity in related areas like polyphonic ringtones and the development of streaming audio.

Another service, which is widely touted to enrich the mobile entertainment experience considerably, is mobile video. Users have already sampled this service via the MMS route and users can now even view full video trailers through advanced networks. However for most operators it is still

time before high quality video content or television channels can be made available on mobile phones.

Mobile Adult services too have been launched in certain countries with mixed results in terms of contribution of only around 5% revenues of the overall entertainment revenue cake. Analysts, however, predict that the demand for such services will only go up in the days to come even as they battle a slew of regulatory issues. Mobile gambling too has to grapple with such similar regulatory issues more so because mobile phone usage is now all-pervasive among all classes of users including under aged kids.

Not to be left out of this fast growing market to drive more revenues, operators, handset manufacturers and publishers/aggregators are going all the way to create compelling entertainment content. Even television channels have started setting up departments for commissioning select TV programmes for mobiles.

Media and content companies have been quick to leverage on this opportunity given their traditional superiority in generating exciting content. For example, Washingtonpost.Newsweek Interactive (publisher of Washingtonpost.com) has signed up with a company to launch its mobile content offering which lets readers send optimized search results for the Entertainment Guide's shopping, dining and event listings to their mobile phones via a new 'send to a phone option' and a mobile photo contest, where readers have the opportunity to send or upload their favorite mobile phone snapshots of community events, and online readers will be able to vote on their favorite submissions. The tremendous opportunities currently available in the mobile space thanks to the progress of technologies like WAP, SMS and advanced networks are proving to be the key drivers for rapid proliferation of these services.

Developers are making the most of the new revenue stream by developing products - games, wallpapers, ringtones, comics etc - after buying out rights / licensing of branded content like famous cartoon characters and movies. A case in point is a service offered in Japan where mobile users can view the popular Japanese 'Manga' comics on their cell phones. It has become a big business with Sony Pictures Entertainment tripling the number of comic book it formats for viewing on mobiles. Japanese users pay 315 yen (\$2.90) to download five manga titles a month by an artist of their choice. Interestingly, the cell-phone comic service is based on a technology called

Comic surfing developed by a company that takes viewers through the manga stories at a very carefully calculated speed and sequence.

RIM's entertainment offerings

Reliance Infocomm is much ahead of competition in providing entertainment services to its growing number of subscribers. The entertainment category of services under R World suite of data offerings of RIM packs in quite a punch in terms of the wide array of rich applications available to users. Right from MMS to animated greetings, mobile comics to games, video clips to film trailers, and TV promos to ringtones the content range is arguably the best available to mobile users in the country both in terms of the choice and the cost for using the services. Besides R World, users can also access a host of entertainment services via SMS route as Reliance has already established business alliances with reputed third party content providers in the country for premium content. RIM users (of a particular handset) can now even watch live video news of a popular news channel on their handsets.

"Mobile users always need to entertain themselves and from time to time offering entertainment services on mobile is a challenge to match all the users' expectations. We have seen a steady growth trend across various mobile markets around the world be it be Wallpapers, Games, Animations etc.



Mayank Thakkar

In the same lines, our aim is to deliver a wide range of Fun based services on R world and give users a whole new way of entertainment value. Presently, the range of content-based services offered on R world include Musical Animations based on theme like Love Bole Toh, Flimi, Cricket, etc. and also Games like Cric game, Car racing, Bowling etc to Mobile Comics like Hum Tum , Chacha Choudhary, Pinki, etc. From time to time, our focus is in adding new services and content, enabling R world

as one of the best mode of Entertainment," says Mayank Thakkar, Business Head, Entertainment, ASG, RIC at DAKC.

Future of mobile entertainment

Innovation, customization and differentiation seem to be the key to success as mobile entertainment players eye the next big wave in the evolution of mobile data business. From services that allow users to mix and create their own ringtone using different melodies, voices, sound effects etc online and sent it to their phones to movie quote ringtones, it seems one can only be limited by his/her imagination as far as services in this space go. According to a report published by Juniper Networks, a rapid expansion in mobile content, allied to a sharp increase in advanced networks and handset adoption, will combine to deliver global mobile entertainment revenues of more than US\$59 billion by 2009. Other findings from their report predict that besides gambling (33%) and games (31%) the most popular entertainment services in 2009 will be music (16%) and sports (8%). Ringtones which currently account for 31% of the mobile entertainment market will contribute no more than 8% by 2009.

As far as delivering video content over mobile phones is concerned, it still seems a far cry with technology issues to be settled before full-fledged broadcast services to mobile users can be offered.

Mobile Entertainment is surely evolving as the perfect community-bonding tool by allowing people to have fun and entertainment while on the move and by communicating with other users (community) or with the provider. It will not be long before the ubiquitous mobile phone enable people to listen to their favorite music, watch movies, or catch all the sports action live while on the go. Mobile phones which initially started as a serious medium of communication are now becoming providers and purveyors of great entertainment.



Dynamic Server Side Caching

In order to enable faster retrieval of requested data, Servers use a mechanism called caching. Frequently accessed data may be stored (cached) for a desired period of time so that they can be quickly accessed during each request. For each request the server receives, it checks its cache for the availability of the requested data. If the requested data is present in the cache, it simply returns with that data and speeds up the response. If not, the server performs a series of operations to collect the requested data and respond to the client.

This caching is dynamic because the change in data stored in the database is reflected back without restarting the server. The maximum size of the cache is about 100 KB.

The following Class demonstrates this concept and acts as a Cache that stores information of all employees (IDs, Names and Department). All this information is retrieved at the time of Servlet initialization. The Employee Data is updated as per the Refresh time mentioned in the .properties file

The loadMainMenu method in Cache class loads the contents of EMP table into a Hashtable. Each employee will have a record in the Hashtable. Each EMPID will map to a vector having all the rows corresponding to that employee in the EMP table. In this method, a Database Connector object is created for establishing a Database connection. A query is executed to retrieve employee details from the database and store them in a HashTable.

The following piece of code performs the function of caching the data.

```
import java.io.*;
import java.util.*;
import java.sql.*;
import org.apache.log4j.*;

public class Cache
{
    /* Creates a Hashtable Object. This Object stores the data retrieved from the database */
    static Hashtable EMP_HashTable = null;

    public Cache() // Default Constructor. Initialize the HashTable Object
    {
        EMP_HashTable = new Hashtable(); // Employee Hashtable
    }

    public void loadMainMenu() throws Exception
    {
        DataBaseConnector dbCon = null;
        ResultSet rs = null;
        //perform data base operation and populate the Employee Hashtable with the data
    } // method loadMainMenu () Ends
} // End of Class Cache
```

The following piece of code explains how to refresh the cache periodically. This code should be incorporated into the controller servlet of your application

The RefreshCache Class acts as a TimerTask for caching Static, Semi-Dynamic or Dynamic information from database common across all users

```
public class AppNameServlet extends HttpServlet
{
    public void init(ServletConfig config) throws ServletException {
        // write your code....
        String refreshTime = // cache refresh time in minutes

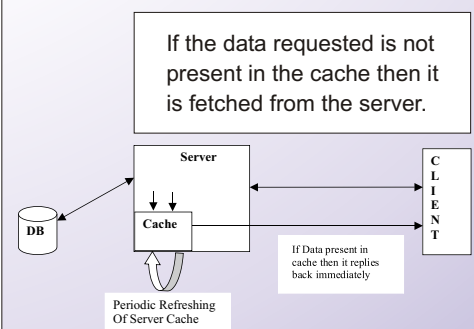
        // write between try catch block
        timer = new Timer(true); //Timer object is created
        //Timer is scheduled for Refreshing the Cache
        timer.scheduleAtFixedRate(new RefreshCache(),
            0, 1000*60*Integer.parseInt( refreshTime));
    }
    //--- write your code for servlet body...

    protected void processRequest(HttpServletRequest request, HttpServletResponse response)
    {
        // Process the request received from the client. }

        public class RefreshCache extends TimerTask
        {
            /** Creates a Cache Object. This Object Caches the Common Employee data */
            Cache cache = new Cache();

            /** This is a thread running continuously for retrieving common employee data from the database
            at the specified intervals by using loadMainMenu() of Cache Object */

            public void run()
            {
                // write between try catch block
                long startTime = System.currentTimeMillis();
                cache.loadMainMenu();
                long endTime = System.currentTimeMillis();
            }
        } // End of RefreshCache class
    } // End of Cache class
```



For any further clarification, please write to dadp.newsletter@relianceinfo.com.

Garfield on your mobile



From popular comic strip to Hollywood movie, Garfield, the most recognizable and feisty cat, created by cartoonist Jim Davis, now comes to your mobile handset on R World.



You can soon play 'Garfield in Dreamland' on your mobile handset under the Indiagames' licensed title. A character

master keeps the occasional and hardcore gamer equally hooked to it.

Twenty huge and carefully crafted levels of excitement and lots of fun provide good value for money. Garfield in Dreamland sharpens the visio-mathematical abilities to predict the outcome of a jump with specific power and angle. It is an edge-of-the-seat game, which ensures total involvement and is extremely addictive, not only for kids and teens, but men and women of all ages. All on one screen, Garfield is a fun, casual platform game. Easy to learn but not so easy to master, Garfield is a mobile game that one would want to play again and again. The good quality of the game and the exciting graphics ensure satisfaction and good playability.

The high points of Garfield in Dreamland is that it is innovative till the end, excellent graphics which add to the fun and is a linear game play yet infinite possibilities. It is a



that is loved by millions across the world and is a kind of a celebrity, Garfield appeals to all ages. In this mobile game, one can play as Garfield in Dreamland, jumping across complicated and tricky platforms to win the ultimate reward - food!! Eye candy graphics that compliment the original, simplified cartoon series adorn the visuals for the game. A great variety in platforms, goodies and enemies, makes the player crave for more. Curiosity didn't kill the cat this time!! A very small learning curve yet extremely tough to

totally new game play which gives you almost turn based feel to the game makes it a more of an intellectual entertainer than mere click fest. Different age groups can enjoy the game just as well, owing to different response times. It sharpens one's prediction faculties by making use of the visual-mathematics. The game that sports the easiest of controls and easy save options allow the player to continue from where the player left off. All this excitement only on Garfield in Dreamland on your mobile handset!!

We closely work with Reliance on increasing the games market through branded content, promotions, exclusive content and specials.

Vishal Gondal, CEO of Indiagames started programming algorithms at the age of fourteen, an age at which most kids were trying to figure out how to solve them. At sixteen, soon after finishing his schooling, Vishal started his own company, FACT. During his college days, Vishal, was a Rank holder of the National Computer Problem Solving Contest in 'C' programming. A keen sportsman, he played volleyball at the state and national levels. He founded Indiagames in 1999 and has grown it from a five man team to a global operation with over 170 employees. Vishal has worked with major Hollywood studios, games publishers, handsets manufacturers, technology companies, wireless operators, media entertainment companies and is instrumental in starting and growing the Gaming Industry in India. He heads the Mumbai Chapter of the International Game Developers Association. In the interview of the month, R-evolution speaks to Vishal Gondal.



Vishal Gondal

CEO of Indiagames

Can you tell us something about Indiagames and Reliance Infocomm's partnership?

Indiagames is working closely with Reliance to provide branded high quality games compatible on all B/W and color handsets and will be developing the content especially for all Reliance handsets. Our main focus will be to provide our top selling genres like Cricket, Racing and Action based games. We closely work with Reliance on increasing the games market through branded content, promotions, exclusive content and specials.

Which are the areas you are currently working in with Reliance Infocomm?

We are currently working with Reliance on the games portfolio; we will be starting shortly on SMS shortcode distribution, both gaming and non-gaming.

What applications/games are you developing for R-World? How are these applications / games unique? Any special features?

Our main focus for Reliance will be developing branded content and cricket. On branded content, we will be developing games on Batman, Jurassic Park, Bruce Lee, Phantom, Godzilla, Scorpion king, Buffy the Vampire, Harry Potter and others. These will be unique to R-World, as they will be among first branded content based on Hollywood available for R-World. Apart from this we will work with Reliance on subscription, pay per play model and multiplayer games.

Any interesting learning or any memorable event related to mobile games development that you would like to share with the readers?

Very often, game creators build assumptions about the

playability of their games, as well as about what the end-user will like or will not like. To avoid such situations, at Indiagames we regularly hold gaming sessions (focus groups) where we call in gamers from (typical end-users) and observe them play, take their feedback, and incorporate it into the game. We also look at what games are more liked by the end users and develop more and better quality of such games, thus giving better content for the users. These sessions have given us some really unique insights on the behavior of people with regard to mobile games. The most important insight was that people prefer games which use limited number of keys and are less 'complicated'. People love to see their favorite heroes featuring in mobile games. Our games like Spider-Man, Munnabhai MMBS, etc. have proved to be greatly successful for the same reasons!

What are your views on the mobile gaming business in India/ abroad? What is the future trend of gaming applications and customer behavior?

The mobile gaming industry in India is in its adolescence, having started growing rapidly over the past two years. We find people increasingly spending more time and money on mobile games. A recent set of interviews have brought to light that a lot of the people who download games are not only the cosmopolitan and urban, but are from the interiors of the country. Simple, ordinary people also like to download as many games as any city slicker.

Indiagames being a major international player and having experience in the global market, it is evident that the Indian mobile gaming market is heading towards a level, comparable to the markets abroad, in terms of quality and content of games offered. Indiagames finds the current Indian market mature enough to release any of our premium global launches like Jurassic Park, Godzilla, Phantom and others.

Dear Sir/ Madam:

Being new to Reliance Infocomm, I have not been aware of such a newsletter. But today when I received this mail, I was simply bowled over. Being a Java programmer, I am fascinated by such an initiative by Reliance Infocomm. My hearty congratulations and sincere thanks for bringing latest of the technologies right on my PC.

Wouldn't it better if you could also add a column for discussing issues that concern the developer community? For e.g. A bug that created problems during the development and how it was removed. This will substantially benefit all concerned.

Thanks and Warm Regards,

Arvind Radhakrishnen, New Delhi

Editor's Note: Thank you for your warm compliments. We do publish issues concerning developer community and will try to feature the problems mentioned by you in our future issue.

Quiz

- When a JSP page is compiled, what is it turned into?
 - Applet
 - Servlet
 - Application
 - Maillet
- If you want to override a JSP file's initialization method, within what type of tags must you declare the method?
 - <@ @>
 - <%@ %>
 - <% %>
 - <%! %>
- If a midlet needs to receive high-level events from the implementation, which interface should it implement?
 - Action Listener
 - Command Listener
 - Windows Listener
 - ChoiceListener
- The MIDP provides a mechanism for MIDlets to persistently store data in a platform-dependent file and retrieve it later. This mechanism is:
 - Object Serialization
 - JDBC
 - RMS
 - ODBC
- When downloading application descriptors (.jad files) from a web server, the web server must return a MIME type of:
 - text/vnd.sun.j2me.midp
 - text/vnd.sun.j2me.jad
 - text/vnd.sun.j2me.app-descriptor
 - text/vnd.sun.j2me.midapp

Answers : 1. b) 2. d) 3. b) 4. c) 5. c)

Monthly Poser

Harvard dropout **Bill Gates** and Seattle based **Paul Allen** founded **Microsoft** in 1975 and they coined the term '**Microsoft**' by combining which two words?

1. Micro (as in small) & Soft
2. Microcomputer & Software
3. Microwave & Soft
4. None of the above

Answer to last month's poser: Personal Computer

Winner of the last month's poser (through a lucky draw) is: Ms. Phalguni Parikh, Mumbai
Winner will receive the prize by courier.

Answers to the Monthly Poser should be sent to dadp.newsletter@relianceinfo.com mentioning Monthly Poser - September 2005 as the subject with the sender's location stated. The winner will be decided on the basis of a lucky draw and walk away with a prize.

You can contribute ideas and information to R-evolution at the following e-mail address: dadp.newsletter@relianceinfo.com.

Please note that contributions may be edited for clarity, style or length.

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