

# R-Shared: A Collaborative Platform for R Code Development and Sharing

8<sup>th</sup> March 2011



# Agenda

- Overview
- Projects that Inspired ...
  - ModSpace
  - Commercial R Support
- Introducing LondonR Ltd!
- The R-Shared Platform
- Summary
- Questions

# Overview

# Overview

- More teams starting to use R in commercial situations
  - How do these people communicate?
  - Central knowledge sharing
- IT teams needing to work with R:
  - Improve performing with use of hardware
  - Control R versions and packages

# Overview

- R used for more and more vital decisions
  - More focus on validation/verification
  - Code control and versioning
- Support framework needed as user base increases
  - R-Help fantastic but not commercial focus
  - Commercial training & support becoming more important

# Overview

- Today I will present Mango's "R-Shared" platform
- Builds on other Mango projects
- A "concept" at this stage

# Projects that Inspired ...





## ModSpace

- Built for Novartis, but owned by Mango
- Knowledge Management system that:
  - Understands the difference between “code” and other files (e.g. documents)
  - Backed by version control system
  - Uses the high performance “Lucene” search
- Used heavily at Mango







## Bookmarks


-  *Unpublished Items (1)*
  -  Mango "Introduction to R" Training Course
- +  My Entries
- +  My Groups

## News | Reminders(1) | Dashboard

 [New entry : Automated R installation script for Linux](#)  
Installs R 2.10 and pre-requisites for rjava, and all required packages for PME 2.4.

step-07-04.sh installs R  
step-07-06.sh installs all R libraries  
*R installation scripts used in PME, installs R and R packages.*  
*Mike Creed, 08-Mar-11 12:08PM*

 [New entry : Logging Module for Bash Installation](#)  
A modular script that provides logging functionality, which can be included in bash scripts to provide the following:  
- api for creating logs: DEBUG, INFO, ERROR, FATAL  
- Termination of a proce...  
*Useful logging script for bash installation script - writes to console and log file, displays errors in colour.*  
*Mike Creed, 08-Mar-11 12:03PM*

 [New entry : NONMEM 6 and 7 installation scripts](#)  
Installation scripts used by PME to automate the installation of NONMEM 6 and 7. These are modular scripts that can be called with parameters to determine default and custom sizes.

The PME install...

Modspace

[Advanced Search](#)

### Search Categories

- + Element Type
- + Libraries
- + Owner
- Author
  - Richard Pugh(56)**
  - Francisco Gochez(3)
  - Alexander Patt(2)
  - Chris Campbell(2)
  - Danielle Wang(2)
  - more ▾
- + Name
- + Content
- + Added Date

### Search Results

Results 1 - 10 of 56 for boxplot

	Name	Last Modified	Score ▾
	<b>Forest Research R Training 2010</b> <a href="#">Chapter 04 - Producing Graphics.doc</a> Richard Pugh	03 Jun 2010	3%
	<b>ACOP Graphic Scripts</b> <a href="#">newBoxplotFunction.R</a> Richard Pugh	16 Feb 2011	2%
	<b>R for Actuaries</b> <a href="#">6.TraditionalGraphics.doc</a> Richard Pugh	20 Feb 2011	2%
	<b>Pfizer 5 Day S-PLUS Training 2004</b> <a href="#">Chapter8.doc</a> Richard Pugh	29 Jun 2010	2%
	<b>Pfizer 5 Day S-PLUS Training 2004</b> <a href="#">Tip Sheet.doc</a> Richard Pugh	29 Jun 2010	1%
	<b>Abbott Intermediate S-PLUS Training 2007</b> <a href="#">Tip Sheet.doc</a> Richard Pugh	29 Jun 2010	1%
	<b>GSK Webinars for S and R (2008 - 2010)</b>		



Search bar with a dropdown menu set to 'Modspace', a 'Search' button, and a link to 'Advanced Search'.

Utility bar containing icons for 'Switch To Edit View', 'Download', 'Bookmark', 'Group', and 'Feedback'.





Entry Contents sidebar showing a folder icon and a list of files: 'Useful R functions', 'mango\_theme.R', 'memory\_size.R', and 'speeds.R'.

Main content area with tabs for 'Overview', 'Related', and 'History'. The 'Overview' tab is active, displaying a metadata table for the entry 'Useful R functions'.

<b>Name</b>	Useful R functions
<b>Author</b>	Chris Campbell
<b>Description</b>	R memory management seems to be quite good. However, code should be created to make best use of RAM. This function shows the time cost of stretching (cbinding to) a vector rather than populating a planned matrix.  This entry now also includes a Mango branded lattice theme and relative speeds of apply, ifelse, factors and subsetting
<b>Assumptions</b>	R
<b>Projects</b>	Not applicable
<b>Keywords</b>	R, memory, lattice
<b>Language</b>	S, R

Modspace Search [Advanced Search](#)
 [Switch To Edit View](#)
 Download
  Bookmark
  Group
  Feedback

### Entry Contents

-  Useful R functions
  -  mango\_theme.R
  -  memory\_size.R
  -  speeds.R

[Overview](#) [File Preview](#) [History](#)

```
mango.theme <- function(safe = FALSE) {
  mango.palette <- matrix(c(
    c("#F99B0C", "#E8112D", "#00A3DD",
      "#D36BC6", "#C49977", "#00C993"),
    c("#FF9900", "#CC0000", "#0099FF",
      "#996699", "#CC9966", "#66CC99")),
    ncol = 2, dimnames = list(c("Solutions", "CRM", "Finance",
      "Pharma", "Sensory", "Energy"), c("True", "Safe")))
  # define Mango colours
  column <- 1
  if(safe) {column <- 2}
  # toggle true or browser supported colours
  mango.hsv <- rgb2hsv(col2rgb(mango.palette[1:6, column]))
  mango.hsv[2, ] <- 0.3
  mango.light <- hsv(h = mango.hsv[1, ], s = mango.hsv[2, ],
    v = mango.hsv[3, ])
  # create vector of lightened colours
  # saturated colours influence perception of data

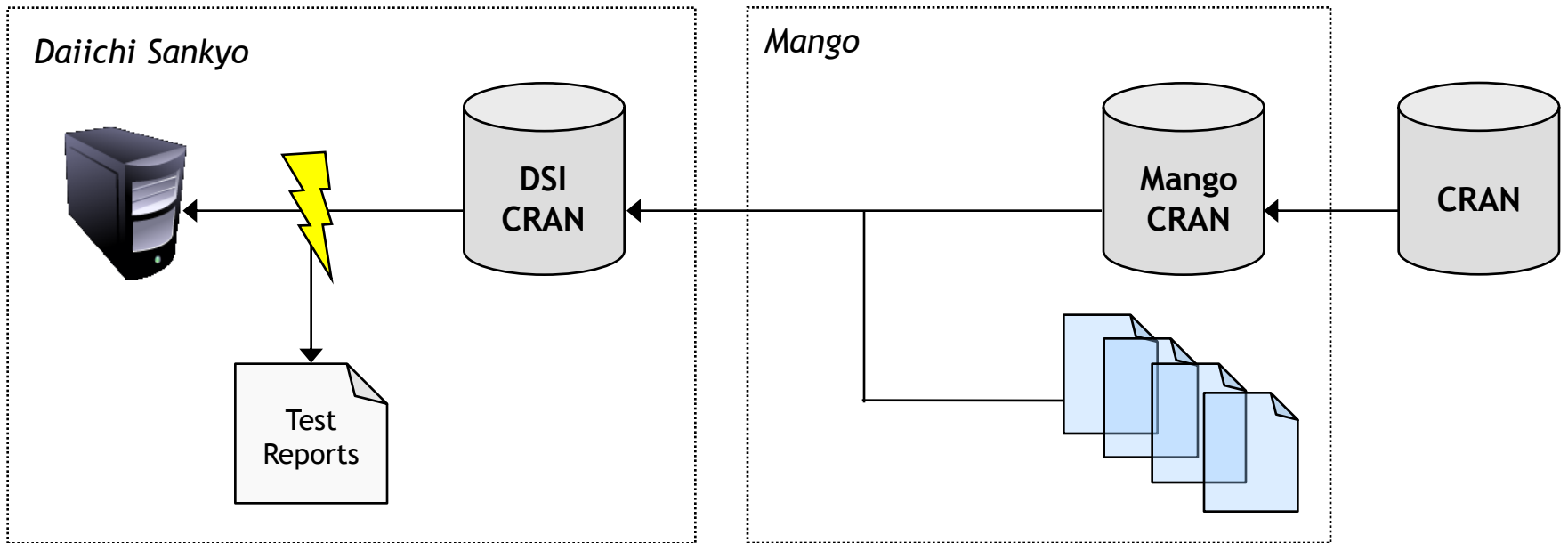
  par <- col.whitebg()

  # show.settings() row 1
  par$superpose.symbol$col <- mango.palette[c(6:1, 6), column]
  par$superpose.line$lty <- rep(1, 7)
  par$superpose.line$col <- mango.palette[c(6:1, 6), column]
  par$strip.border$col <- "black"
```

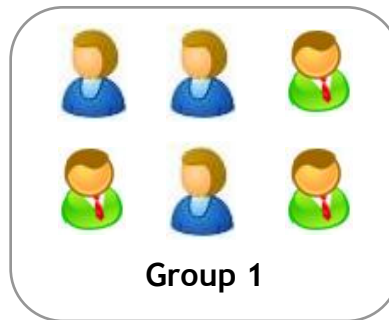
## Daiichi Sankyo

- Ongoing Commercial R Support
- Provision of “validated” R build
- Optimisation of R performance
- Performance of regression testing to provide evidence of verification

# Daiichi Sankyo



# Introducing LondonR Ltd



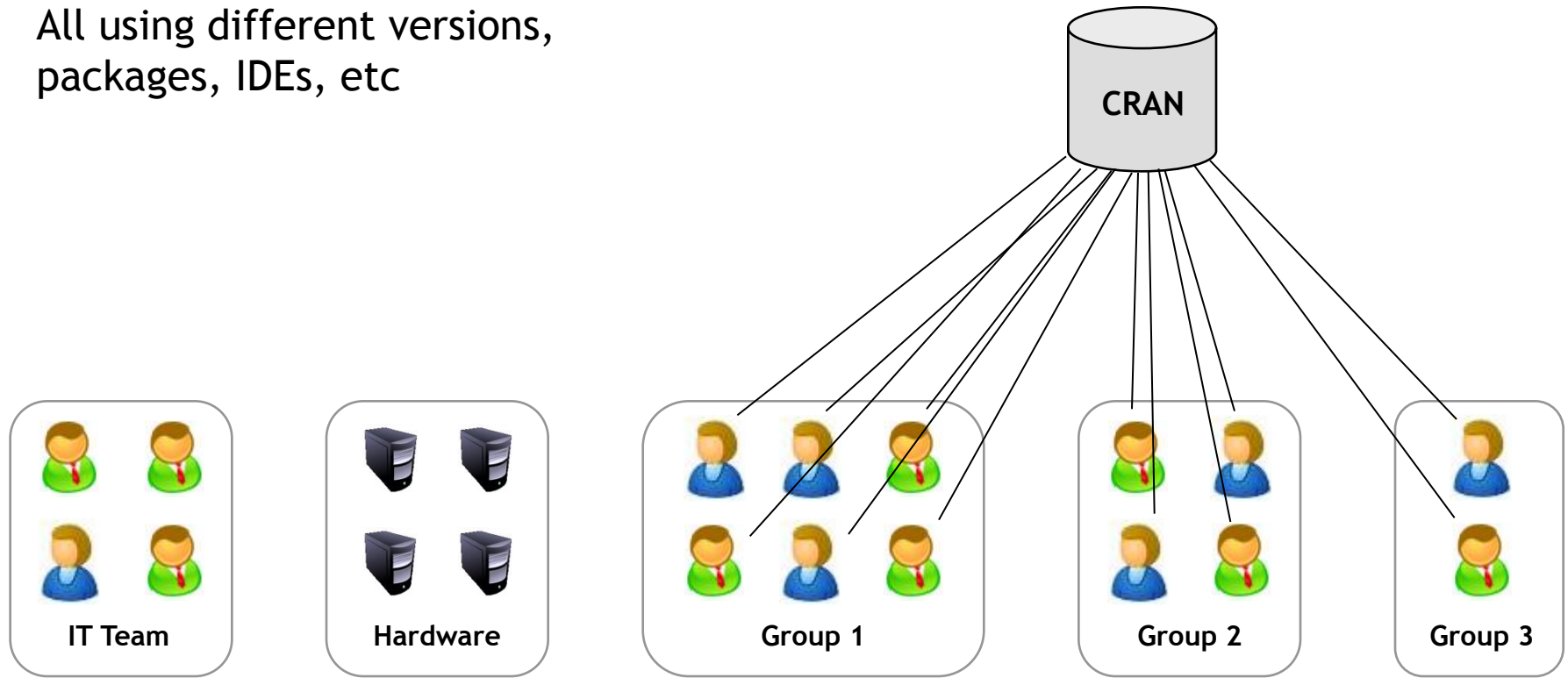
## R User Community at LondonR Ltd



## Where do they get R?

Most CRAN

All using different versions,  
packages, IDEs, etc

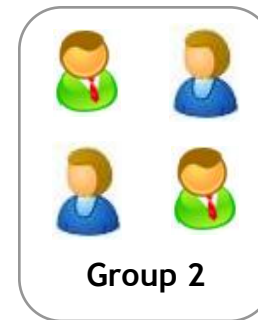
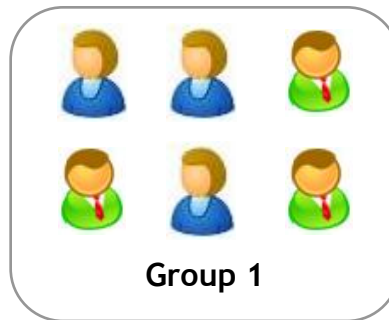


R User Community at LondonR Ltd

## Where did they get help?

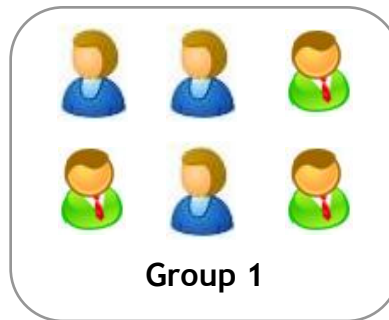
R-Help sometimes

Otherwise they ask each other



R User Community at LondonR Ltd

**How about that package that Bob wrote!**  
Sent around via email  
Code maintained on Bob's machine or R-Forge  
Everyone has different versions



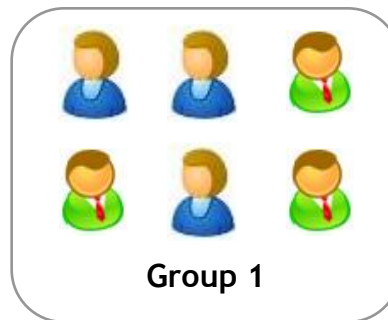
R User Community at LondonR Ltd

## Where do they get training?

Group 1 had a private training course from Mango

Someone from Group 2 went on a public course

Others are self taught



R User Community at LondonR Ltd

## Where is their code?

On their own machines mostly

Emailing of scripts

Server to put some code but somewhat disorganised



R User Community at LondonR Ltd

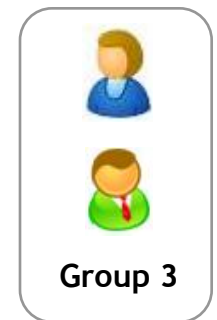
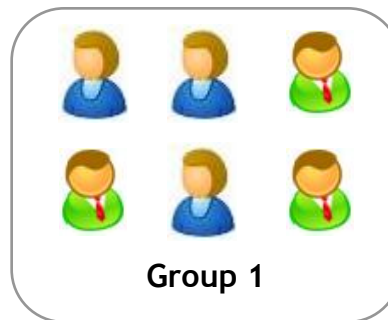
## How about some IT support?

IT team is excellent, but don't know R and are not analysts

R is open source, which adds concern

Worried about installing on central servers

They google for commercial support and don't find a lot ...



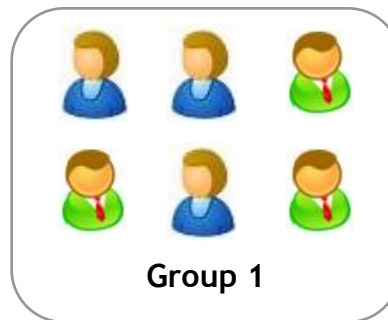
R User Community at LondonR Ltd

## How do the teams communicate?

They don't really (no-one even knows about Group 3)

Sometimes see questions on R-Help

Other potentially see them at LondonR or other events



R User Community at LondonR Ltd

# The R-shared Platform



## The R-shared Platform

- Integration of the ModSpace software with DSI structures
- On development path at Mango for *May 2011*
- Looking for interested parties to get involved



myR   [Advanced Search](#)

Folder Delete Edit Entry Group Template Preferences Get R Support

### My Favourites

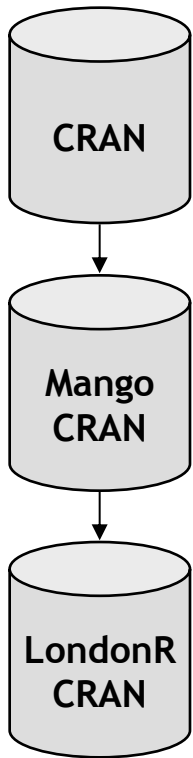
- My Entries
- My Groups

### Questions

- How do I calculate the risk of an asset within R?  
Posted by rpugh on 1st Feb 2011 [See 8 responses](#)
- Does anyone have a script to create a boxplot using the mean as the mid-point of the box instead of the median?  
Posted by mcreed on 10th Jan 2011 [See 4 responses](#)

### News | Reminders(1) | Dashboard

- New R Package: ggplot2 v1.0.1 now available for use**  
Hadley's Wickhams ggplot2 library has now been tested and is available for download  
*Richard Pugh, 1st Feb 2011 15:30pm*
- Feedback: Interactive Graphic Windows**  
"Really good video Mike - got any more you can post?" ★★★★★  
*Jonathan Chard, 30th Jan 2011 10:01am*
- New R Training Entry: Interactive Graphic Windows**  
Video showing how to set your graph windows to be interactive, allowing you to scroll through plots within the R environment  
*Michael Creed, 29th Jan 2011 16:05pm*
- New Entry: Scripts for Risk Assessment**  
Set of basic scripts that can be used to perform a variety of risk assessment tasks  
*Michael Creed, 29th Jan 2011 15:34pm*



# Where do they get R?

myR Search Advanced Search

Folder Delete Edit Entry Group Template Preferences **Get R** Support

My Favourites

- My Entries
- My Groups

News Reminders(1) Dashboard

**New R Package: ggplot2 v1.0.1 now available for use**  
Hadley's Wickhams ggplot2 library has now been tested and is available for download  
Richard Pugh, 1st Feb 2011 15:30pm

**IT Team**

**Hardware**

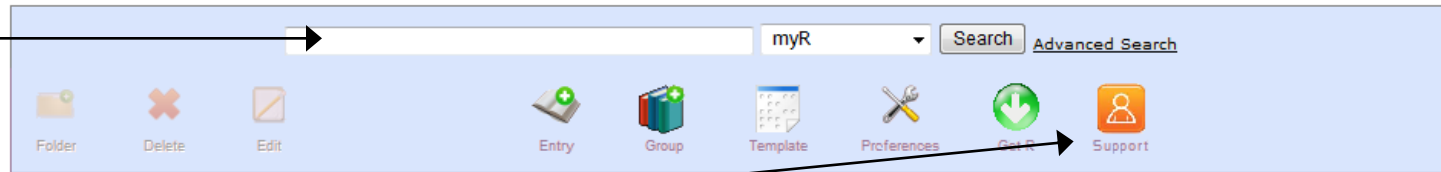
**Group 1**

**Group 2**

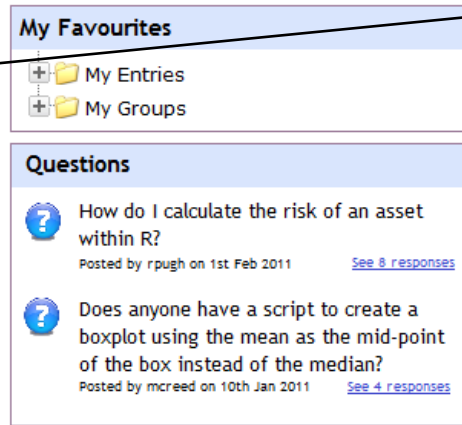
**Group 3**

# Where do they get Help?

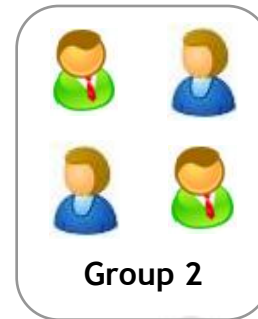
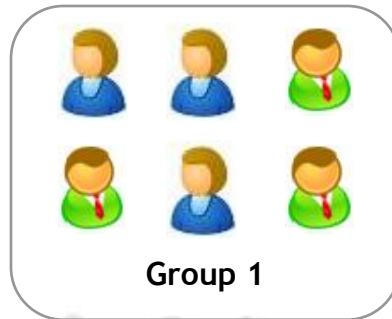
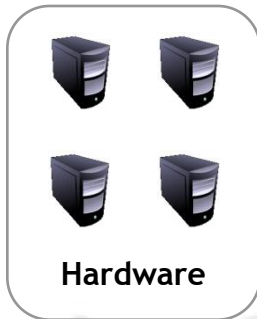
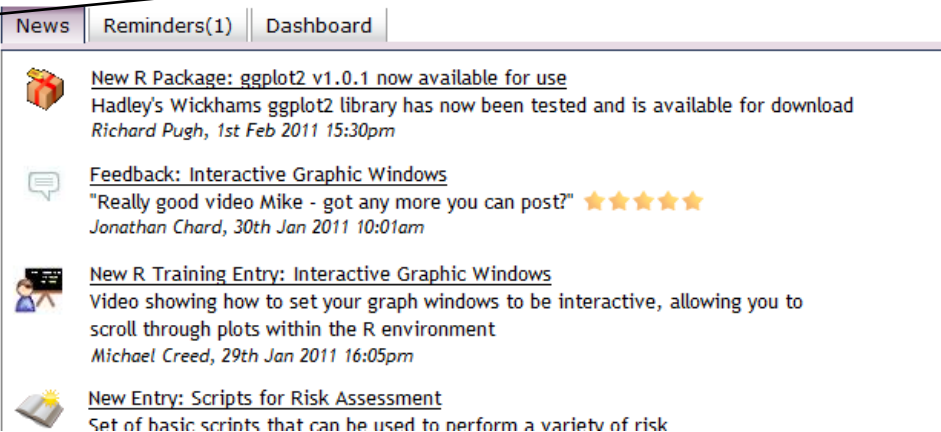
Search for an answer



Ask Mango a question



Internal Q&A



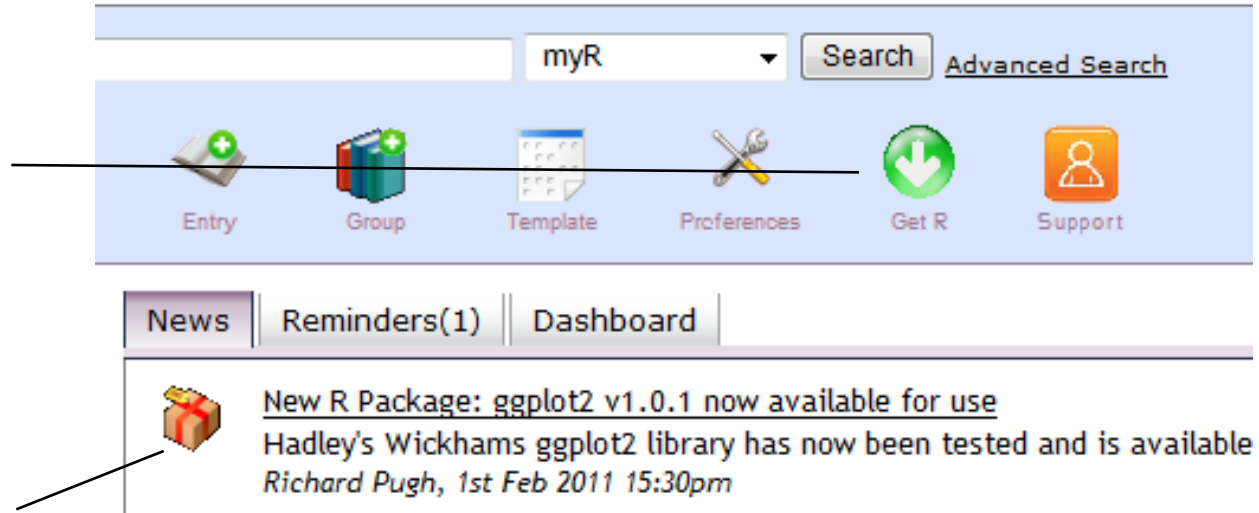
# How about that package that Bob wrote!

It lives in  
ModSpace

Can be  
downloaded

Can be further  
developed by everyone  
with access


Updates are announced  
in R-Shared




IT Team



Hardware



Group 1



Group 2



Group 3

# Where do they get training?

Training announcements part of news feed

The screenshot shows a news feed interface with three items. The first item is titled "New R Package: ggplot2 v1.0.1 now available for use" and includes a gift icon. The second item is titled "Feedback: Interactive Graphic Windows" and includes a speech bubble icon and five stars. The third item is titled "New R Training Entry: Interactive Graphic Windows" and includes a person at a computer icon. The interface has tabs for "News", "Reminders(1)", and "Dashboard".

Training materials stored in R-shared

IT Team

Hardware

Group 1

Group 2

Group 3

## Where is their code?

In R-shared, so stored in version control system

**Entry Contents**

- Useful R functions
  - mango\_theme.R
  - memory\_size.R
  - speeds.R

Overview | **File Preview** | History

```
mango.theme <- function(safe = FALSE) {
  mango.palette <- matrix(c(
    c("#F99B0C", "#E8112D", "#00A3DD",
      "#D36BC6", "#C49977", "#00C993"),
    c("#FF9900", "#CC0000", "#0099FF",
      "#996699", "#CC9966", "#66CC99")),
    ncol = 2, dimnames = list(c("Solutions", "CRM", "Finance",
      "Pharma", "Sensory", "Energy"), c("True", "Safe")))
  # define Mango colours
  column <- 1
  if(safe) {column <- 2}
  # toggle true or browser supported colours
  mango.hsv <- rgb2hsv(col2rgb(mango.palette[1:6, column]))
  mango.hsv[2, ] <- 0.3
  mango.light <- hsv(h = mango.hsv[1, ], s = mango.hsv[2, ],
    v = mango.hsv[3, ])
  # create vector of lightened colours
  # saturated colours influence perception of data

  par <- col.whitebg()
}
```




IT Team




Hardware



Group 1



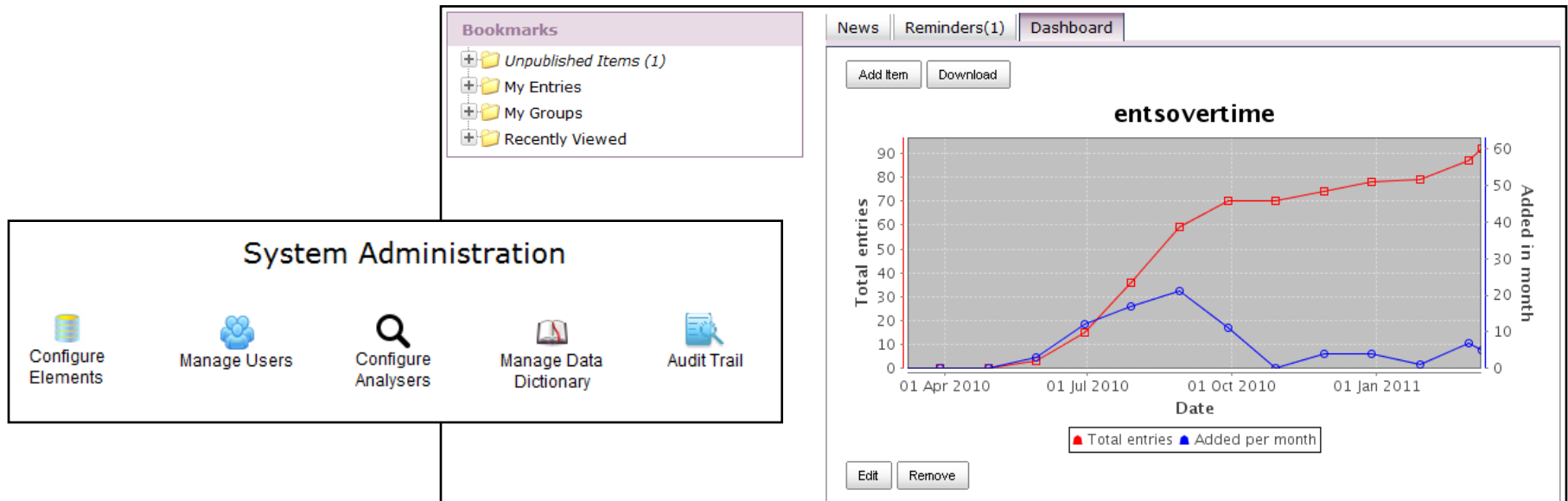
Group 2



Group 3

## How about some IT support?

IT users have admin and management interfaces



**Bookmarks**

- Unpublished Items (1)
- My Entries
- My Groups
- Recently Viewed

**System Administration**

- Configure Elements
- Manage Users
- Configure Analysers
- Manage Data Dictionary
- Audit Trail

**Dashboard**

News | Reminders(1) | Dashboard

Add Item | Download

**entsovertime**

Total entries (Left Y-axis, 0-90)  
Added in month (Right Y-axis, 0-60)

Date (X-axis: 01 Apr 2010, 01 Jul 2010, 01 Oct 2010, 01 Jan 2011)

Legend: Total entries (Red line with squares), Added per month (Blue line with circles)


Edit | Remove




**IT Team**



**Hardware**



**Group 1**



**Group 2**



**Group 3**



# How do the teams communicate?

Using “groups” within R-shared and view news feed

**Group Contents**

- R and S-PLUS Training
  - Finance Courses
  - General Courses
  - PK Courses
  - Pharma-but-not-PK Courses
  - Public: Introduction to R
  - Useful R Resources

Overview | News | History | Members

**Updated group : R and S-PLUS Training**  
A central point for discussion around and access to R/S Training materials  
Updated with 3 or 4 new courses  
Richard Pugh, 20-Feb-11 08:44PM

**Updated entry : PSI Webinars 2011**  
PSI Webinars presented in 2011  
added some meta info  
Richard Pugh, 20-Feb-11 08:43PM

**New entry : PSI Webinars 2011**  
PSI Webinars presented in 2011  
PSI Webinars: Just Simulation one so far  
Richard Pugh, 20-Feb-11 08:42PM

**Updated entry : J&J Training Materials Jan 2011**  
Training Materials used for the J&J course in Beerse, taught by Rich in Jan 2011  
Updated following the course to add scripts, code generated, list of attendees etc  
Richard Pugh, 20-Feb-11 08:39PM

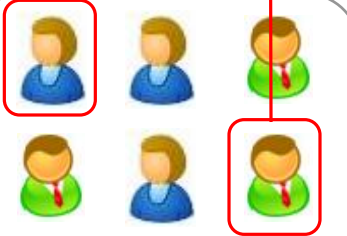
**Updated entry : Centocor R for PK Training August 2010**  
Materials used in the Centocor R for PK Training course, taught by Richard Pugh in




IT Team



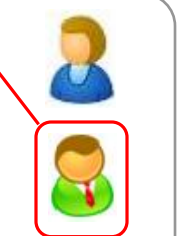
Hardware



Group 1



Group 2



Group 3

# Summary

## Summary

- R-shared Platform in development (although there isn't a lot to do!)
- Should be available May/June 2011
- Looking for companies who want to get involved at this stage

# Questions