

Jessitura



**EUROPEAN
CONFERENCE 2015**

**5 & 6 NOVEMBER
NOTTINGHAM**


**KEEP
CALM
AND
SELL
ON**

HIGH VOLUME ONSALES

Keep calm and sell on

PRESENTERS

Chris Campbell : Grange Park Opera

Scott Whitehouse : Birmingham Hippodrome

Alex Jameson : Royal Opera House

CONTENT PLANNERS

Scott Whitehouse : Birmingham Hippodrome

Ruth Harris : Royal Shakespeare Company

Donna Scott : Birmingham Hippodrome

Sofia Nazar-Chadwick : Nottingham Lakeside Arts

High Volume Sales

An Introduction

GRANGE PARK OPERA

My experience with High Volume Sales

As a customer

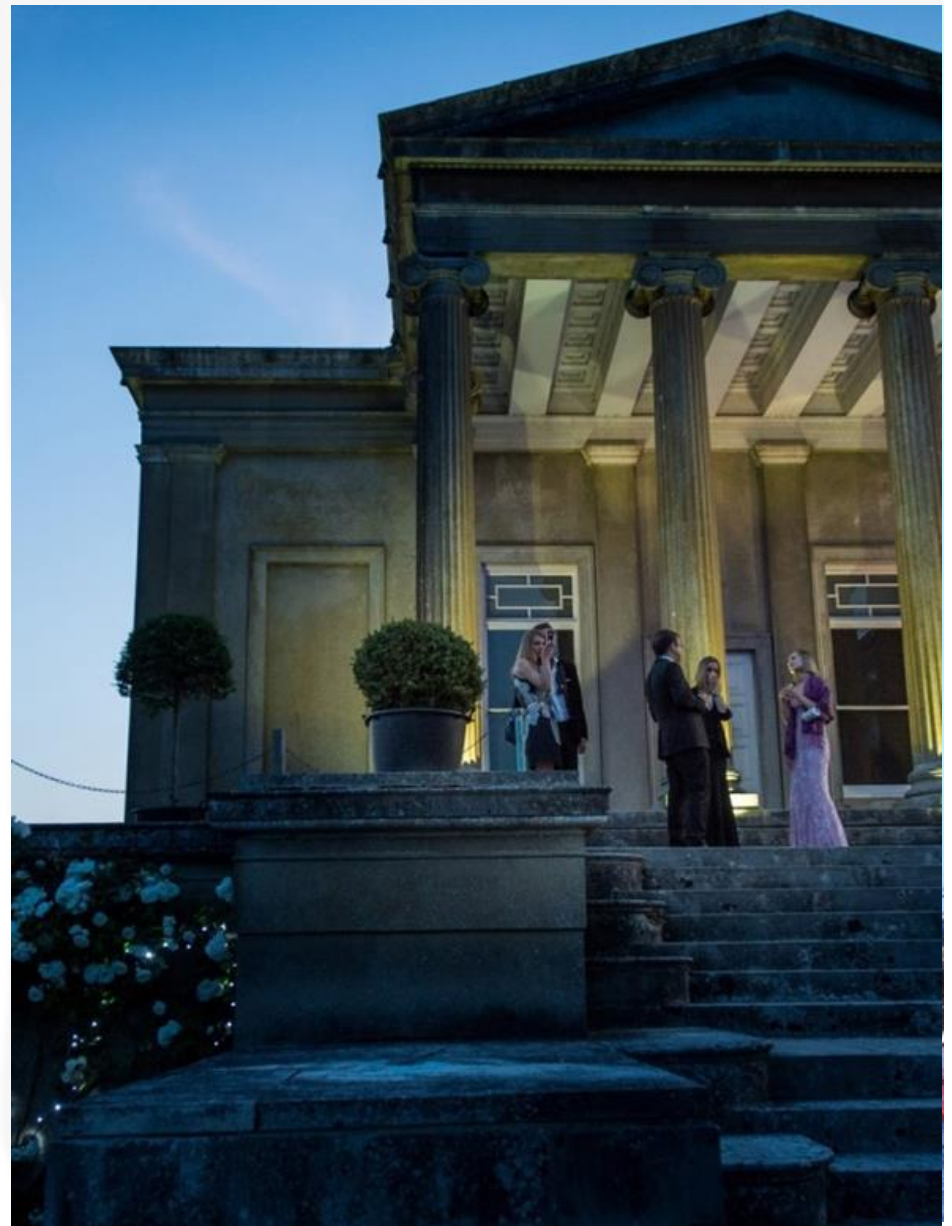
- Recovering Theatre junkie
- Serial Olympic Games enthusiast

As a call handler

- Barbican Centre
- Southbank Centre

As a manager

- Young Vic Theatre
- Grange Park Opera



GRANGE PARK OPERA

GRANGE PARK OPERA

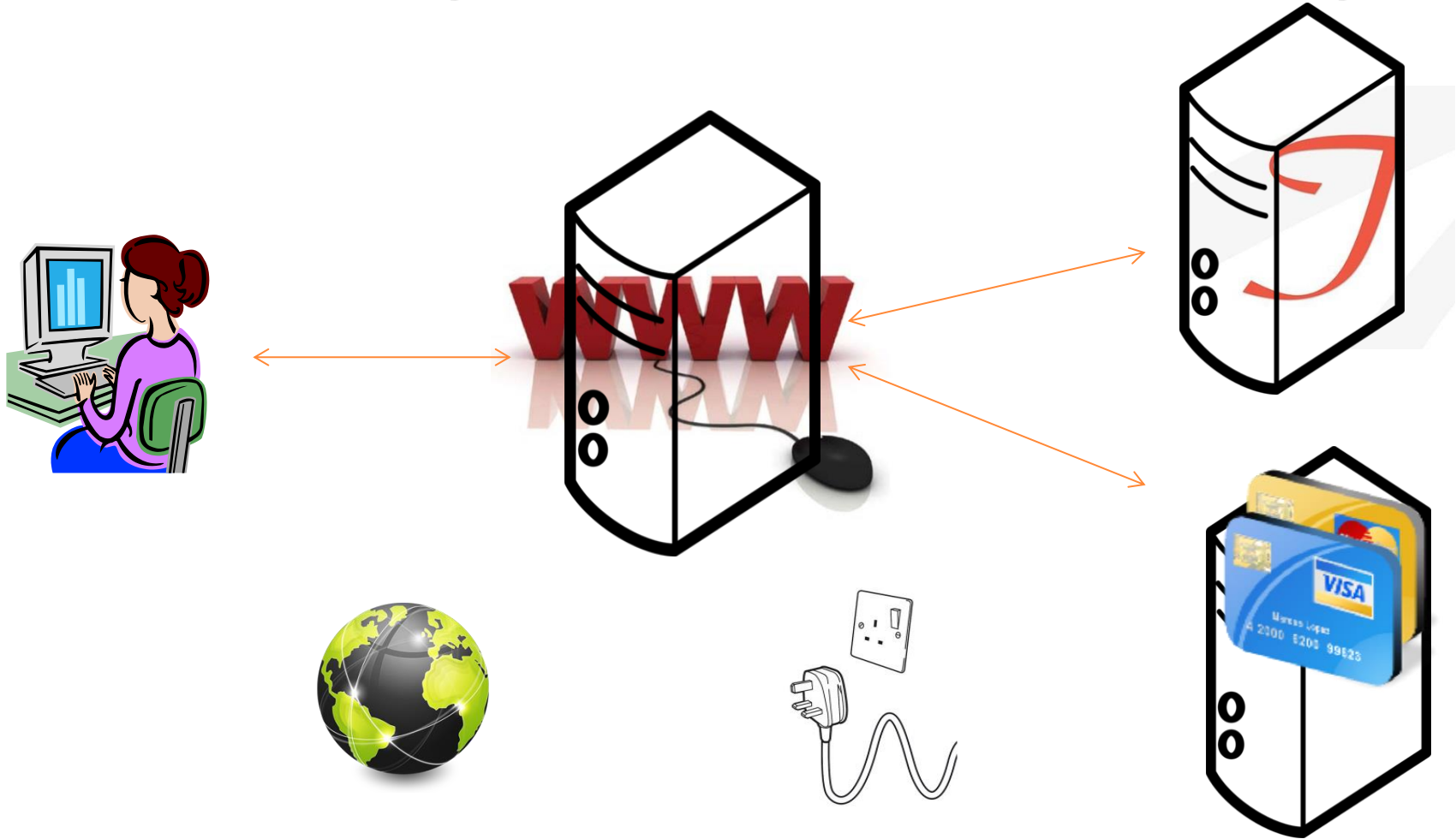
In this presentation, I'll cover...



- The paths involved in making a booking
- The Single Point of Failure
- Protecting your resources
- Your most valuable tool

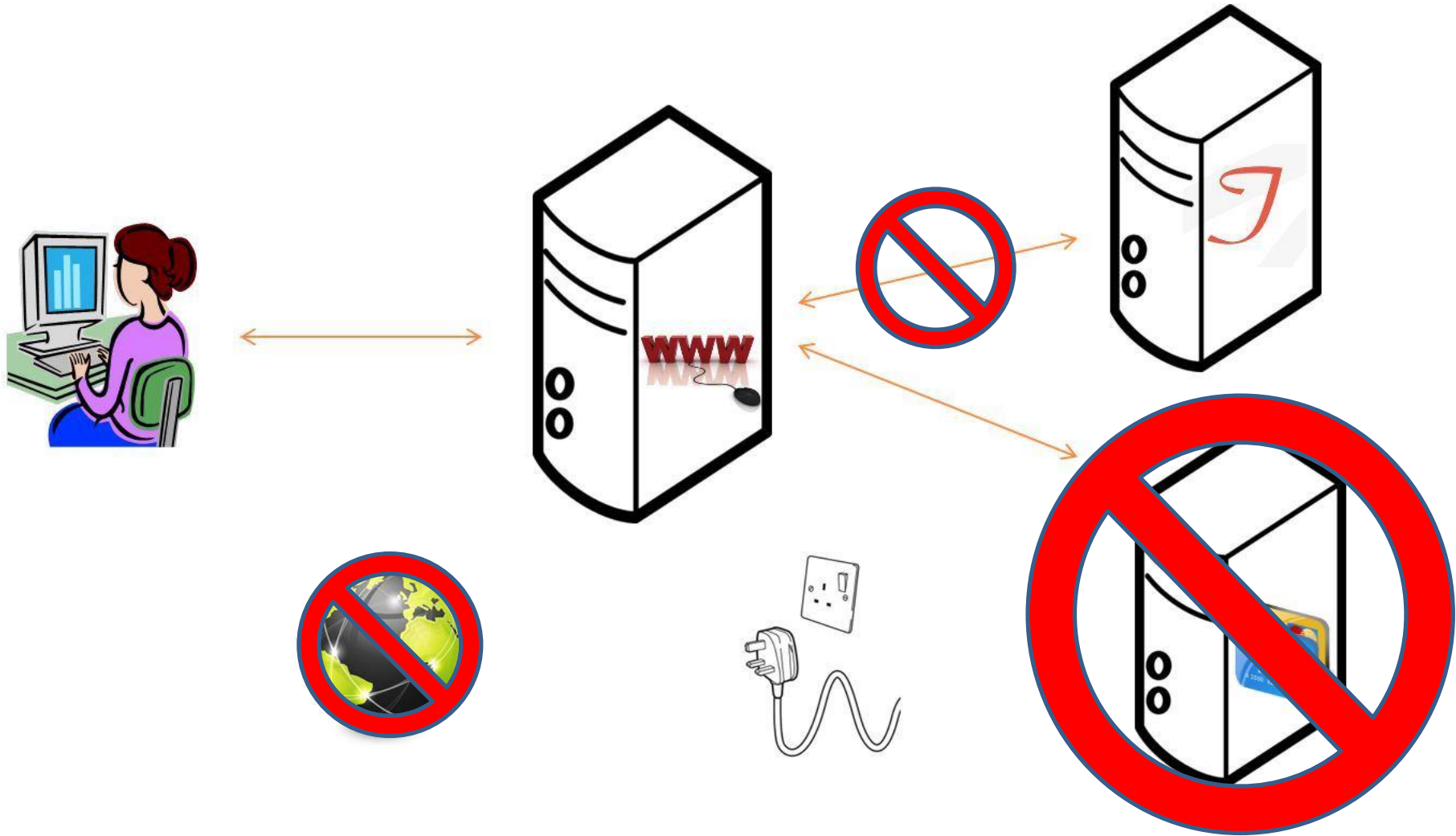
GRANGE PARK OPERA

Making an online booking



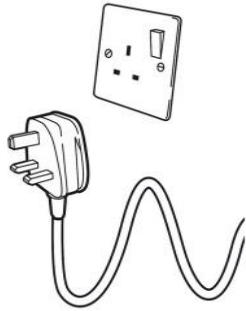
GRANGE PARK OPERA

Single Point of Failure



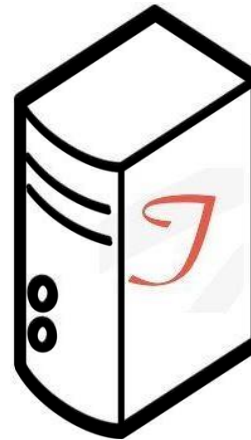
GRANGE PARK OPERA

Power and the Internet



GRANGE PARK OPERA

Redundancy and your servers



GRANGE PARK OPERA

Waiting Room

THIS PAGE REFRESHES AUTOMATICALLY - PLEASE DON'T REFRESH OR LEAVE THIS WEBPAGE

Tweets

Follow



Grange Park Opera @grangeparkopera 23 Jan
The good news is that I've placed an order for fibre broadband which should really help before [#GPO2015](#) booking opens on 10th Feb. (2/2)
Expand



Grange Park Opera @grangeparkopera 23 Jan
It's nice to be in our new offices! The bad news is that the broadband speeds are terrible: so our website may be sluggish... (1/2)



Cameron Burns @ConductorCam 22 Jan
Played for some auditions @grangeparkopera today & was overwhelmed by some incredibly gifted singers. What a pleasure!
Retweeted by Grange Park Opera
Expand



Grange Park Opera @grangeparkopera 17 Jan
Are we exhausted after our office move? Yes we are. But everything has been shifted. Well; all except this. Eeek.
pic.twitter.com/Gx3MGm35lq



Tweet to @grangeparkopera

Additional Information

You will move towards the front of the queue automatically

If you're using a mobile device, please ensure that it doesn't go into sleep/hibernate mode

Once you have reached the front of the queue you will be able to buy tickets as normal for all available productions

Thanks for your patience



GRANGE PARK OPERA



Kelly Byron
@Kelly3085

@OfficialPLT I've just spent the best part of an hour on your SLOW website to check out and be told items are now out of stock #nothappy 😡



Chris
@pieeatingchamp

@AMCTheatres even your website is running so slow I can't order tickets. what gives?



NIKitaY @NikitaY · 9h
SBB website crashes over and over again #sbb maybe the tickets are not expensive enough.

Online timetable.

Dear customer,
your search results could not be stored internally. Please start a new search by clicking here.
Thank you.
Code: F1



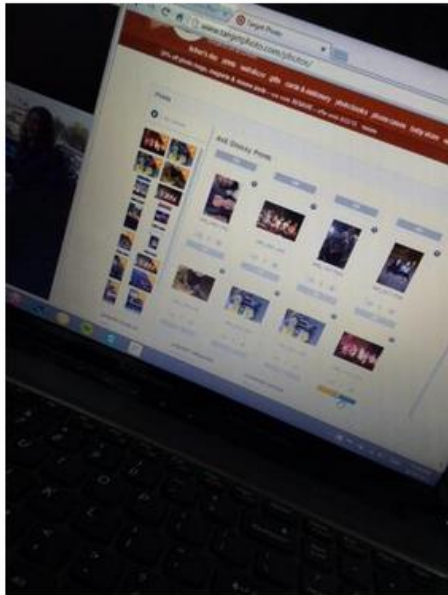
olly and 5sos [PB]
@emmabailey1301

@MoonpigUK trying to make a card on your website, none of my photos will upload and it is extremely slow!
pic.twitter.com/R3AUQKNoug



grace
@aaronsblunt

this website is so slow and glitchy it's driving me insane
pic.twitter.com/sqjrTUdCOW



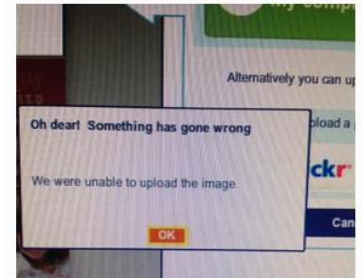
Manny
@Mannydas

Surely they should have known there would be this much traffic going on their website today @ManUtd so slow box office



SausageNeggz
@sausagenegg

@Argos_Online worst website ever..always slow, even on fibre "cant find page" yout IT dept need spanking



analankannan
@analankannan

@IndiGo6E Your website is too slow. Please rectify the problem. Because of it I had to book in another airline.

8:33am · 20 Jun 2015 · Twitter Web Client

GRANGE PARK OPERA

A large, diverse crowd of people of various ages and ethnicities, all looking directly at the camera with neutral or serious expressions. The crowd is dense and fills the entire frame.

Your Most Valuable Tool in High Volume Sales

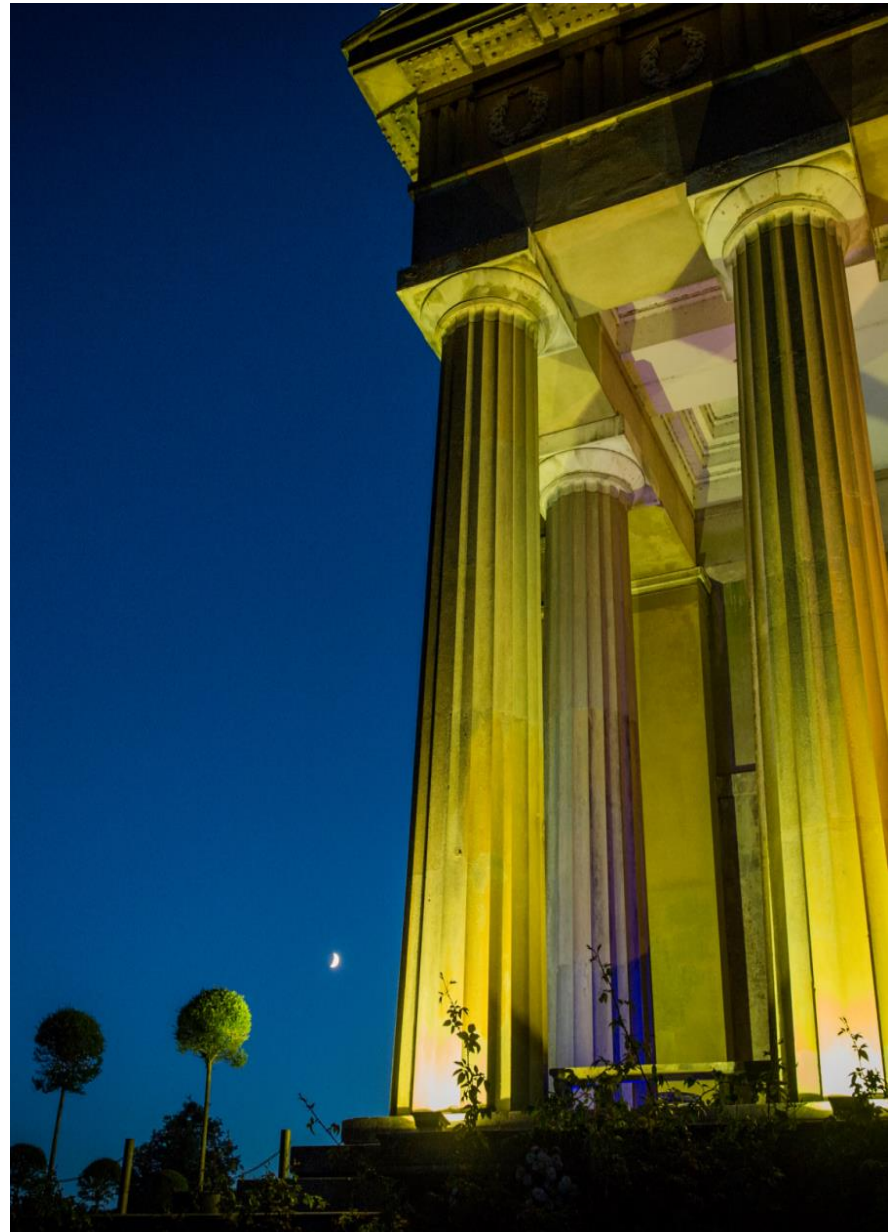
GRANGE PARK OPERA

Contact

Chris Campbell

chris@
grangeparkopera.co.uk

+44 1962 73 73 75



GRANGE PARK OPERA

High – Volume Sales

Keep Calm and Sell On

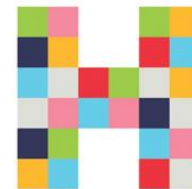
Scott Whitehouse

Business Systems Manager



Who we are

- Busiest single theatre in the UK
- Independent and not-for-profit
- 1840 seat auditorium / 200 seat studio space





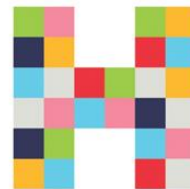
Before

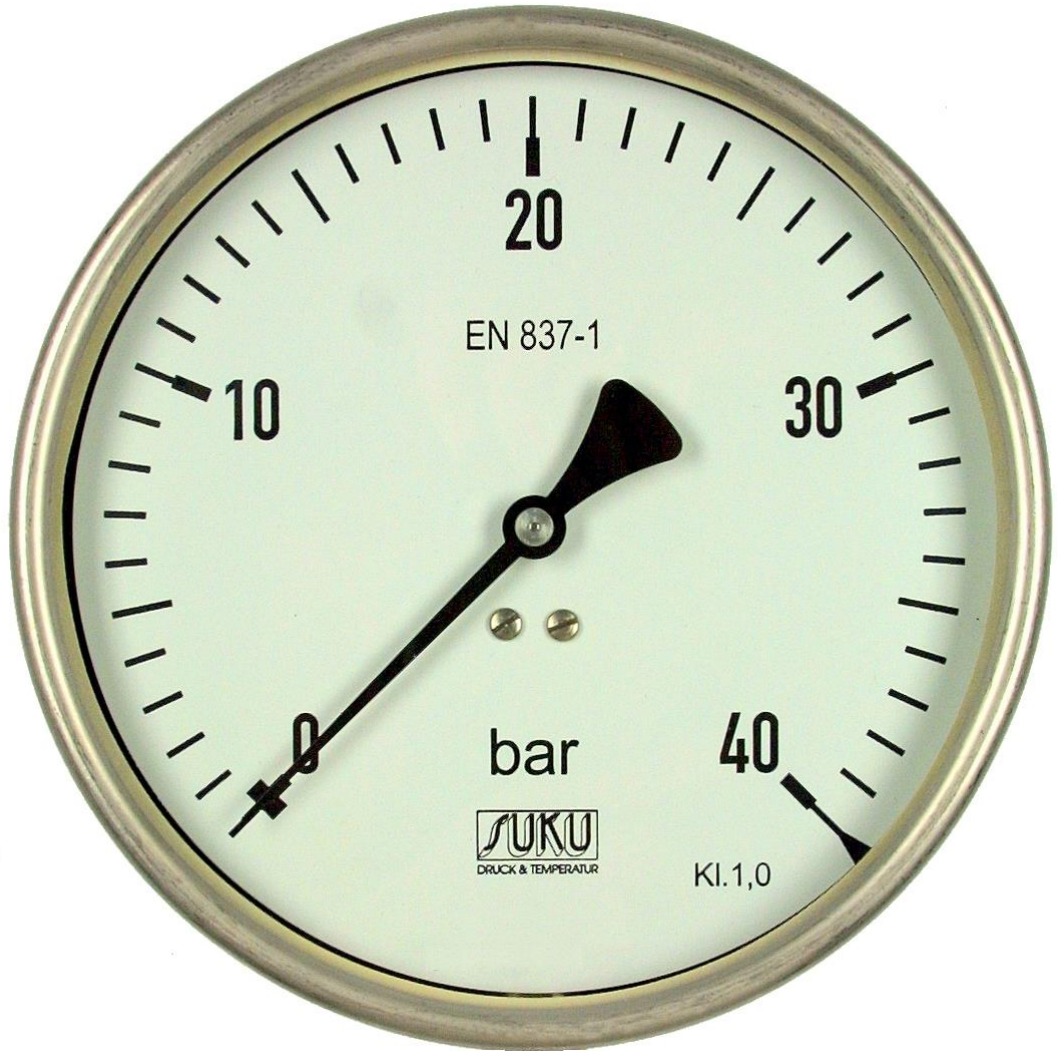


During

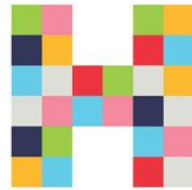


After





H BIRMINGHAM
HIPPODROME



You know!

- Advanced notice of a particular large onsale.
- Take the advice of other theatres and the producers of the show.
- Believe the Hype!
- With previous on sales that you have experienced, what was the traffic like?



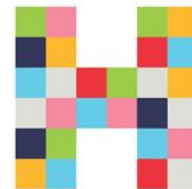
Is it just the web we need to worry about....

.....No





And what about the web?









Crowd Handler™

On-sale Traffic Tamed

A Cloud Service from Made Media

Do We Need The Waiting Room

- Are you going to exceed 200 simultaneous connections on your seat server?
- Are you going to process more than 45 orders per minute?
- Do you expect traffic peaks and troughs throughout the on sale period?



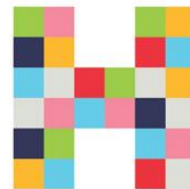
Teamwork

Together

Everyone

Achieves

More



Marketing Plan

- Know TV advertising schedules.
- When post is due to land.
- Break up large email sending into smaller groups.
- Social Media.





Before



During



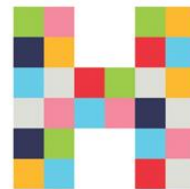
After

H BIRMINGHAM
HIPPODROME









Activate Waiting Room

- Typically done between 48-72 hours before the on sale.
- Always time to:
 - Check all is working as expected.
 - Tweak accordingly.












Phone - Call Plan

-  Home
-  Route Activator
-  Active Reports
-  Admin
-  Direct Access
-  Help

SAN Selection **SAN Properties** **Customer lists** **Target points** **Call plans**

8onwardsNEC

-  From 1st to 8th calls  441212603201
-  From 9th to 20th calls  Ticketfactory
-  21st call  PUB-Announcement 15-UK
-  subsequent calls  PUB-Announcement 15-UK

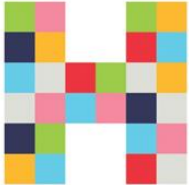
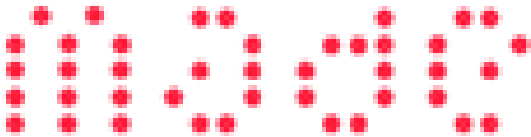
Current status  completed

SAVE QUIT

Conference Call



BIRMINGHAM
HIPPODROME



Opening The Gates

- Typically 10:00am onsale
- Start off with a web connection limit of 100 people.
- Every 15 minutes increase the connection limit in intervals of 10-25 people.



Benefits Of Steady Approach

- Delivering a better customer experience
- IT departments don't get phone calls to say websites have gone down due to traffic surges!
- Although, we can't guarantee that no phone calls will come in at all!



Before



During



After

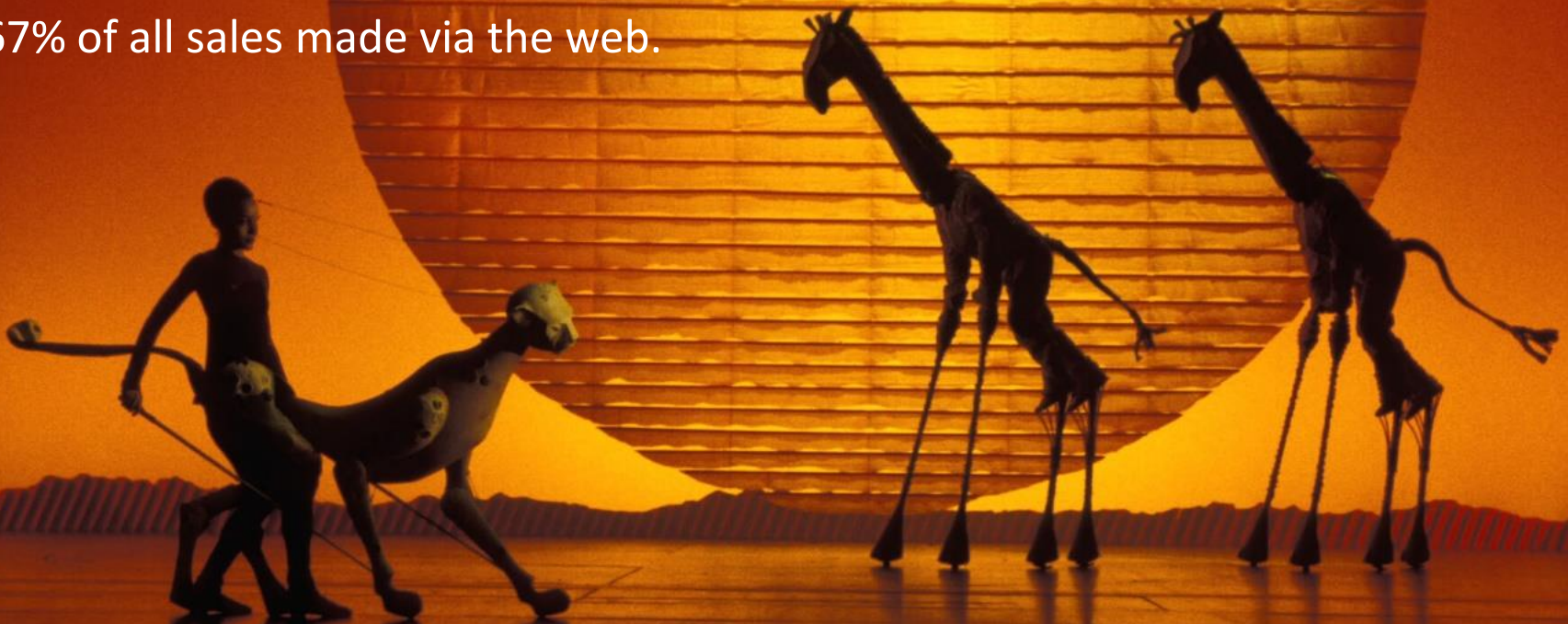


The Lion King

Over 1000 people in the queue on go live.

Over £700k in one day.

67% of all sales made via the web.



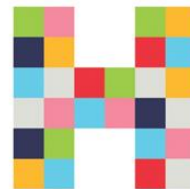


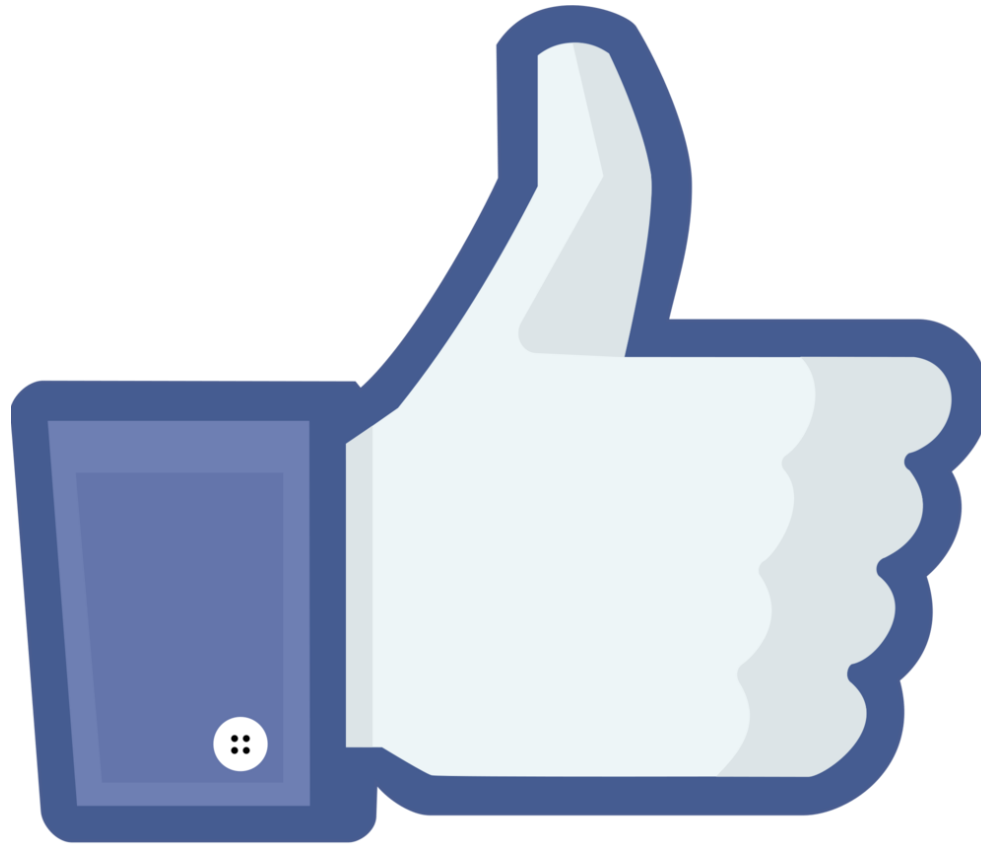
Mary Poppins

300 people in the queue on go live.

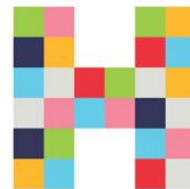
Over £300k in one day.

71% of all sales made via the web.





H BIRMINGHAM
HIPPODROME



Summary

- Plan ahead!
- Work as a team!
- Balance Expectation and Demand!



Thank You

Scott Whitehouse

Business Systems Manager

scottwhitehouse@birminghamhippodrome.com

@s_whitehouse



High Volume On Sales

“Keep calm and carry on”

High Volume On Sales

- Preparation
 - Communicate
 - Customers!
 - Users (Box Office, Marketing, Finance, Switchboard)
 - Web Team (maintain website)
 - Media Team (create and monitor web content, social media)
 - IT/Technical Operations/Database Team (maintains Network & Application/SQL Servers)
 - 3rd party companies – Website Partner, Merchant Acquirer

High Volume On Sales

- Preparation (cont'd)
 - Web Team
 - Schedule Scale up of website/API
 - Schedule website queue function
 - Load Testing of website (will discuss later)
 - IT/Tech Ops/Database Team
 - Setup Windows performance monitor (PerfMon) for SQL Server, Seat Server & Web API Server
 - Key SQL metrics to monitor are Server CPU, SQL Batches/sec, Lock Waits/sec, Deadlocks/sec, Lock Wait Time, Avg Wait Time. Watch out if you have multiple instances) –
 - Schedule them to start automatically
 - Setup SQL Server Extended Events to capture deadlocks – Search for articles on MSDN.
 - 3rd party monitoring tools (Idera SQL Diagnostic Manager, SolarWinds etc)
 - Check Key Servers (SQL, Applications) Windows Event Log

High Volume On Sales

- The big day - what to actually do/look at
 - **Conference Call** – should involve all key personnel
 - Web team
 - Number of users on website
 - Website performance (CloudWatch & CDN/Fastly)
 - Website logging (Kibana etc)
 - Media Team
 - Twitter / comments page
 - Ready to reply to posts/messages
 - Box Office
 - Check tickets are available to buy (caching problems, hold codes are released correctly)
 - Monitor Online Sales mailbox

High Volume On Sales

- The big day - what to actually look at
 - IT/Tech Ops/DB Team
 - SQL Server Activity Monitor – 3 most important metrics – CPU, Waiting Tasks and Batches/sec. Ensure that refresh interval is set to 1 or 3 secs.
 - Seat Server
 - Monitor API Performance (mainly CPU).

High Volume On Sales

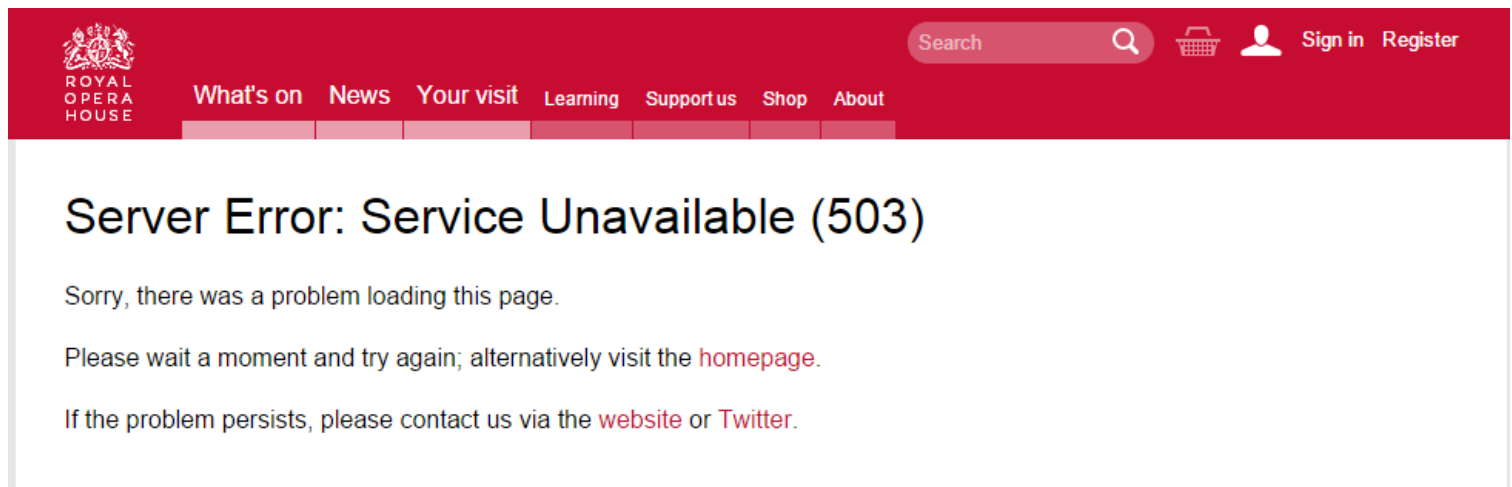
- If everything goes well then you will see
 - Authorised payments
 - Orders in Tessitura
 - Confirmation emails

- This leads to →



High Volume On Sales

- However if things go wrong then you might start seeing timeouts on the website which in turns leads to



The screenshot shows the top navigation bar of the Royal Opera House website, which is red with white text and icons. The navigation bar includes the Royal Opera House logo, a search bar, a shopping cart icon, a user profile icon, and links for 'Sign in' and 'Register'. Below the navigation bar, the main content area is white and displays a 'Server Error: Service Unavailable (503)' message. The message text reads: 'Sorry, there was a problem loading this page. Please wait a moment and try again; alternatively visit the [homepage](#). If the problem persists, please contact us via the [website](#) or [Twitter](#).'

High Volume On Sales

- This is turn leads to customers saying



High Volume On Sales

- How to react –



With apologies and copyright to
Douglas Adams

High Volume On Sales

- Diagnose
 - Keep calm and carry on
 - Identify problem by examining website logs for errors
 - Look at Web API performance
 - Look at SQL Server Activity monitor – look closely at Waiting Tasks and Blocking and Blocked sessions. Deadlocks may be occurring on SQL Server – check extended events.
 - Check Seat Server
 - Check Network performance – insufficient bandwidth

High Volume On Sales

- Problem identified
 - Hardware issue
 - Server performance – CPU, Memory, Disk
 - Network issue – check latency
 - Software issue
 - Stored Procedure
 - Table indexes (not rebuilt)
 - DLL
 - SOAP/REST web.config options

High Volume On Sales

- Remedial Action
 - Hardware issue
 - Server performance – provision better hardware with higher CPU, more memory, faster disks (SSD)
 - Network issue – increase bandwidth, decrease contention
 - Software issue
 - Stored Procedure (updated)
 - Table indexes (rebuild) – overnight scheduled job
 - DLL – (updated)
 - SOAP/REST web.config options (disable features)

High Volume On Sales

- Remedial Action taken – now what?
- Wait for next on-sale and hope?
- No – need to test changes made.
- However we cannot recreate actions of several thousand customers buying same tickets at the same time....

High Volume On Sales

- The answer – ‘Load Testing’
- Software is available which simulates customers on your website selecting seats, adding to basket (reserving) and then checking out.
- Tessitura provide Web API Test Harness. Search on TN website for more details.
- Also 3rd party tools like Blazemeter (Jmeter).

High Volume On Sales

- Load Testing
 - Tessitura Web API Test Harness allows you to vary:
 - Users
 - Duration (mins)
 - Max Connections
 - Max Threads
 - Mode of Sale
 - Business Unit
 - Various Types of Actions:
 - Reserver/Unauthorised Buyer/Buyer Print/Unauthorised Buyer Print

High Volume On Sales

- Load Testing (cont'd)
 - Alternative load test tool - Blazemeter:
 - Graphical web application
 - Configure number of users to produce different amount of load on website/Tessitura.
 - Uses open source application called JMeter.
 - Have to create Jmeter script which mimics what a customer would do on your website. This can be tailored to match your website process if not standard.
 - You can run JMeter yourself but very manual process.
 - Blazemeter automates this process in a consistent graphical way.

High Volume On Sales

- How to Load Test -
 - You need a test environment. Ideally it should match (as closely as possible) your live environment.
 - Run Load Tests of different sizes (number of users) to establish a baseline.
 - Important to run
 - Ensure Performance Monitor running to capture metrics.
 - Then make ONE change
 - Re-run load test(s)
 - Capture new metrics and compare to previous results
 - Repeat process

High Volume On Sales

- How to load test (cont'd)
 - In extremis – you can test against your live environment.
 - If load test ‘sells’ tickets then you have to:
 - Close live website.
 - Turn off all updates to Tessitura.
 - Backup SQL databases.
 - Run Load test(s)
 - Restore SQL databases
 - Not recommended!!

High Volume On Sales

- When to Load Test -
 - Any changes to environment!
 - Upgrading Tessitura
 - When we load tested v12.5 we found that the Web API (SOAP&REST) servers are doing more of the processing.
 - For large onsale with v12.1 we provisioned 4 API Servers. For v12.5 we found we had to provision 8.
 - Changes to Tessitura tables/stored procedures
 - Changes to website – new functionality
 - Changes to infrastructure

High Volume On Sales

- Best Practise / Performance by Design
 - Agree site performance as a strategic goal
 - Set target with Business for
 - Concurrency (i.e. throughput)
 - Response times (<3s)
 - Reliability
 - Availability (24*7)
 - To deliver this needs people / process & tools (application performance management)

Jessitura



**EUROPEAN
CONFERENCE 2015**

**5 & 6 NOVEMBER
NOTTINGHAM**

QUESTIONS?

- Please tell us who you are and where you are from.....

Jessitura



**EUROPEAN
CONFERENCE 2015**

**5 & 6 NOVEMBER
NOTTINGHAM**

WHATS NEXT?

🕒 **BREAK 3.05PM – 3.20PM**

Drinks are available in or near all conference rooms. We suggest that you make your way to the location of your next session and then find your refreshments.

🕒 **NEXT SESSION : 3.20PM – 4.20PM**