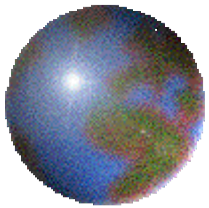
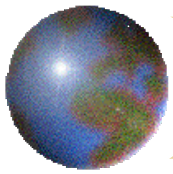


SOA – Benefits and Risks

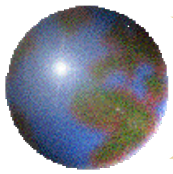
Presentation to ESUG 2005 Conference

Andy Berry – www.tof.co.uk



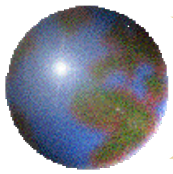
What we'll cover…

- What is SOA (Service Oriented Architecture)?
- Business Benefits
- Risks and how to mitigate them
- Smalltalk and SOA
- What next for your Business?



What is a SOA?

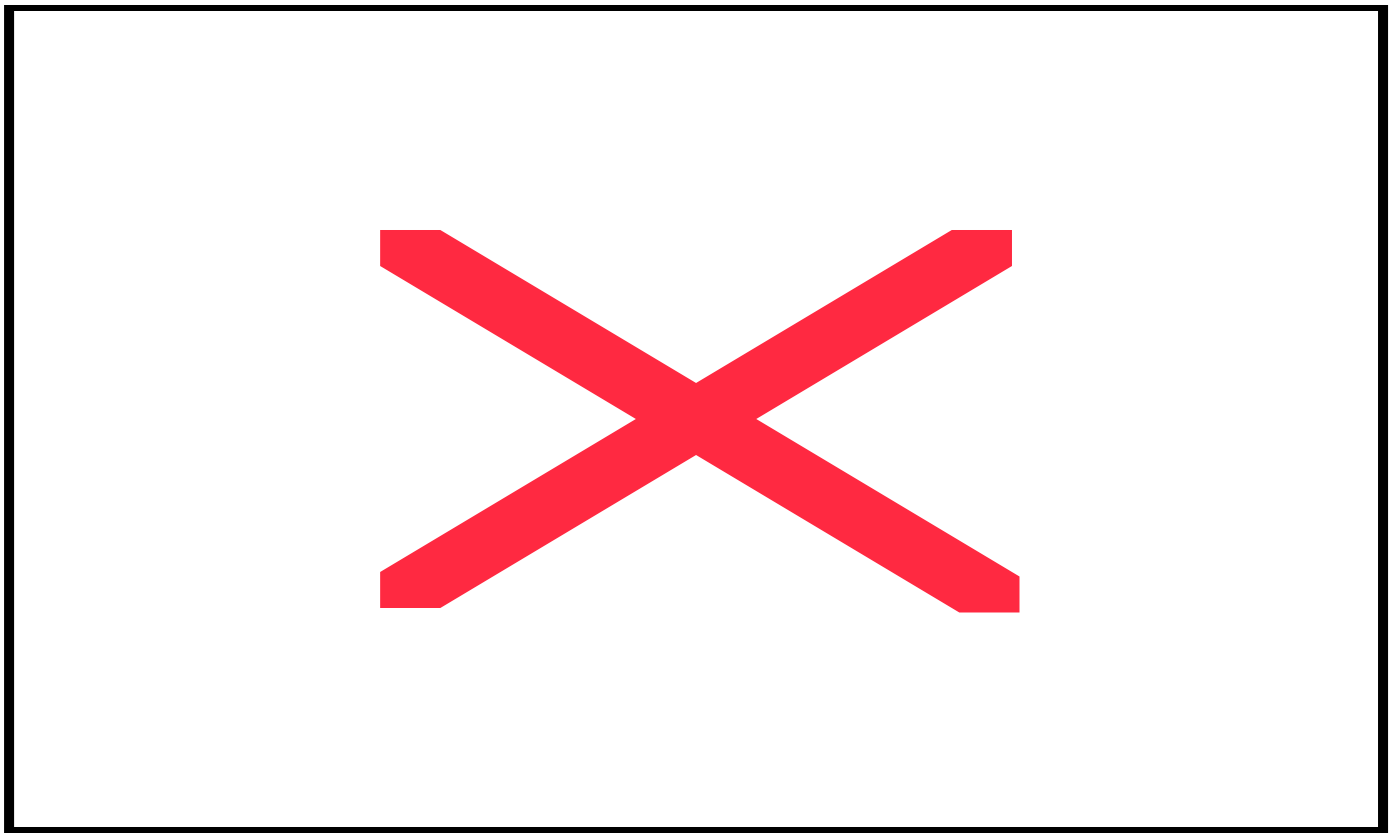
- What is an ‘architecture’?
- What is a ‘service’?
- What is a SOA?

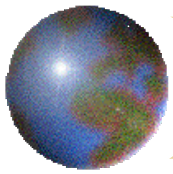


What is a Architecture?

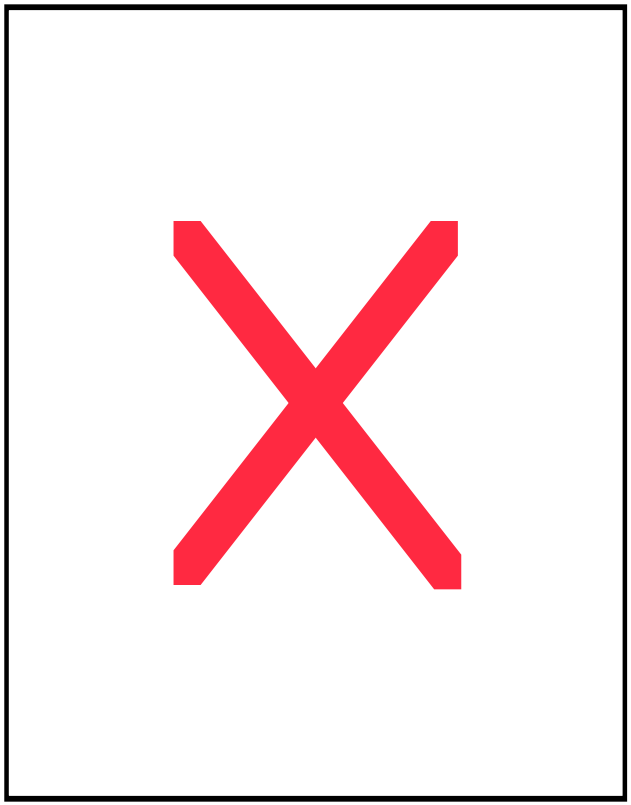
- Let's pretend that you win the Lottery and you ask a builder to build you a new house…

This is what you have in mind…

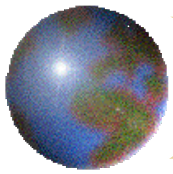




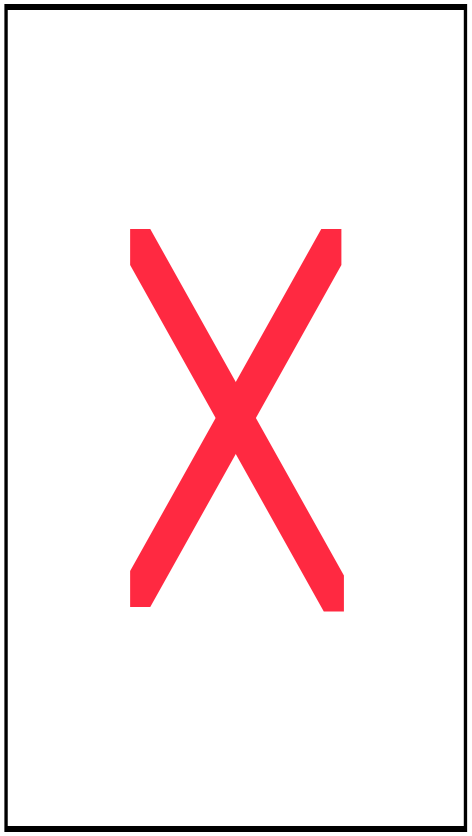
But this is what you get…



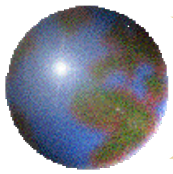
- "Well, I saved bricks by building it 'in the round'" the builder says
- Yes, but…
- He forget that the best view is where he didn't put any windows



Now, let's scale up the problem…

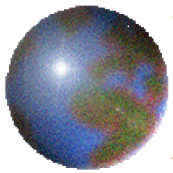


- Cities, comprising many thousands of buildings, must work together



Let's apply this to IT…

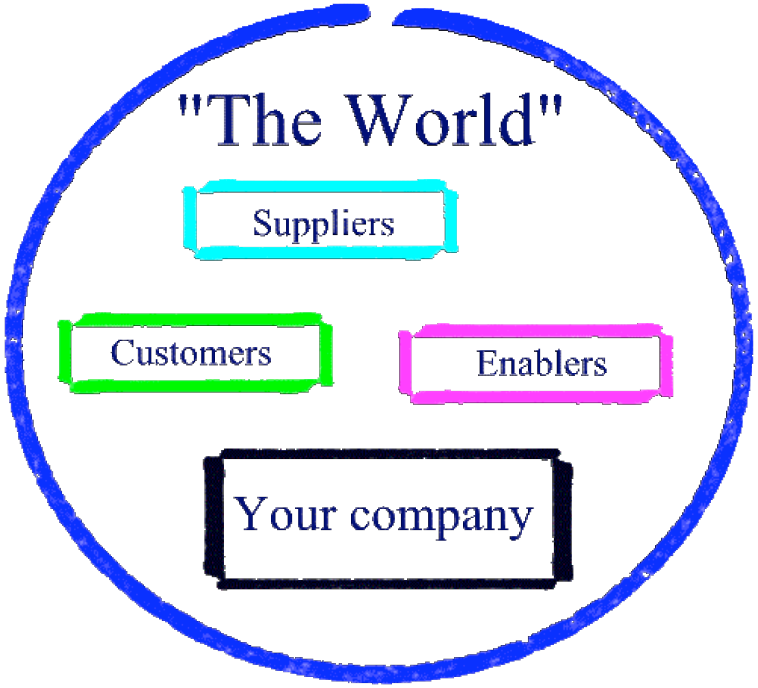
- We may have wonderful applications for Sales, Billing and Quality Control but none of them should exist in isolation…
- A Sales Enquiry should 'turn into' an Invoice without the need to re-type it
- We need all our applications to work together so we can save money (That's what it's all about)

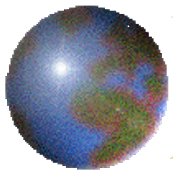


So, we need an architecture for our IT Systems

- The architecture must tell us how to link things together
- It must consider both the business itself and the world around it

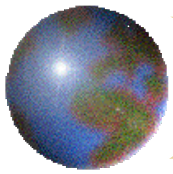
Your Business and the World





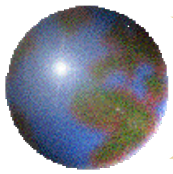
My key message…

- If there's one message I want you to take away from this presentation, it's this:
  - A Service Oriented Architecture is a way of including everyone - Customers, Suppliers and Enablers – as partners in your IT system



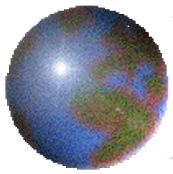
An SOA is…

- Service Oriented Architecture
- That is, an Architecture that is designed around Services



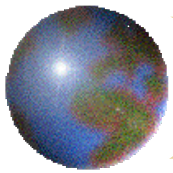
What is a "Service"?

- Suppose I am a Taxi Driver…
- You ring me up and ask me to take you somewhere…
- I arrive, pick you up and drive you to your destination…
- I have provided a "Service"
- (How I get paid is an interesting question, we'll cover that near the end)



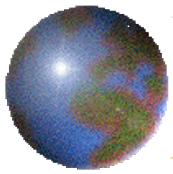
Characteristics of a Service

- It's business oriented – I don't need to tell the Taxi Driver how to drive
- It's asynchronous – I request something and, sometime later, it happens
- Normally, you get what you ask for



Granularity, Granularity, Granularity…

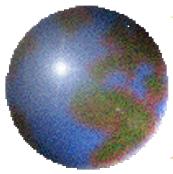
- Let's return to IT land…
- Consider a Billing Application…
- Should a Service be to read a row in the Customer table of the database?
  OR
- Should a Service be to submit an Invoice to a customer?



Remember, we're talking Architecture, not Coding!

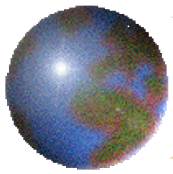
- Put simply, Services should be Business Oriented.
- Always ask yourself:

  Can I imagine myself doing this?
- If it's doable by a human, it's probably Business Oriented enough to be a Service

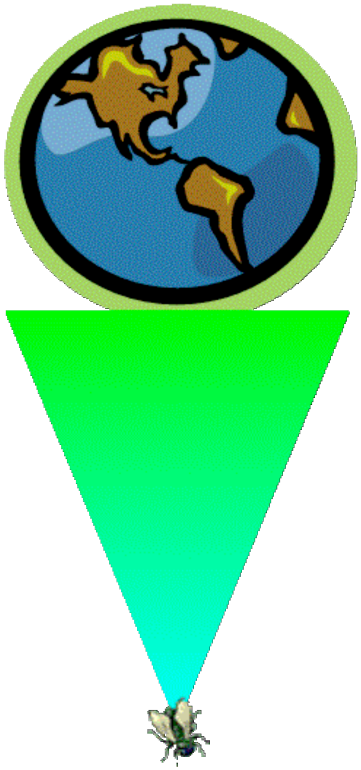


And so…

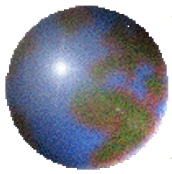
- A service to submit an Invoice to a customer is probably closer to meeting the definition of a "Business Oriented Service" in an SOA than a bit of code to read a row from a database



Where does SOA fit?



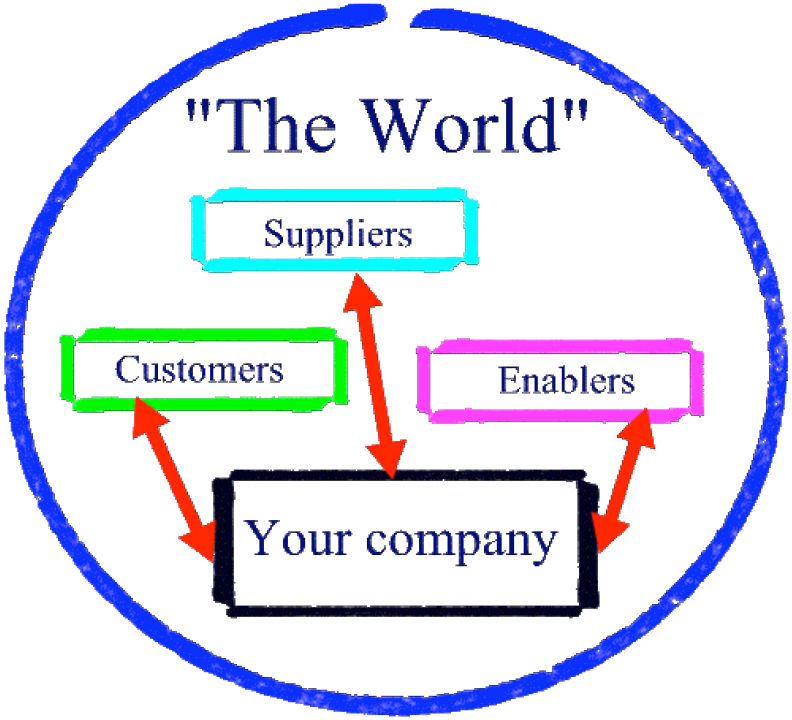
- Should SOA affect the way you view the world?
- Or, just the way you write your next line of code?



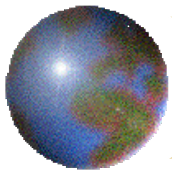
Try these statements…

- SOA is the most important development in software in the last ten years
- SOA is an interesting development that your company should monitor
- SOA is just a messaging application

How to talk to the world…

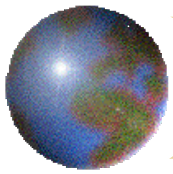


Messages,
Messages,
And, yes,
Messages



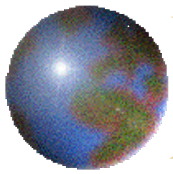
Inside your company…

- The role of SOAs isn't limited to inter-company communication.
- In fact, it makes sense to introduce an SOA inside your company before you try to communicate outside



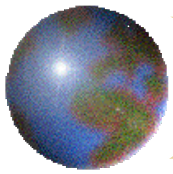
An exercise…

- As you know, I always ask you to do something during my presentations and so…
  - Can you think of three business oriented services that you allow parts of your company to work more effectively together?



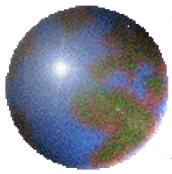
Implementing an SOA

- You can do it all yourself
- Or, you can use a product from suppliers like IBM, Iona, Sonic Software or CapeClear
- If you use a product, you get added value like tools to manage the flow of messages

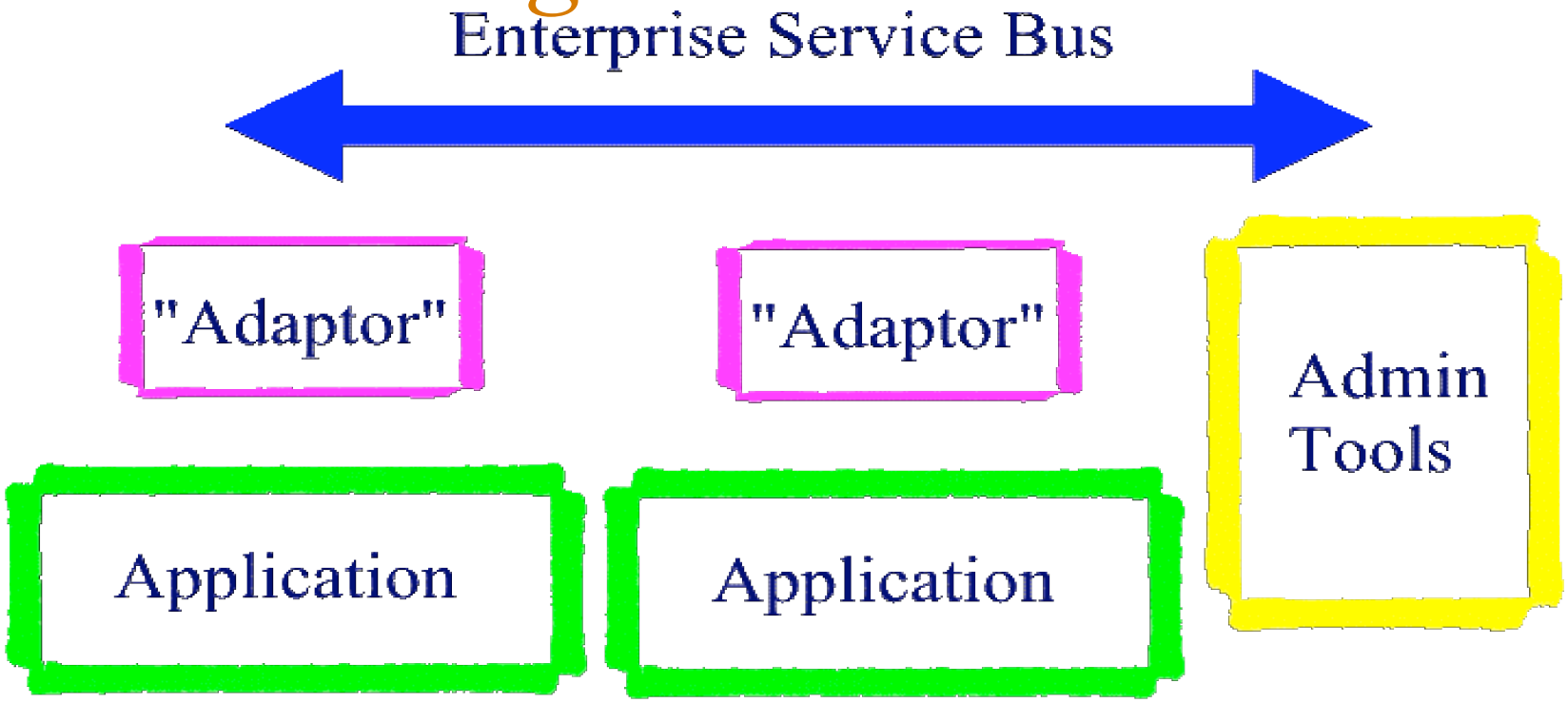


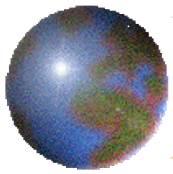
Enterprise Service Bus

- One of the implementation mechanisms is to use an "Enterprise Service Bus" (ESB)
- As its name implies, it's designed for use within an Enterprise – that's another name for a company.
- Basically, it lets you wrap your existing applications up and get them talking to each other



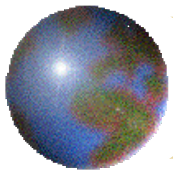
The ESB Diagram





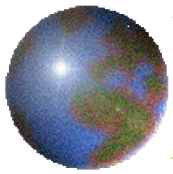
What goes along the Bus?

- Yes, hopefully, you've guessed…
- Messages, messages and more messages.
- Typically, these are implemented as Web Services



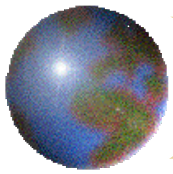
What's a Web Service?

- At an implementation level, a Web Service is a service delivered by XML encoded messages.
- For a more abstract view, read Tim Berners-Lee's article on the "Semantic Web" in the May 2001 issue of Scientific American



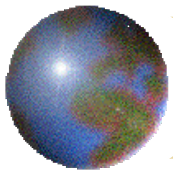
And the benefits of using Web Services are?

- When you link your ESB to one of your suppliers, you can use the Internet to send and receive messages
- Some Smalltalk implementations, for example, VisualWorks, support Web Services



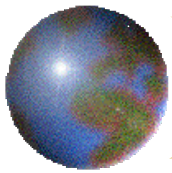
Benefits and Risks

- Let's look at the Benefits and Risks of SOA.
- This where it gets scary…
- Although, hopefully, you agree that the benefits are enough to justify taking the risks



Business Benefits of SOA

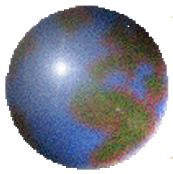
- You'll have an Architecture rather than a heap of isolated applications
- Your company can work closer with Customers and Suppliers
- A "future-proof" approach, over a 5 to 10 year timeframe



Risks of SOA

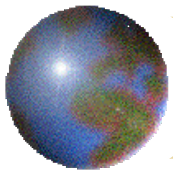
- You'll be an "Early Adopter"
- You'll incur extra costs
- The future isn't SOA after all…

And you can avoid these risks by…



Mitigating the Risks

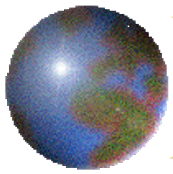
- Don't "bet the business" – identify a specific area that can benefit and start there.
- Ensure that you have access to Mentors – you're taking a big step and you need to make sure you know the risks.
- Choose a product before you start implementation



Smalltalk and SOA

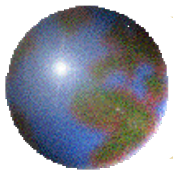
- As we've noted, Web Services are implemented by some Smalltalk implementations

- It only took me one day to use the Google Web Service – just do it!



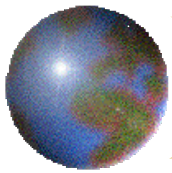
What next?

- You could "just do it" with SOA but:
  - You'd have to consider who is going to do what and when
  - Remember, granularity of service is a critical success factor
  - You don't want to end up with just another bit of technology - you want an Architecture that supports your business



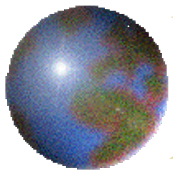
And so…

- I suggest:
  - You spend some time learning about the technology
  - Pick an area that could benefit from a SOA
  - Develop a prototype
  - Obtain "buy-in" from senior staff within your company



The Next Big Idea…

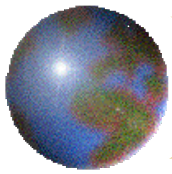
- Let's return to our Taxi driver.
- He's dropped us at our destination and then what?
- He asks for payment for the service he's just provided…



Payment for Services

- Imagine you didn't have to buy servers or support them!
- Wow, utopia here we come…

- Why not simply pay for every IT service you need, when you use it?



Questions and Discussion

- Thanks for listening
- Hope I've given you some ideas

- *What are you going to do next week?*