



THE UNIVERSITY OF  
**NEWCASTLE**  
AUSTRALIA

FACULTY OF  
ENGINEERING AND  
BUILT ENVIRONMENT



[www.newcastle.edu.au](http://www.newcastle.edu.au)

# Dynamic Transactional Workflows in Service- Oriented Environments

David Paul, Frans Henskens, Michael Hannaford

# Booking a holiday

---







# ACID Properties

Atomicity

Consistency

Isolation

Durability

# Relaxing the ACID properties



<http://www.geograph.org.uk/photo/881499>



# Describing Transaction Support

---

- Enquire
  - Prepare
  - Commit
  - Compensate
  - Callback
-



# Negotiating Contracts

Request Templates

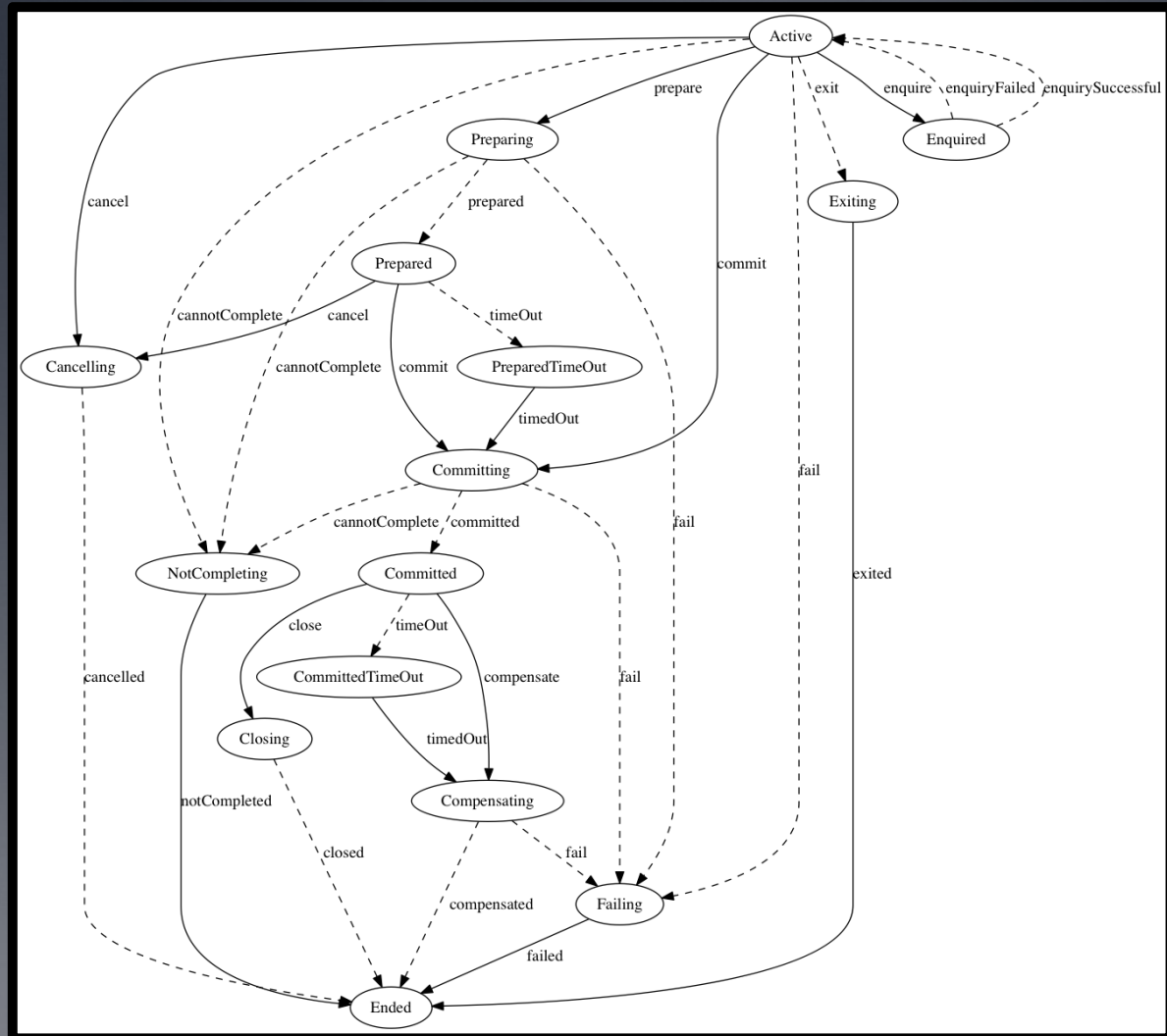
Choose template

Create contract

Send contract



# Using Dynamic Transactions



# Combining Multiple Interactions

---

$W$	$::=$	$done$	(success)
		$abort$	(failure)
		$W W$	(parallel)
		$W;W$	(sequence)
		$W,W$	(alternative)
		$(p)(s,c,u)$	(client interaction)

---



# Results

---

- Traditional transactions work poorly on the Web
  - Dynamic transactions benefit consumers *and* providers
-

# Conclusion

---

“If necessity is the mother of invention, it’s the father of cooperation. And we’re cooperating like never before.”

- *John Ashcroft*

---