



Manaaki Whenua
Landcare Research

Integrated catchment management (ICM)

integration, knowledge management,
and the role of collaborative learning

... in New Zealand



Chris Phillips

Will Allen, Glen Lauder, Margaret Kilvington
and Andrew Fenemor

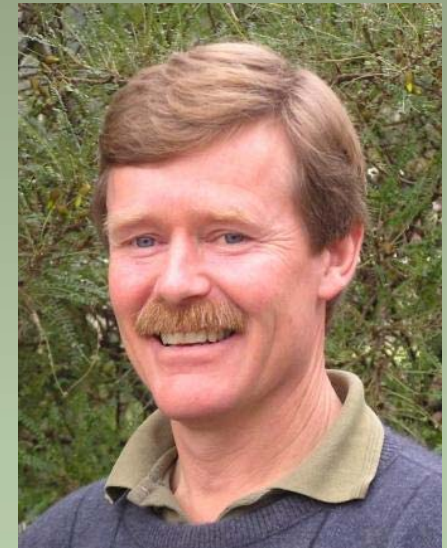




Will Allen



Margaret Kilvington



Andrew Fenemor



Glen Lauder



Outline

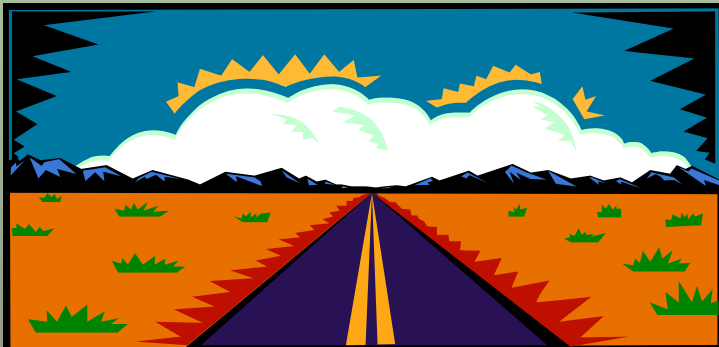
- Catchment = watershed
- My journey
- Context around ICM
- The ICM Motueka research programme
- ICM – a collaborative approach
 - Knowledge management (KM)
 - Collaborative learning
 - Integration
- Where have we got to - successes
- Wrap up and takeaways



My journey or....

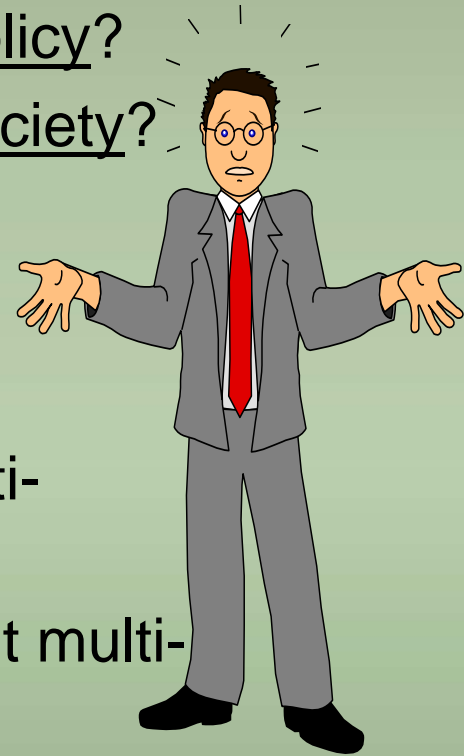
... how I am turning into one of you!

- Physical scientist
- Webmaster
- Push – build it and they will come
- KM in organisations
- The light bulb goes on
- Is there a parallel?
- What can we learn from KM for ICM?



Emerging issues in natural resource management

- How do we bridge the gap between science & policy?
- How do we bridge the gap between science & society?
- How do we make science useful?
- How do we move from inter- to multi- to trans-disciplinarity?
- How do we create science teams to conduct multi-disciplinary research?
- How do we create science institutions to carry out multi-disciplinary research?



Emerging trends in natural resource management



The social face of catchment management

- **Learning communities and organisations**
- **Knowledge management**
- **Integrated and interdisciplinary approaches**



INTEGRATED CATCHMENT MANAGEMENT

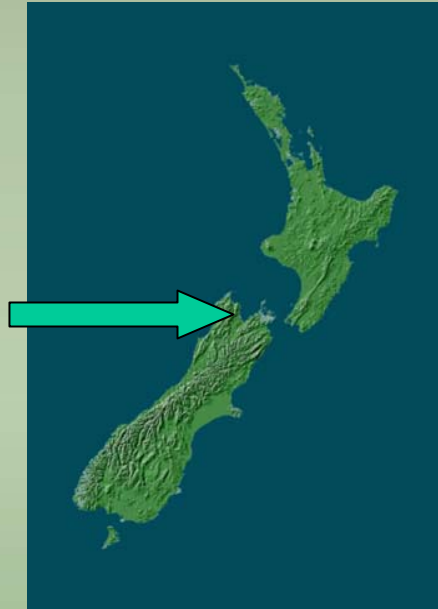
for the

Motueka River

• ridge tops to the sea •

<http://icm.landcareresearch.co.nz/>

Where is the Motueka?



Ridge tops to the sea



ICM Motueka Research Programme

<http://icm.landcareresearch.co.nz>

Goal: undertake research to help improve the management of land, freshwater, and near-coastal environments in catchments with multiple, interacting, and potentially conflicting land and water uses.



Motueka Catchment Issues

- Competition for scarce resources
- Influence of forestry on water & sediment
- Effects of gravel harvesting
- Concern about microbial and nitrogen levels
- Aquatic biota decline
- Use of riparian zones for multiple purposes
- Marine intensification
- Cumulative effects
- Urban-rural divide
-

Much the same types of resource management issues you can find in any watershed anywhere in the world!

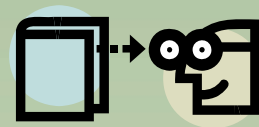


Knowledge management (KM)

cultivating conversations,



knowing what we know,



knowing who knows what,



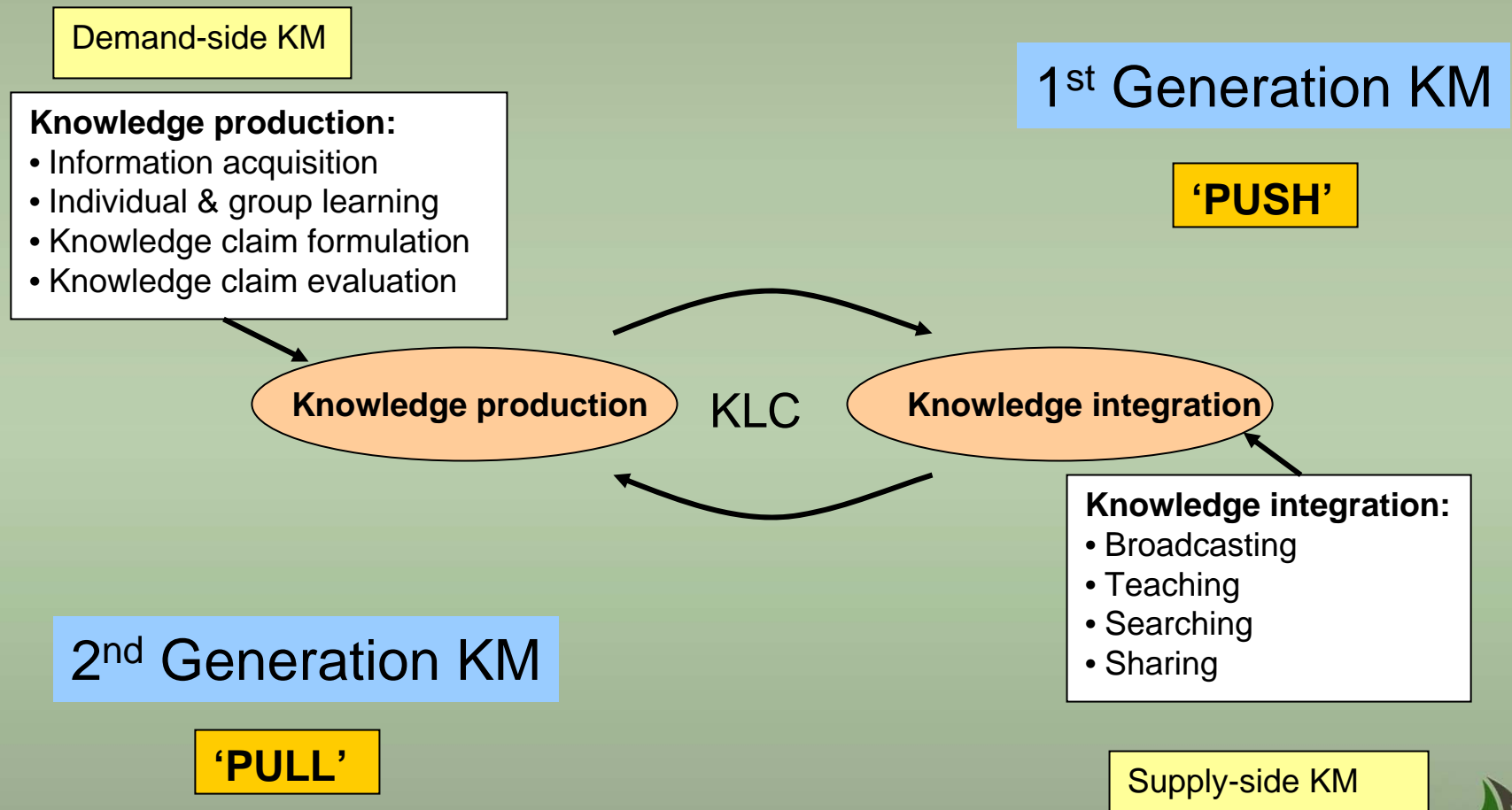
knowing what's going on



flexible systems for support



Knowledge life cycle



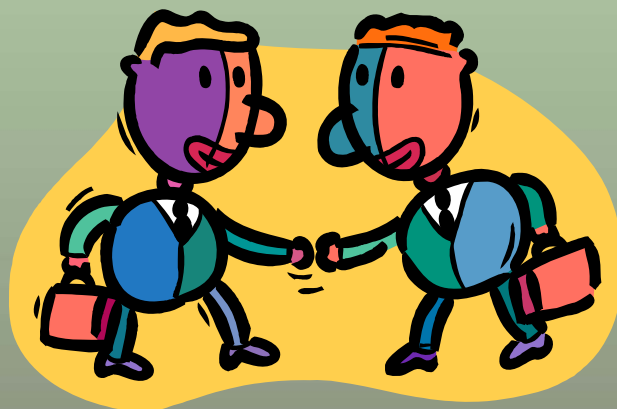
Elements of the Knowledge Life Cycle (KLC) (modified from fig 3.7, McElroy 2002)



Collaborative or social learning

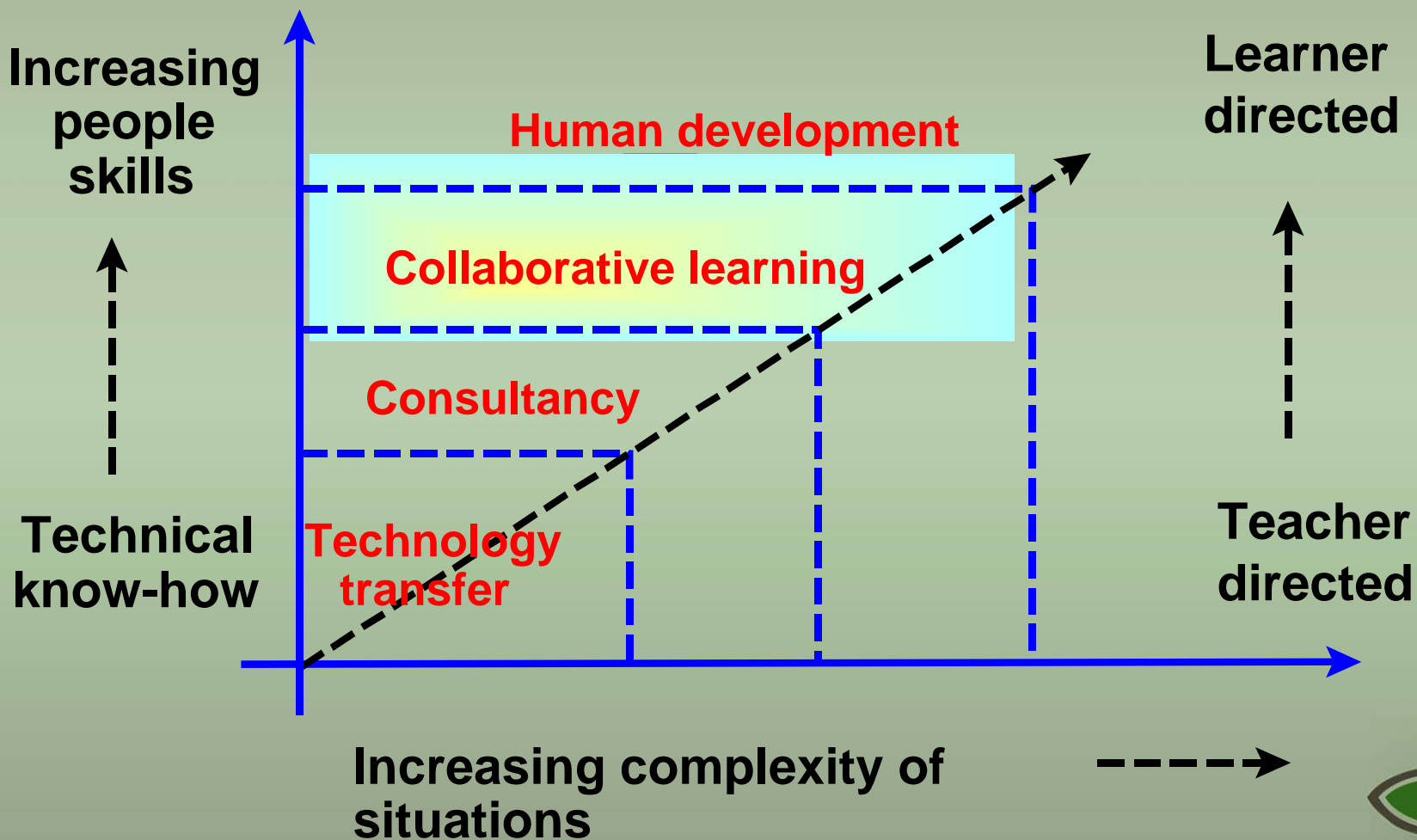
“Learning that occurs only when people engage one another, sharing diverse perspectives and experiences to develop a common framework of understanding and basis for joint action”.

Exploring social learning in the development of collaborative natural resource management. (Thesis, 2001. Tania Marie Schusler)



Different approaches to developing and sharing information for decision making

(adapted from Van Beek & Coutts 1992)



What is it?

Integration

Too hard!



JDI - Just do it!



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What might successful integration look like?

- science disciplines working together – collaborative learning?
- scientists & end-users widen their perspectives
- planning processes combine science-based knowledge & community expectations
- solutions to problems with reducing timeframes
- generating approaches that can be applied elsewhere
- realisation that integration in ICM is as much about the **process** as the final outcome

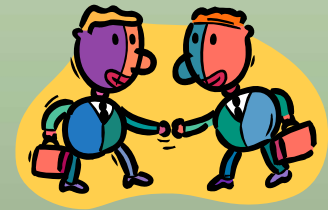
its as much about the journey as the destination



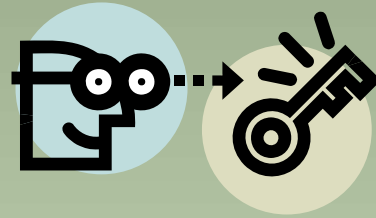
'Integrating' research elements



- Research links between environments:
 - Land - water
 - Freshwater - marine
 - Human - land & water
 - Iwi - pakeha
 - Groundwater - rivers
- Quadruple bottom line:
 - ecological – economic – social – cultural
- Whole system sustainability
- Collaborative learning, adaptive management
- IDEAS modelling
- An integrating theory for catchment management
- People doing cool stuff, having fun & learning



Successes



- understanding of biophysical processes
 - (i.e., what's there and how it works)
- role of social science
 - on-going facilitation and keeping us on the pathway
- understanding of integration
- multi-pronged communication
- linking science with catchment players
- building trust & building relationships
 - 'walking alongside' others on the journey
- breaking down institutional barriers



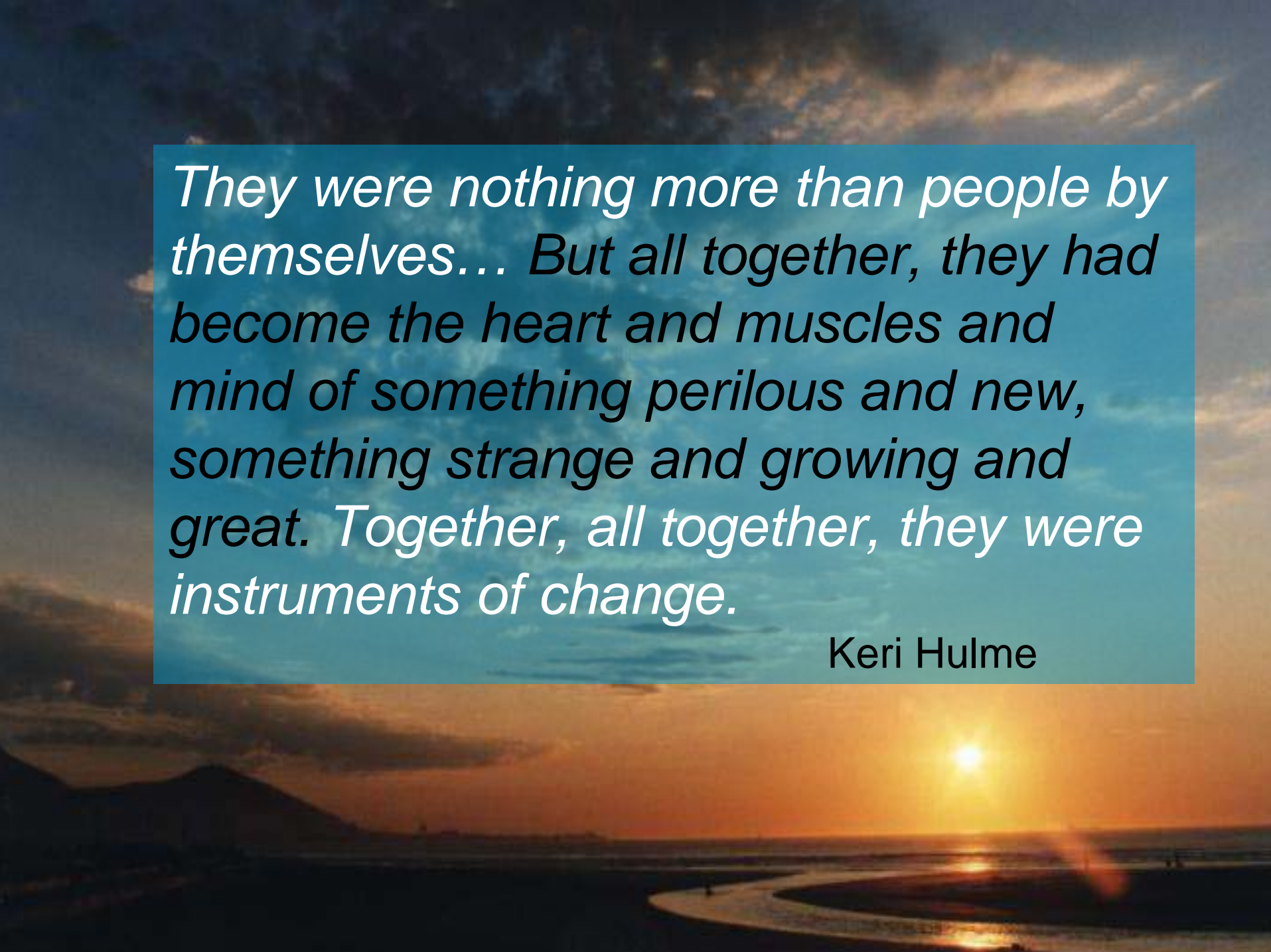
Key messages

- Innovative approach but not rocket science
- Inter- (multi-) (trans-) disciplinary – big melting pot
- Partnerships, trust, relationships
- Stakeholders
- Issues analysis
- Goal setting
- Takes time – longer than most realise
- Dialogue is important – F2F and technology



In the end it's all about people!



A sunset over a body of water with mountains in the background. The sun is low on the horizon, casting a golden glow across the sky and water. The sky is filled with soft, wispy clouds. The water is dark, with a few small figures visible in the distance. The mountains are silhouetted against the bright sky.

They were nothing more than people by themselves... But all together, they had become the heart and muscles and mind of something perilous and new, something strange and growing and great. Together, all together, they were instruments of change.

Keri Hulme

The final takeaway

Knowledge management
+
collaborative learning
+
integration
=
ICM success

