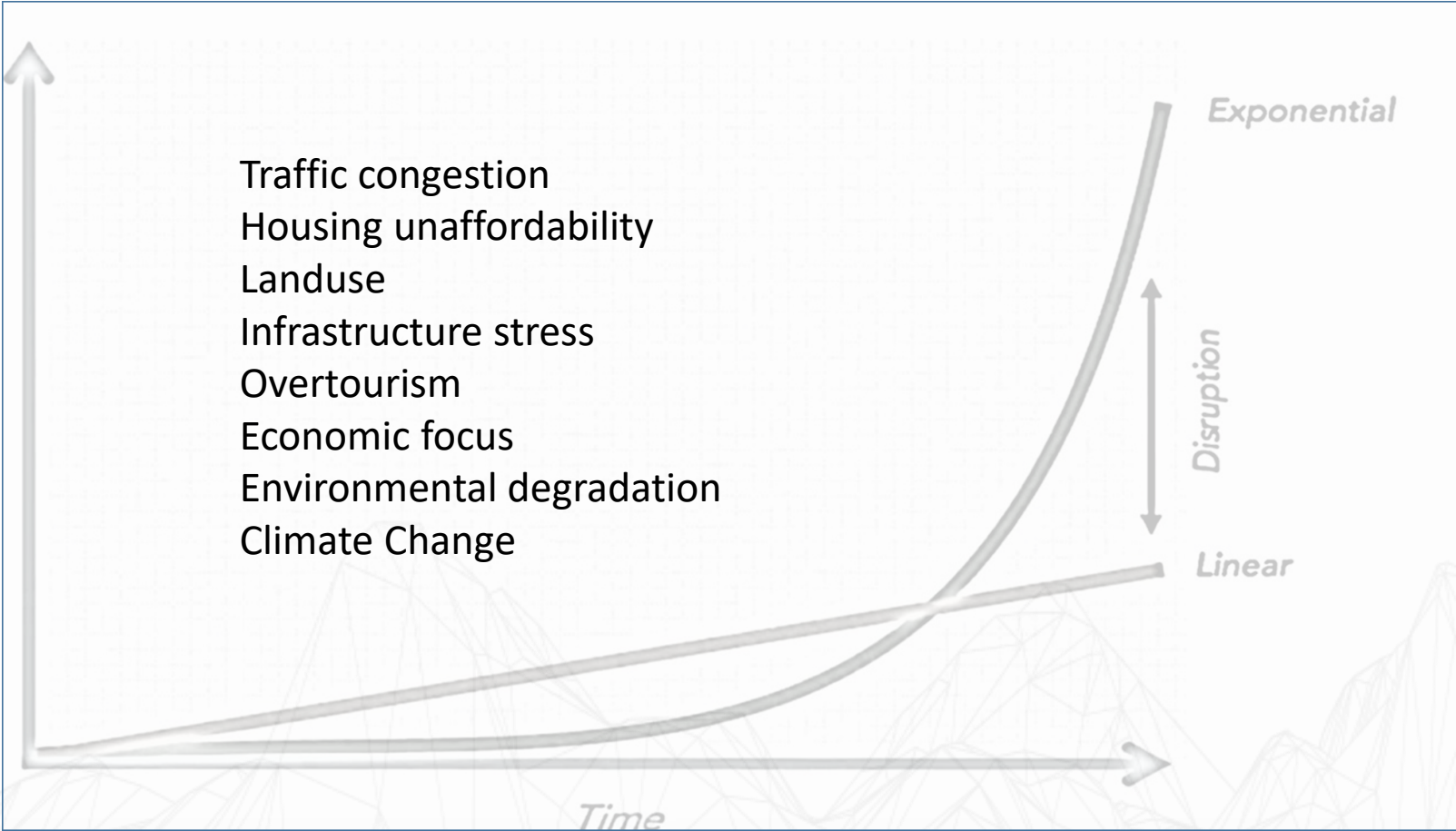

A Systems Approach

Seeing our systems through a transport lens.

Innovation: Disruptive or sustaining?

Systemic issues. Transport lens



Transport as a lens



Otago Daily Times

News

Sport

Life & Style

Entertainment

Business

Regions

Friday, 21 December 2018

'Extremely frustrating': Red tape delays fix for Queenstown's traffic woes

Sustain or disrupt?

- **Sustaining innovation**
 - Doing the same thing better

- **Disruptive innovation**
 - Doing new things that make the old things obsolete

Disruptive tech tipping point

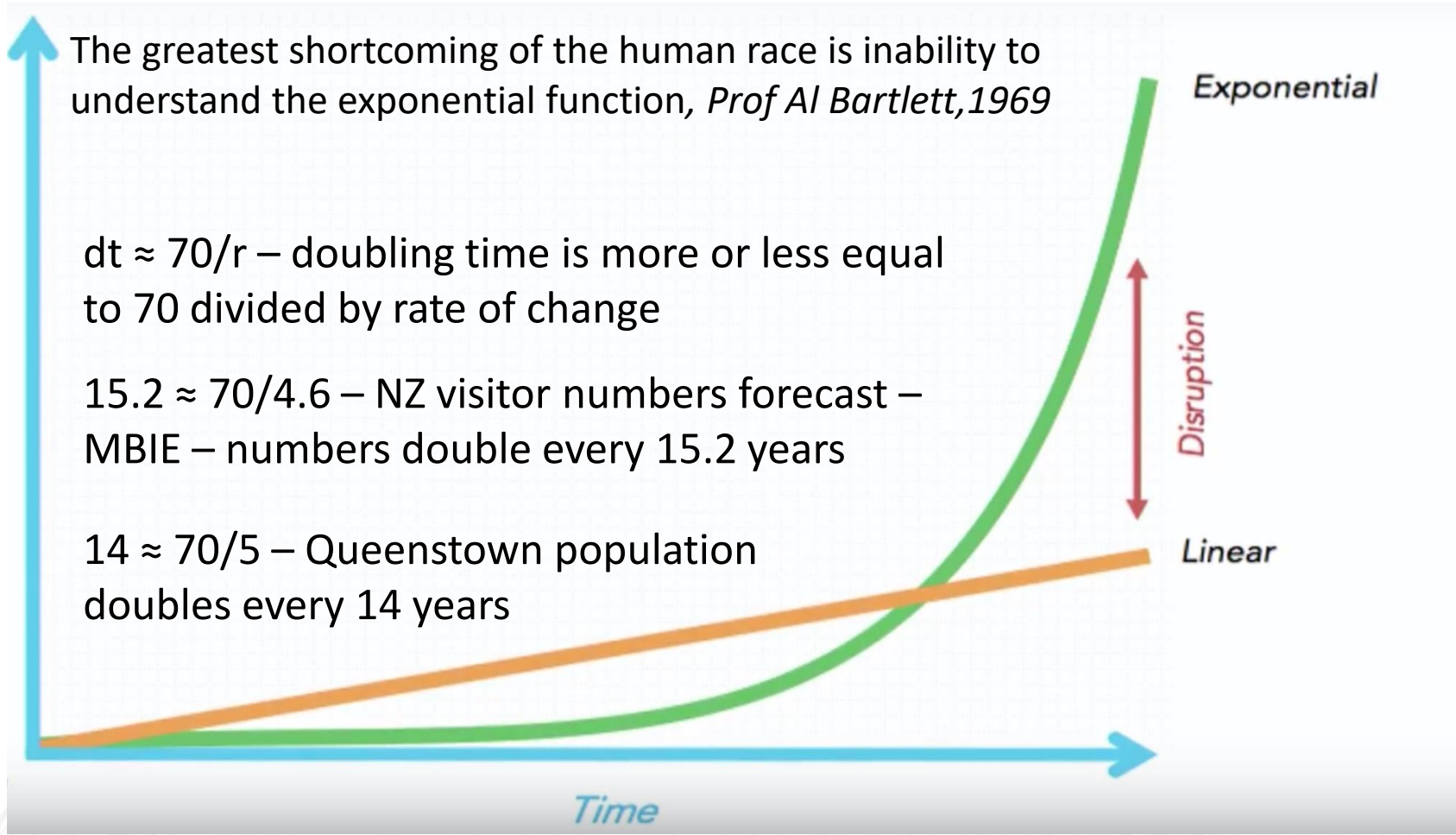
Easter morning 1900: 5th Ave, New York City. Spot the automobile.



Easter morning 1913: 5th Ave, New York City. Spot the horse.



Exponential growth in Queenstown





What is the full cost of this commute?

King George Skytrain Station

HOW MUCH DOES THIS 5KM COMMUTE COST SOCIETY IF YOU...



DRIVE

You contribute charges/taxes.
Society pays for emissions, the infrastructure you drive on, noise pollution, congestion and the risk of an accident.

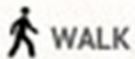
driving costs society **\$2.78**



BUS

You contribute fares.
Society pays for emissions, infrastructure, operation costs, noise pollution, congestion and the risk of an accident.

bussing costs society **\$0.38**



WALK

You contribute savings to the healthcare system and improved productivity from exercise.
Society pays for the risk of pedestrian accidents.

walking saves society **\$1.08**



BIKE

You contribute taxes on bicycle gear and maintenance, savings to healthcare system, improved productivity from exercise.
Society pays for risk of bike accidents.

biking saves society **\$0.75**

HOW MUCH DOES THIS 5KM COMMUTE COST YOU IF YOU...



DRIVE

You pay for travel time, operating costs (fuel, maintenance, tires, insurance, license and registration, depreciation, financing), your risk of an accident.

driving costs you **\$6.47**



BUS

You pay for wait time, travel time, fares, your risk of an accident.

bussing costs you **\$8.00**



BIKE

You pay for travel time, operating costs (bike gear, maintenance), your risk of an accident.
You gain health and longer life expectancy from exercise.

biking costs you **\$3.70**



WALK

You pay for travel time, your risk of an accident.
You gain health and longer life expectancy from exercise.

walking costs you **\$7.93**

Fraser Hwy & 156 Street

How much does your commute cost (or save) society?

Every time you travel you put money into the system, but you also cost the system. Your contribution to and burden on the system differs depending on how you travel.

For example, when you ride the bus you pay a fare – money into the system. Your burden on the system includes the cost of operating the bus, and also less obvious impacts like emissions and noise pollution.

By looking at the ratio of what we put in versus what we cost the system, we see that different ways of travelling are more subsidized than others.

The practice of taking these less tangible costs and benefits into consideration and assigning them a dollar value is known as "full-cost accounting." While there are many ways of doing this, this infographic shows one example of how these costs and charges can be calculated.



How do we innovate here?



Barriers to innovation

- Transport hierarchy
- Power imbalance – central/local government
- Rudimentary/incomplete public and active travel networks
- District plans vs transport plans
- Landuse – greenfields vs brownfields
- Private car ownership rights

Barrier smashing

Consider the child, the older person, the mother,
the vulnerable

Consider the car as relegated to last century
Do this and innovation will follow.