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Symbiosis and Fibre Management

W PAC Presentation

November 2013



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Symbiosis



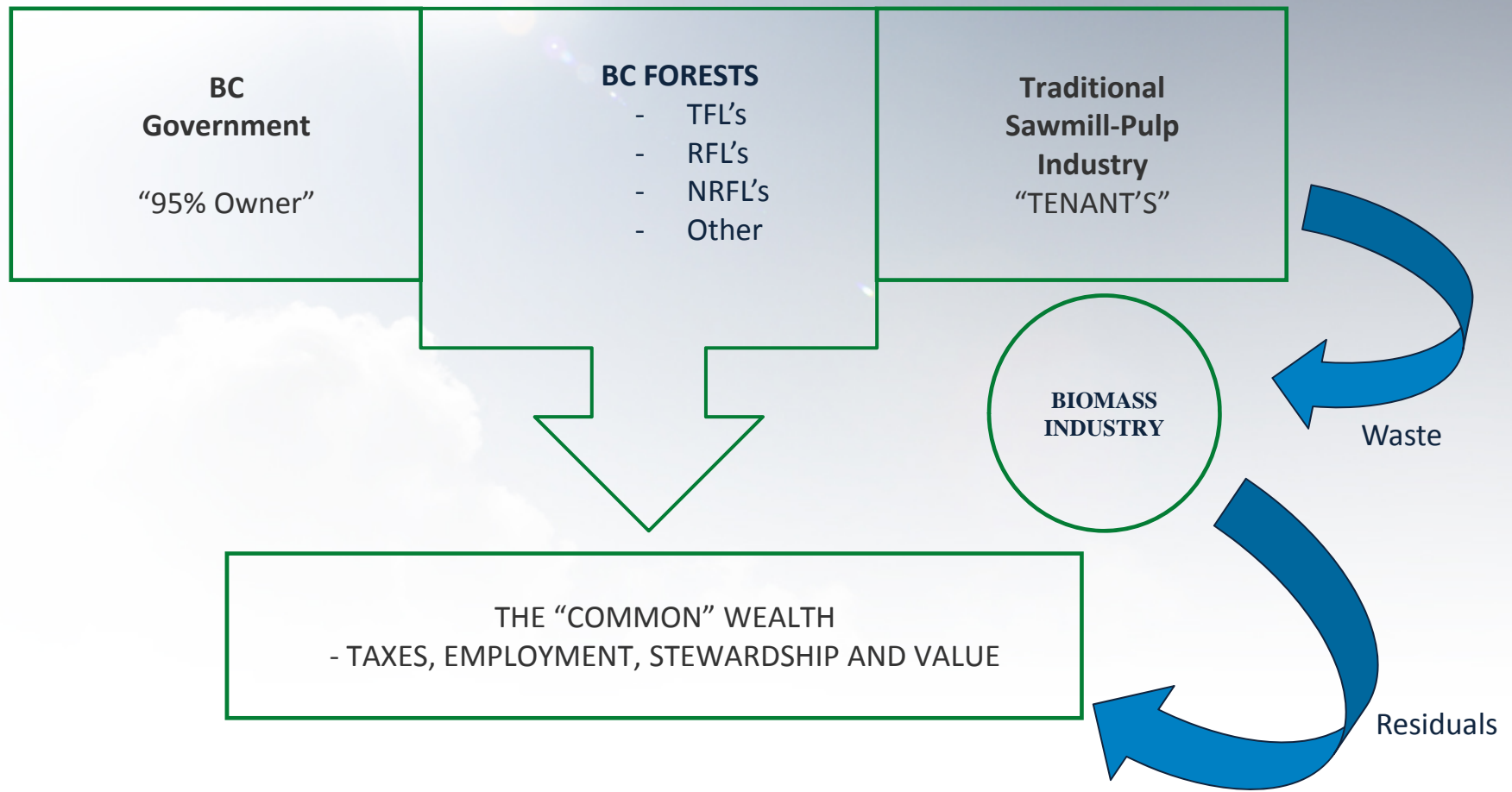
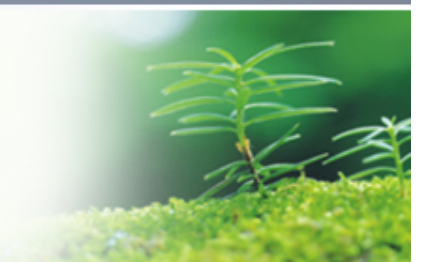
Symbiosis

(n) interaction between two different organisms living in close physical association, typically to the advantage of both



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The World We Live In





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Biomass - Perceived as a Free Rider



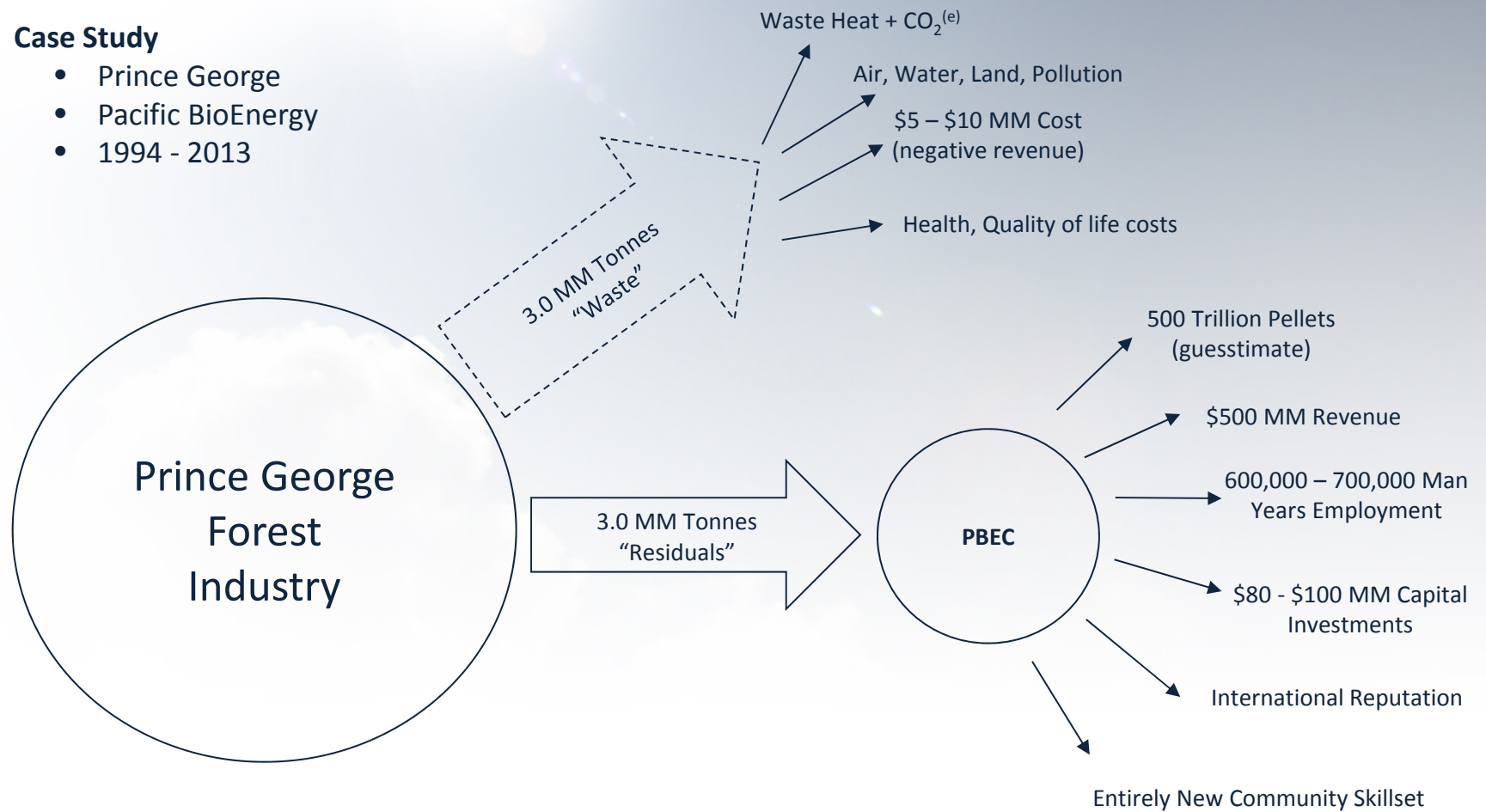


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Biomass is Value Add

Case Study

- Prince George
- Pacific BioEnergy
- 1994 - 2013





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Synergy Motivation Score Card

PERCEIVED INCENTIVES

- Regulatory
- Open Market Economics
- Public license – relations
- Enlightened self interest
- “Quick buck”

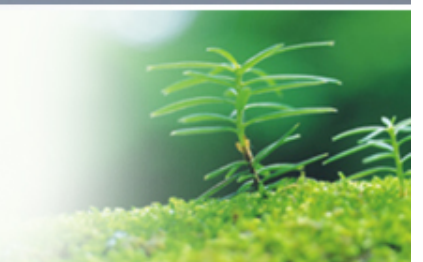
IMPACT

negligible
low
non-existent to low
low
high



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The Asset



- 75 MM cubic meters per annum sustainable harvest (107 MM bbl oil energy equivalent)
- 10 – 15 MM TPA Biomass Potential – “Waste” or “Feedstock”?
- 95% Crown owned (guesstimate)
 - 75% license and long-term tenure (majors)
 - 25% B.C.T.S.
 - 5% other
- World leadership in governance, sustainability, custody and competitive economics



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What's the Issue

"(This industry is like) the oil refinery industry without open market access to crude oil reserves....." J.P.G.

- Profitability being suppressed by "regulated" monopolies (fibre access and transportation)
- Growth constrained after "Proof of Concept" delivered
- Initially competitive new industry becoming uncompetitive (internationally)
- Ability to supply "waste management services" forestry and sawmill industry a disposal problem that is accelerating



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The Solution

What: Economic driven re-direction of the "waste stream" by the owner/regulator

How: license tenure made available to the biomass industry to create trading leverage for B2B accommodation/synergy

OR

\$15 CO₂^(e)/Tonne carbon tax on an incremental value basis applied to "wasted residuals"

- Forest Residuals
- Sawmill Residuals
- Power Stream Residuals (market differential test)



These Are Precedents

- ***“Forestry Ownership/Management” is a dynamic legislative activity reflecting the needs of changing times***

Colonization	1778	First European forest harvest (Captain Cook/Nootka Sound)
	1865	Land Ordinance Act - tenures
Timber Harvesting	1884	Timber Act - stumpage
	1888	Transferable licences
Fire Control	1901	Pulp licences
	1919	“Resin” licences * <i>*Resin licences? – biochemical industry</i>
Community Building	1937/38	Slash disposal regulations
	1945	Department of Forestry
Economic Expansion	1958	Anti collusion/bidding
	1980’s	Category II licences
Social Issues	1994	Forest Practices Code Act
	2002	Forest Revitalization Plan



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1913 or 2013?



Prince George Citizen Article – November 28, 1998

"From 1915.....Prince George (was) interested in establishing a pulp mill"

"To accommodate those plans (for a pulp mill in 1916) the provincial government set aside timber stands for the pulp mill's potential use"

"By 1927 those stands were in dispute. Six area sawmills believed their timber supply would be exhausted within five years and they would be forced to close down"

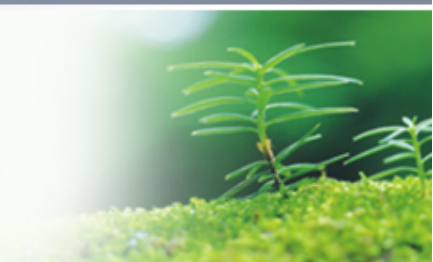
"(Minister) Pattullo declared....I see no reason why this (pulp timber licence supply) cannot be accomplished without injury to local milling interests....(which he saw as) a squatter's rights attitude"

"Pattullo's assessment was prudent because the sawmills carried on and (the) establishment of a pulp industry came four decades later"

(Excerpted from an article by Valerie Giles published in the Prince George Citizen November 13, 2013)

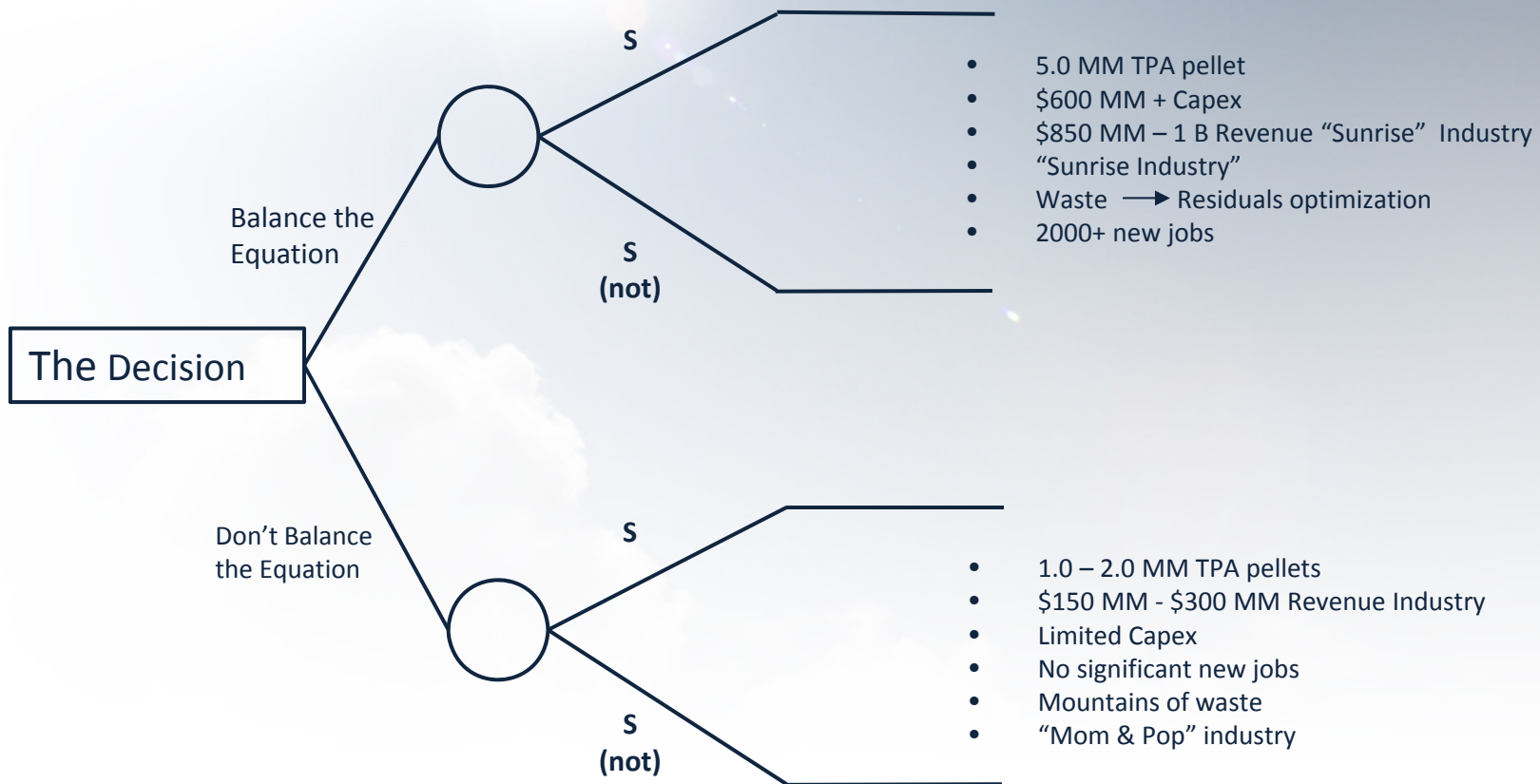


Decision "Tree"



2013

2016/2020





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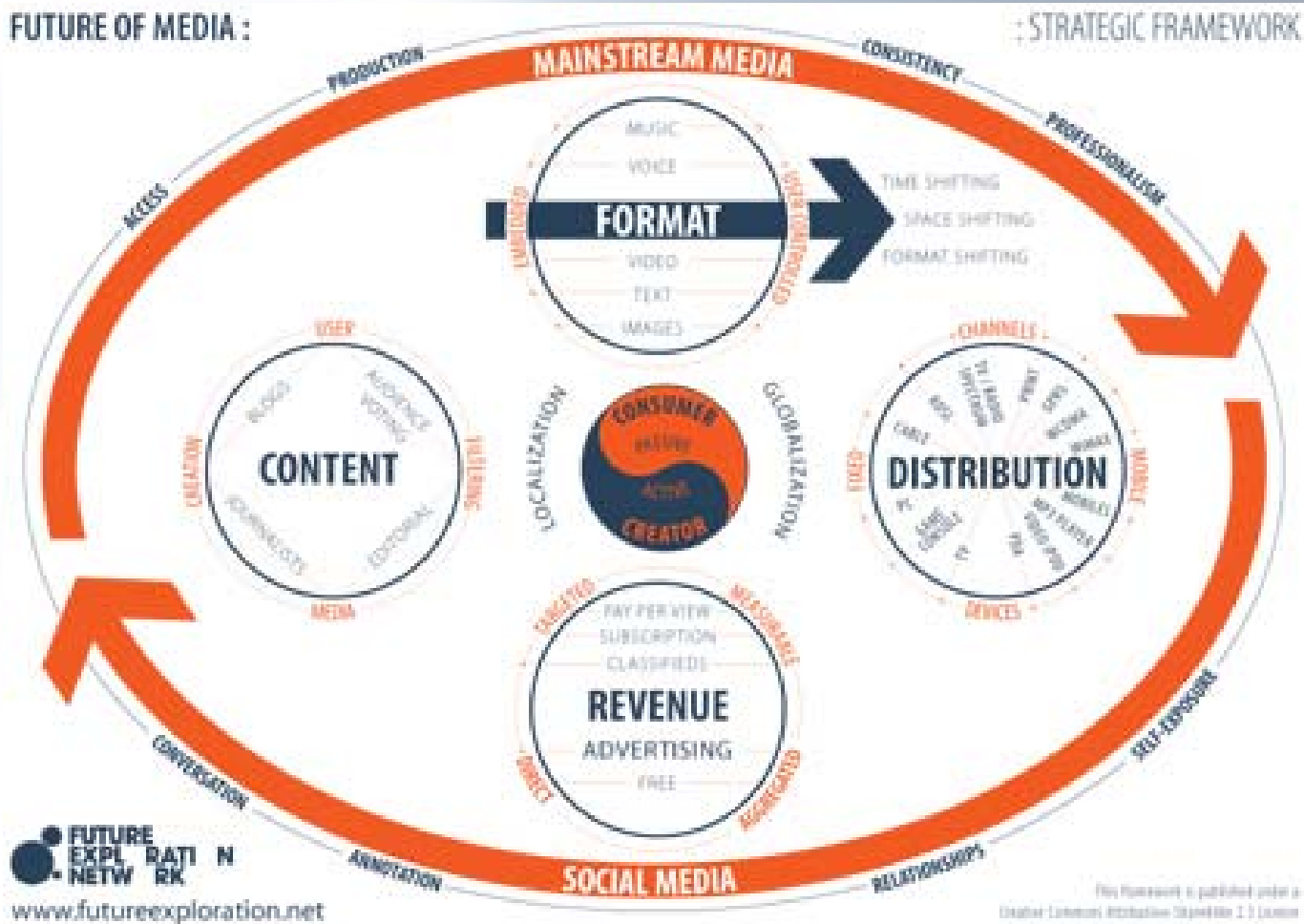
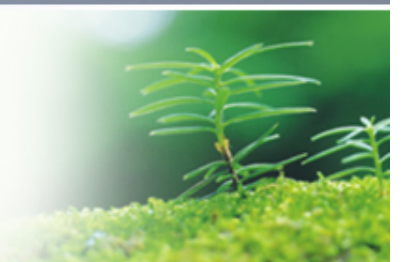
Synergy Can Be Fun





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Synergy is Always Confusing





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But....It's Always Exciting

