

Roadmap to Mobile Machinery Prognostics



— Dave Schings

Imagine...



.... if your mobile machinery could tell you if isn't feeling well.... and why...

Imagine...



....if your mobile machinery could tell you when to change fluids based on their condition....

Imagine...



....if your mobile machinery could tell you when a component has 230 hours of life left before it wears out....

You Could....

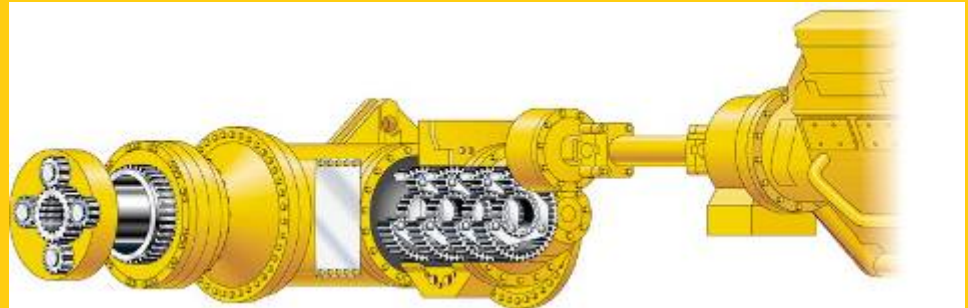
- Schedule maintenance at an opportune time while keeping the machinery production..... perhaps with some operational constraints
- Correct problems before they occur eliminating further damage when they do occur
- Manage your business by moving machines around to jobs with different load factors
- Expect delivery of any repair parts, not in local stock, to be delivered before the maintenance

Why Don't We Have This Now?

- Definition of true cost/value for functionality
- Requires additional sensors perceived as reliability problems – if they exist
- Requires additional on-board processing capacity
- Algorithms do exist or not sufficiently robust
- Uncertainty of structure loading for models
- Must work in all machine environment extremes – temperature and vibration
- Complex “back office” systems

Primary Systems of Interest

- Engine
- Transmission
- Axle
- Final Drive
- Wheel Group
- Brakes
- Steering
- Implement System
- Structure
- Work Tools

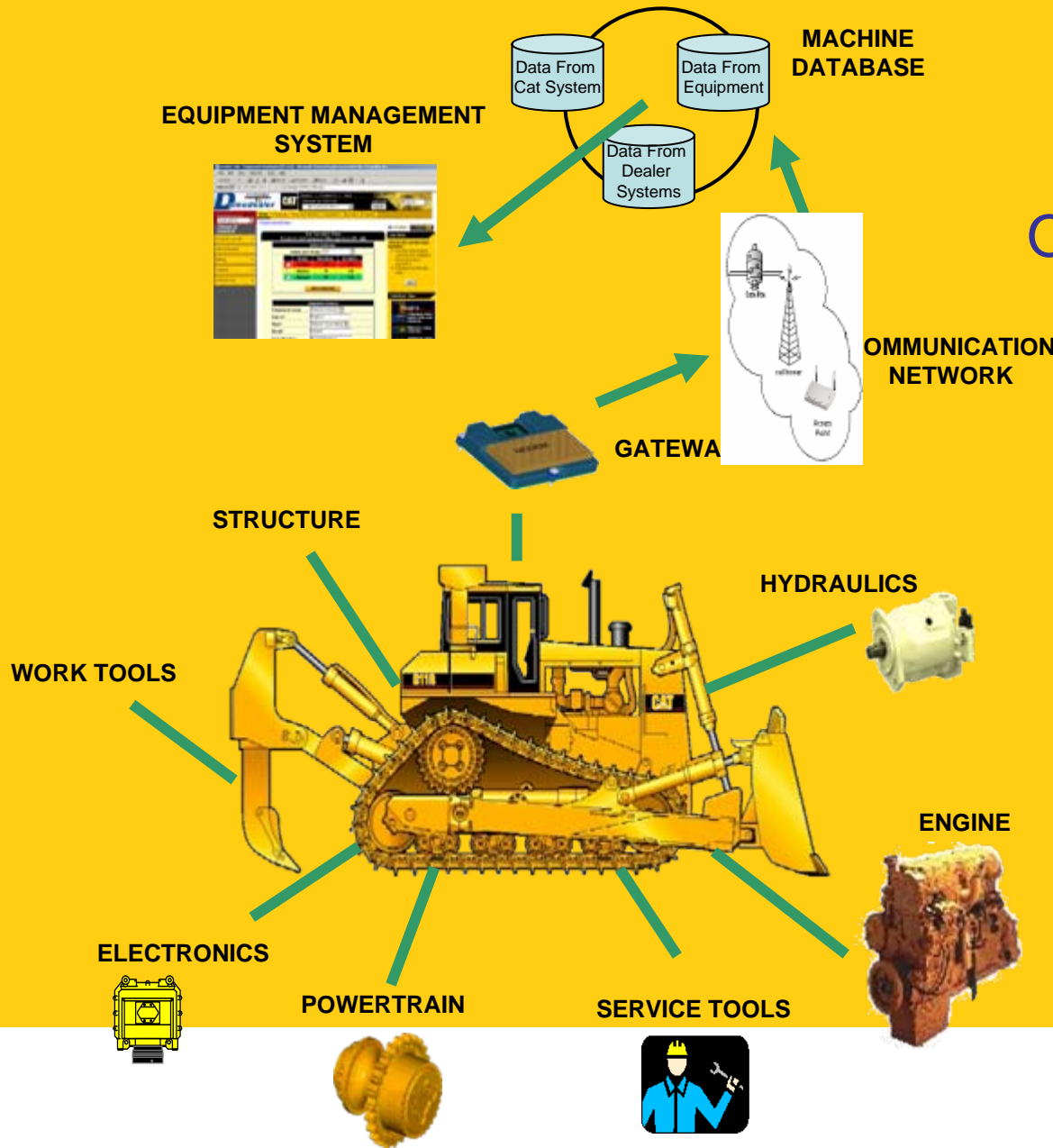


Implementation Path

Off-board Analysis & Decision



On-board Analysis



It's a long road with a few potholes,
but, we'll get there.....