



# An independent auditor's view on manufacturing QMS



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# Our focus

The independent PV  
module and inverter  
experts



Technical  
Diligence



Procurement  
Assistance

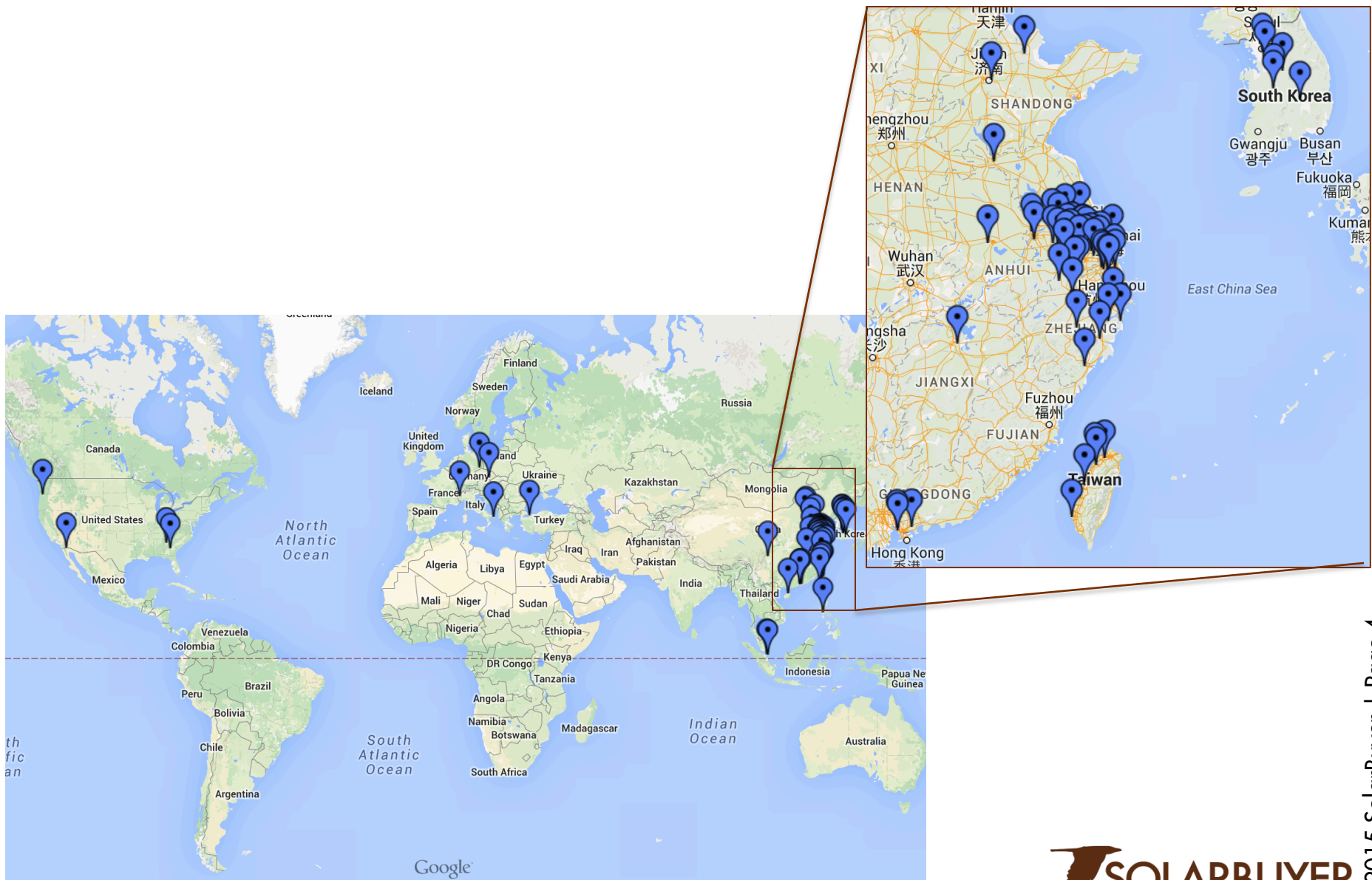


Quality  
Assurance

## Key stats

- 35 individual clients in 2014
- More than 70 manufacturers evaluated
- More than 150 in-depth quality audits conducted
- More than 100 years in-house PV experience
- Over \$2.5B in solar module transactions managed
- Quality assurance conducted on THOUSANDS of modules

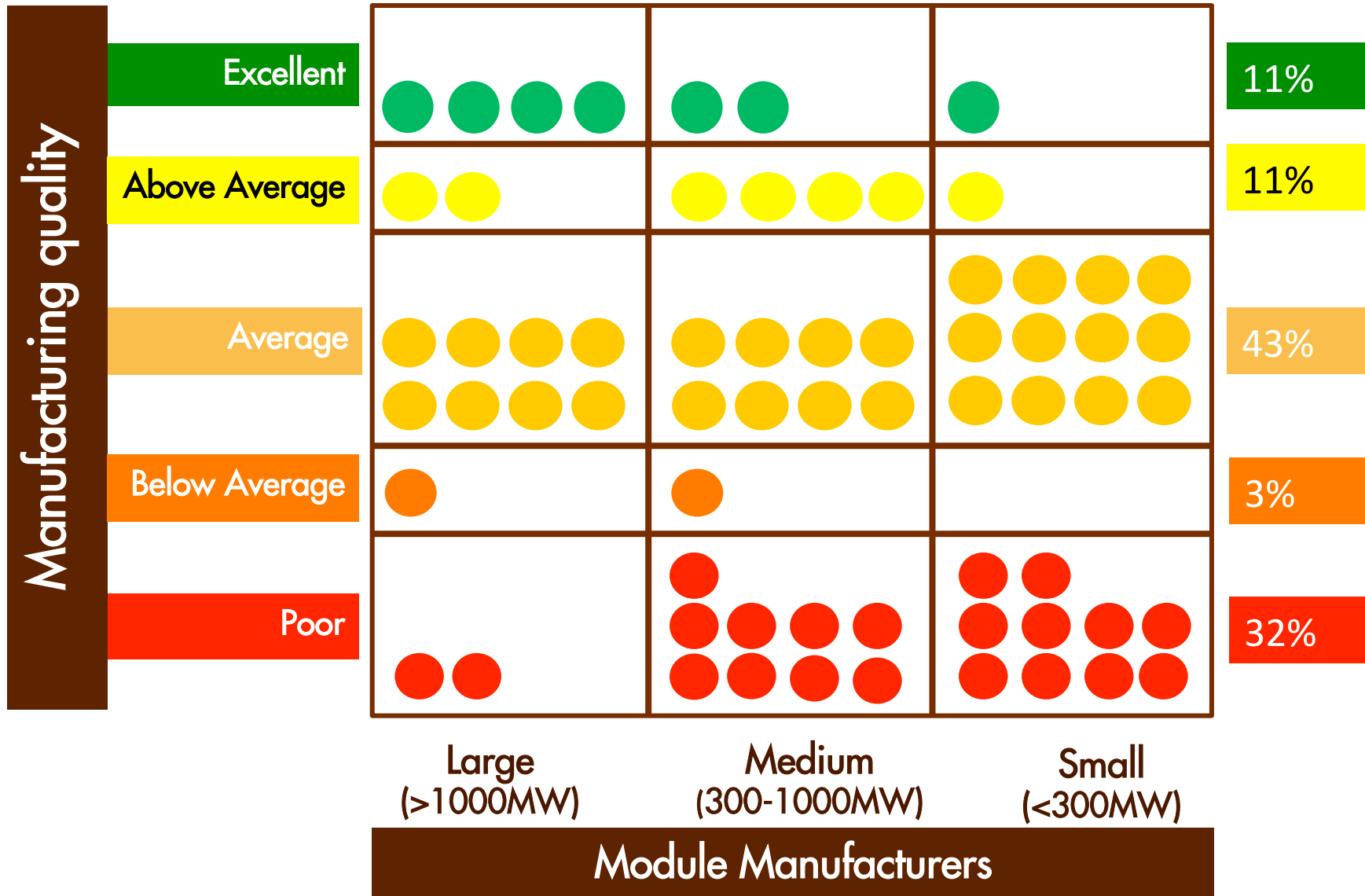
150 audits across the globe



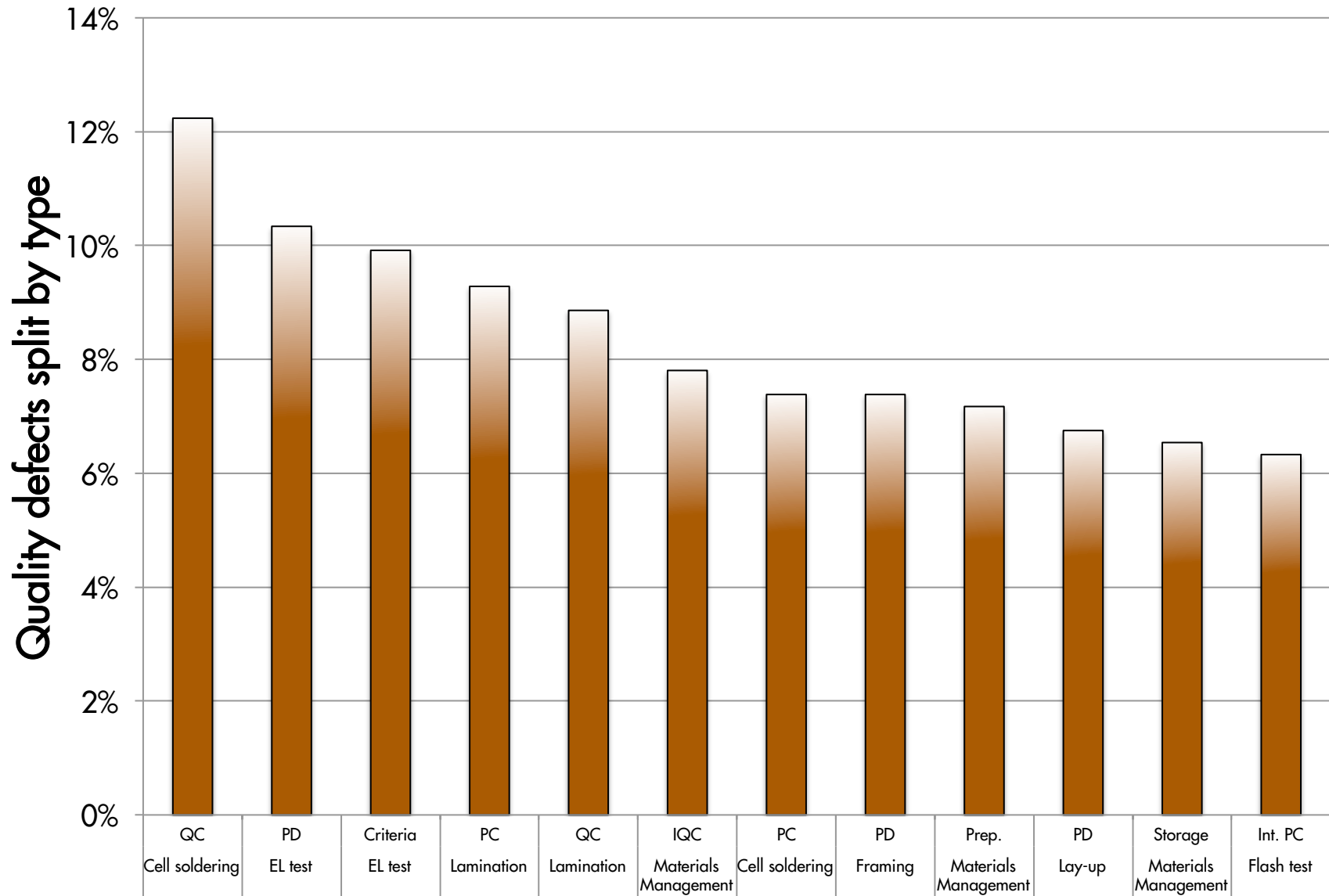
## Four key messages

1. Module quality is variable
2. There are common quality challenges
3. Latency is the major challenge
4. Quality will define bankability

# 1. Module quality is variable

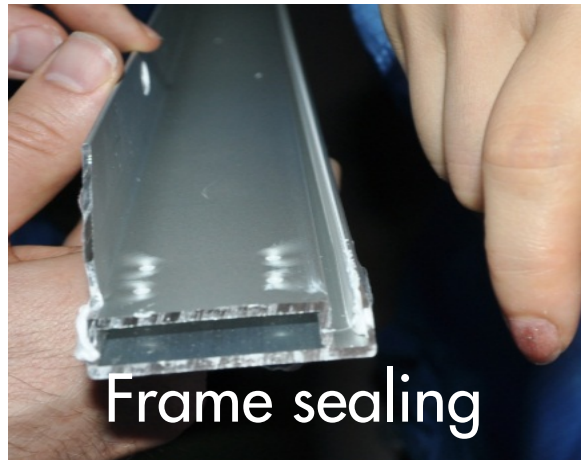
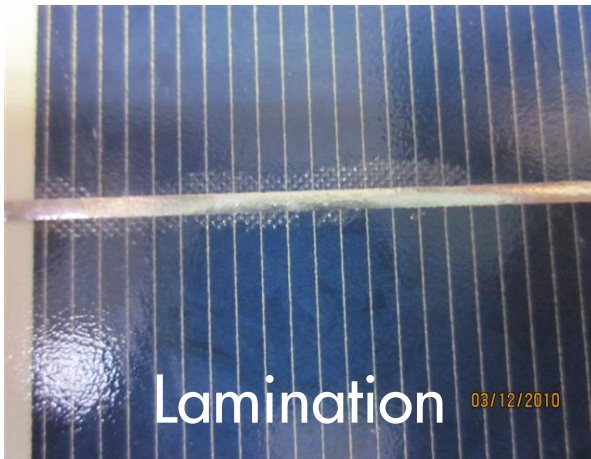
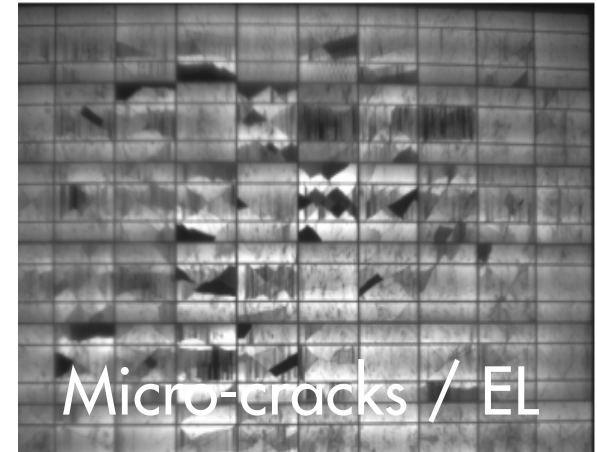
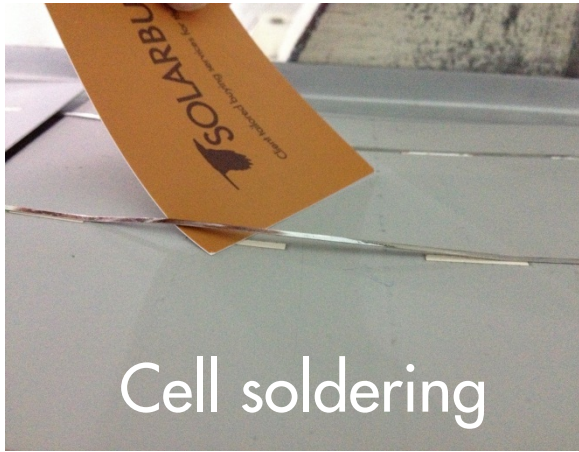


## 2. There are common quality challenges





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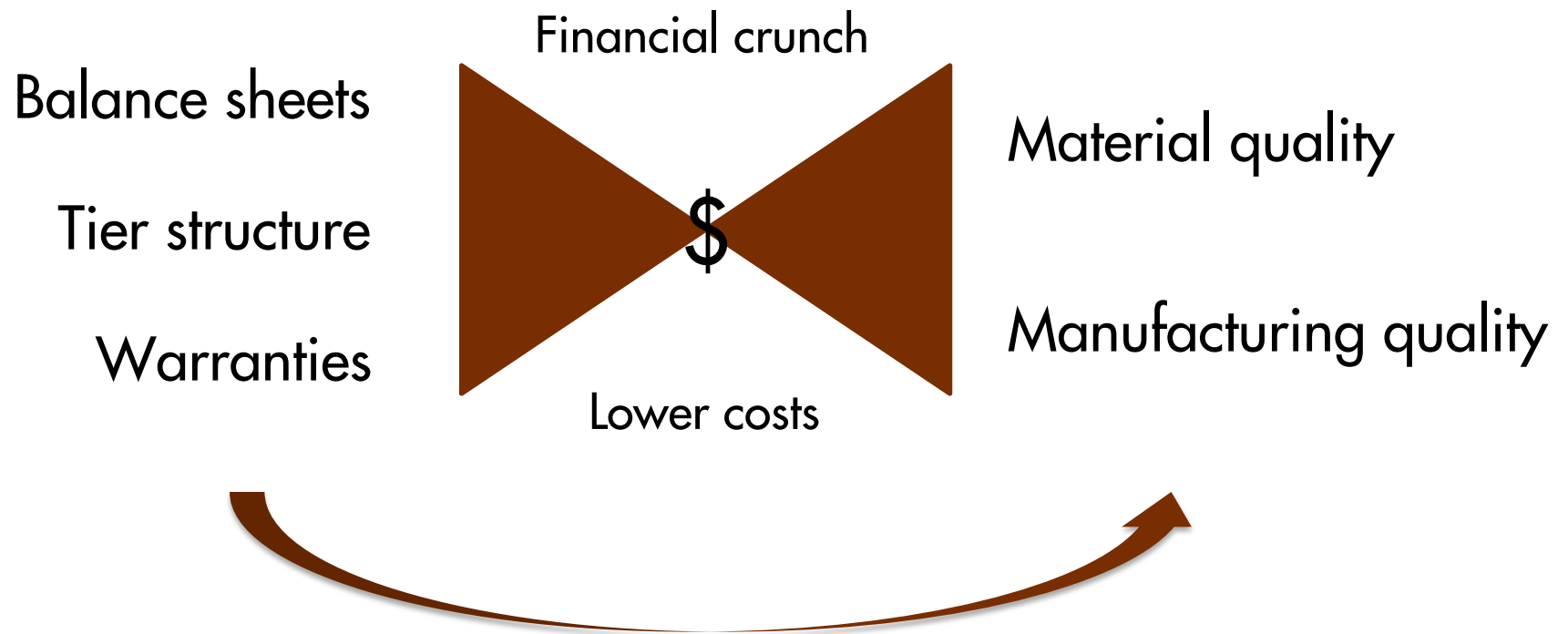




### 3. Latency is the major challenge

- Overt defects are well screened at time of manufacture
- Embedded latent defects may only appear after shipping or field exposure
- Latent defects caused by the following are challenging to manage:
  - Sub-standard material quality
  - Under- or over-soldering of cells
  - Inadequate lamination
  - Contamination
  - Mechanically weakened cells
- Predicting future performance loss or failure by latent defects is challenging

## 4. Quality will define bankability



As long as we have modules, we need quality modules





THANK YOU

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