

A SYSTEM OF IOT DEVICES TO PREVENT UNDER-LOADING / OVERLOADING OF RAILWAY WAGONS.

A PROBLEM STATEMENT BY COAL INDIA LIMITED

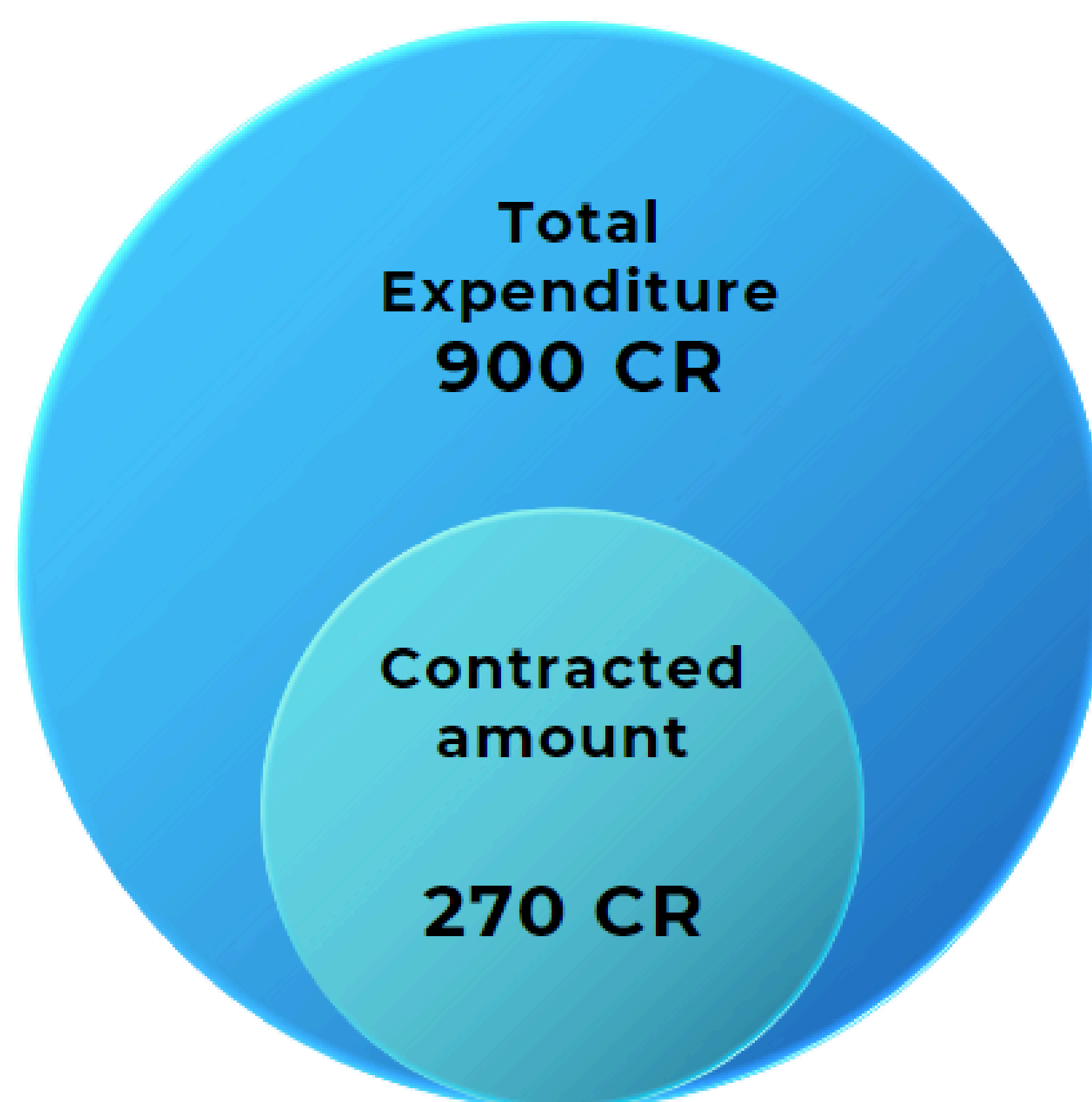




Introduction:

Coal India Limited has been supplying coal to its consumers by Rail where the wagons loaded through contractual means by a payloader which often results in **overloading** and **underloading** of railway wagons. In such cases credit for idle freight is adjusted in coal bills. Thus any idle freight for under-loading is borne by CIL.

During **2021-22**, the expense for under-loading was nearly **Rs.593 Cr.** whereas the contract for wagon loading itself was only **Rs.276 Cr.** which led to to a total cost of around **Rs.900Cr.** being borne by CIL out of which they had a net loss of around **Rs.600 Cr, i.e. 200%** of the initial amount.

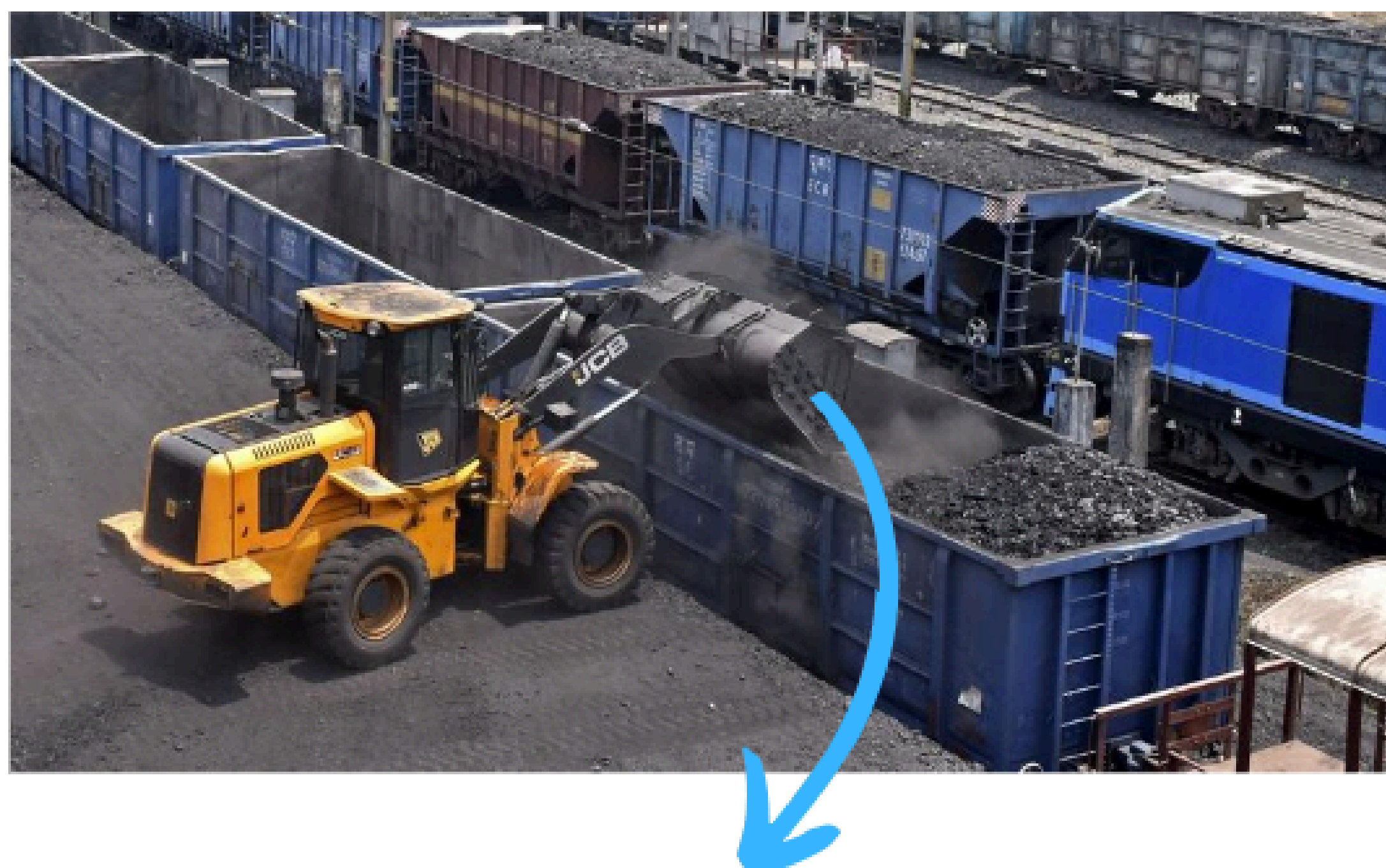


Cost incurred by CIL in FY 21-22 for loading of coal in wagons



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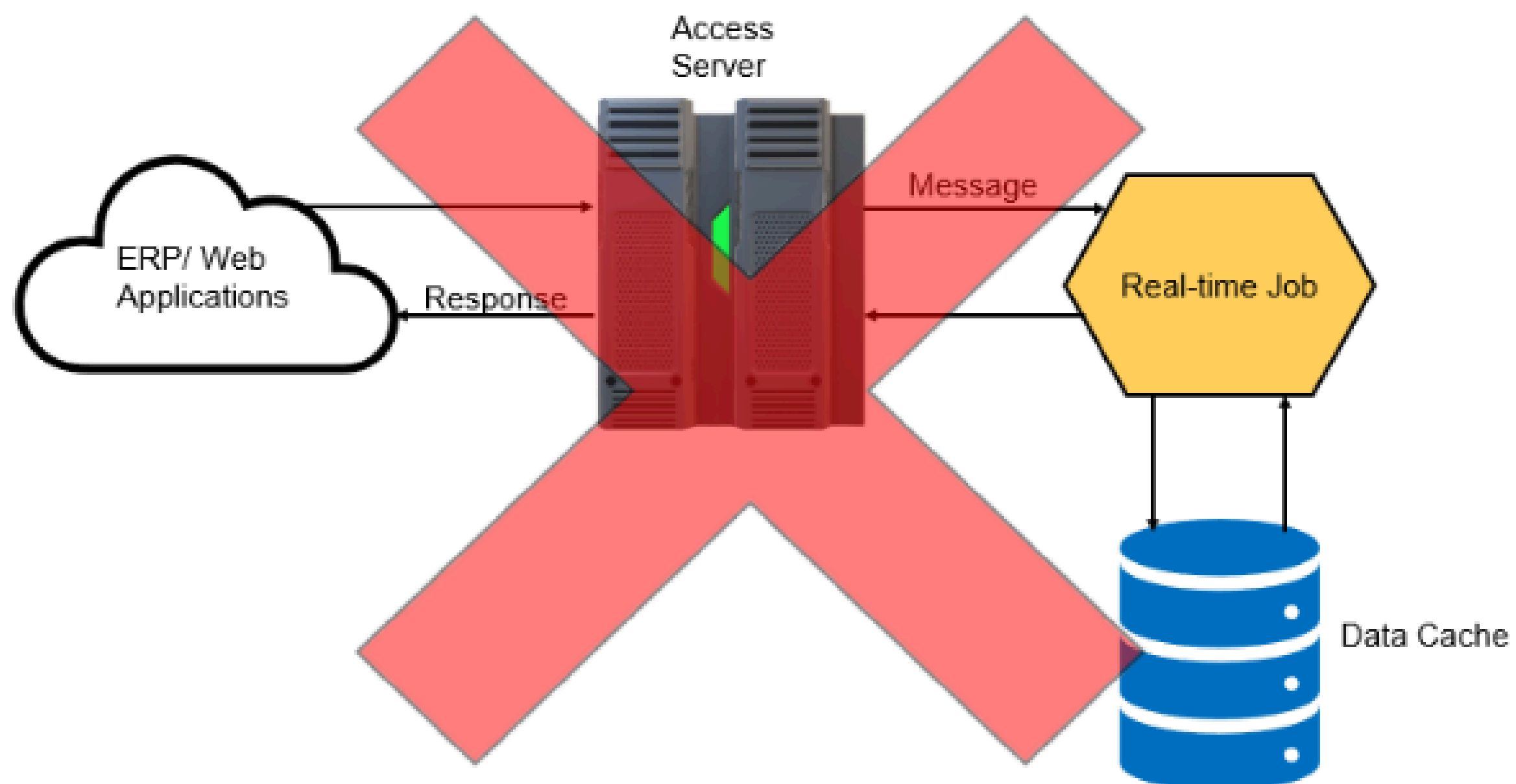
Problems:



Inaccurate and approximate loading due to lack of an on-site weight measurement system for goods.



Rampant embezzlement of goods



No real time access/logs for monitoring the goods



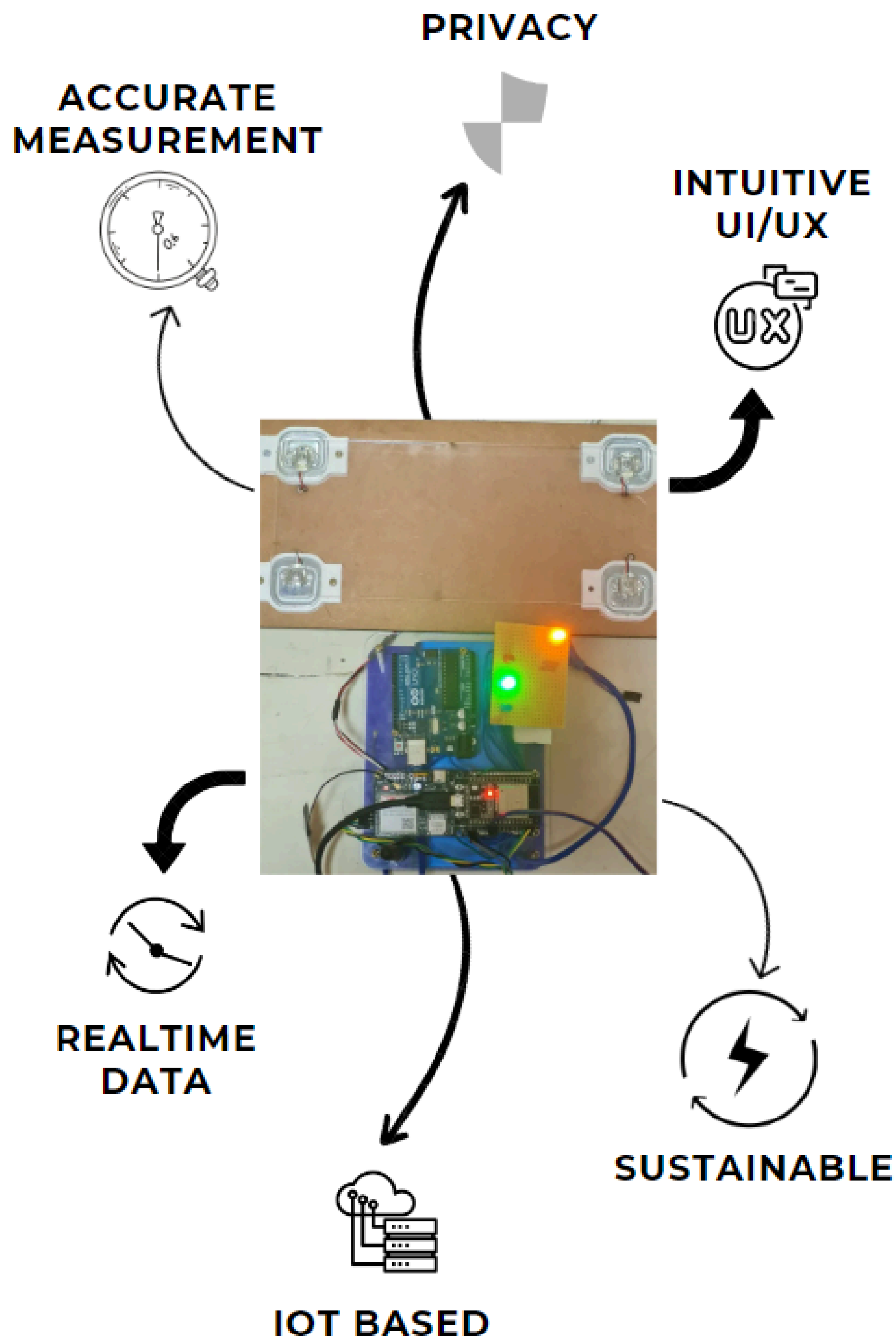
Excessive fuel cost



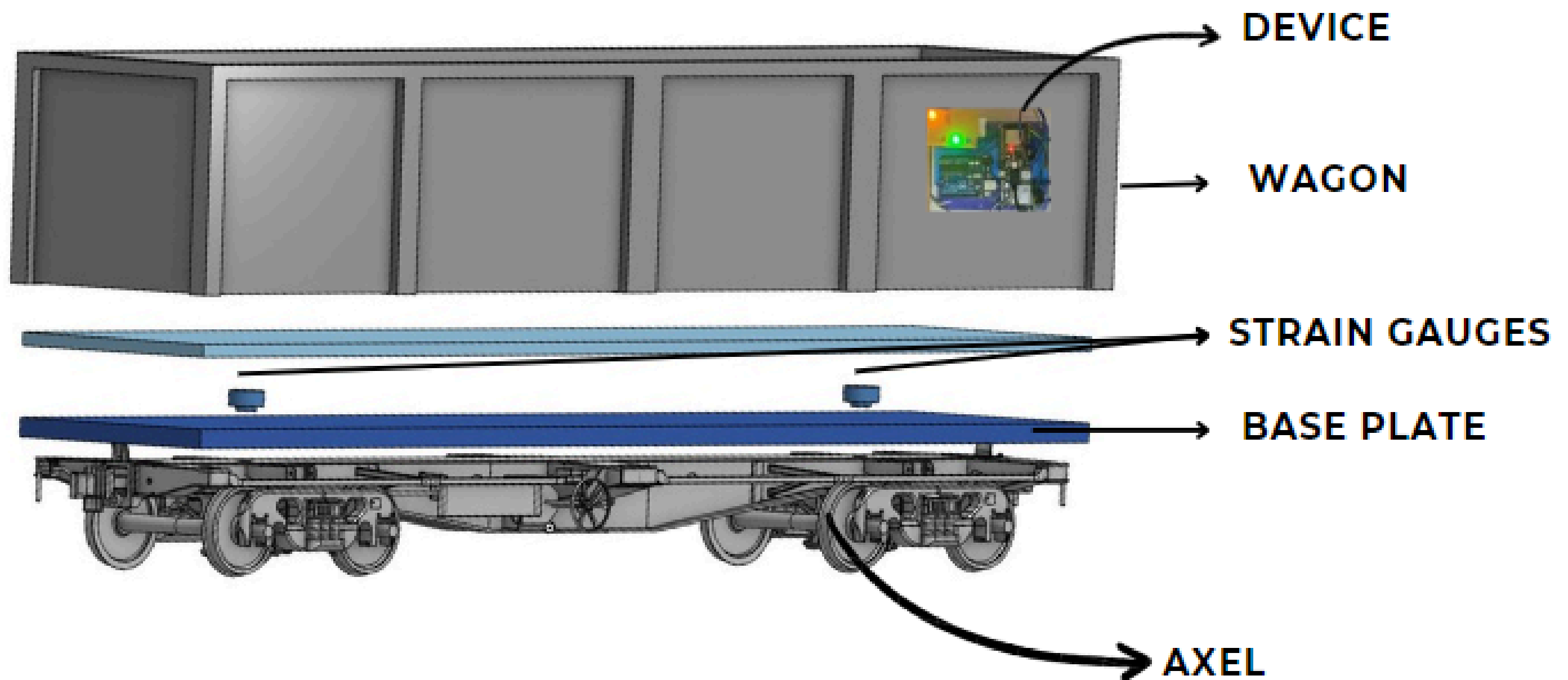
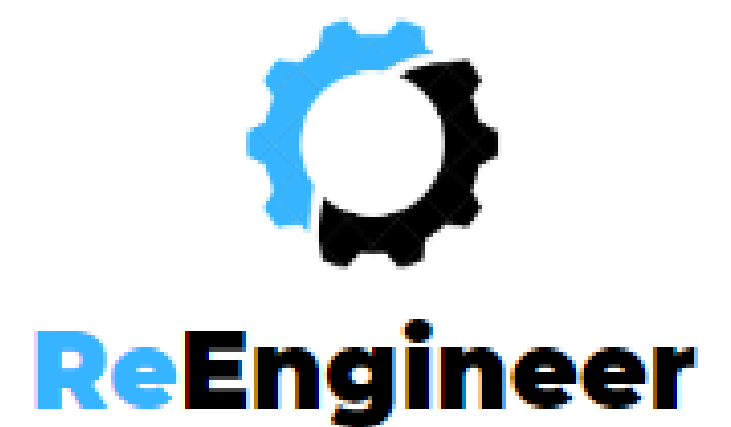
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Our Solution:

We have designed a **high-precision IOT integrated goods weighing mechanism** which will help us with the following:-

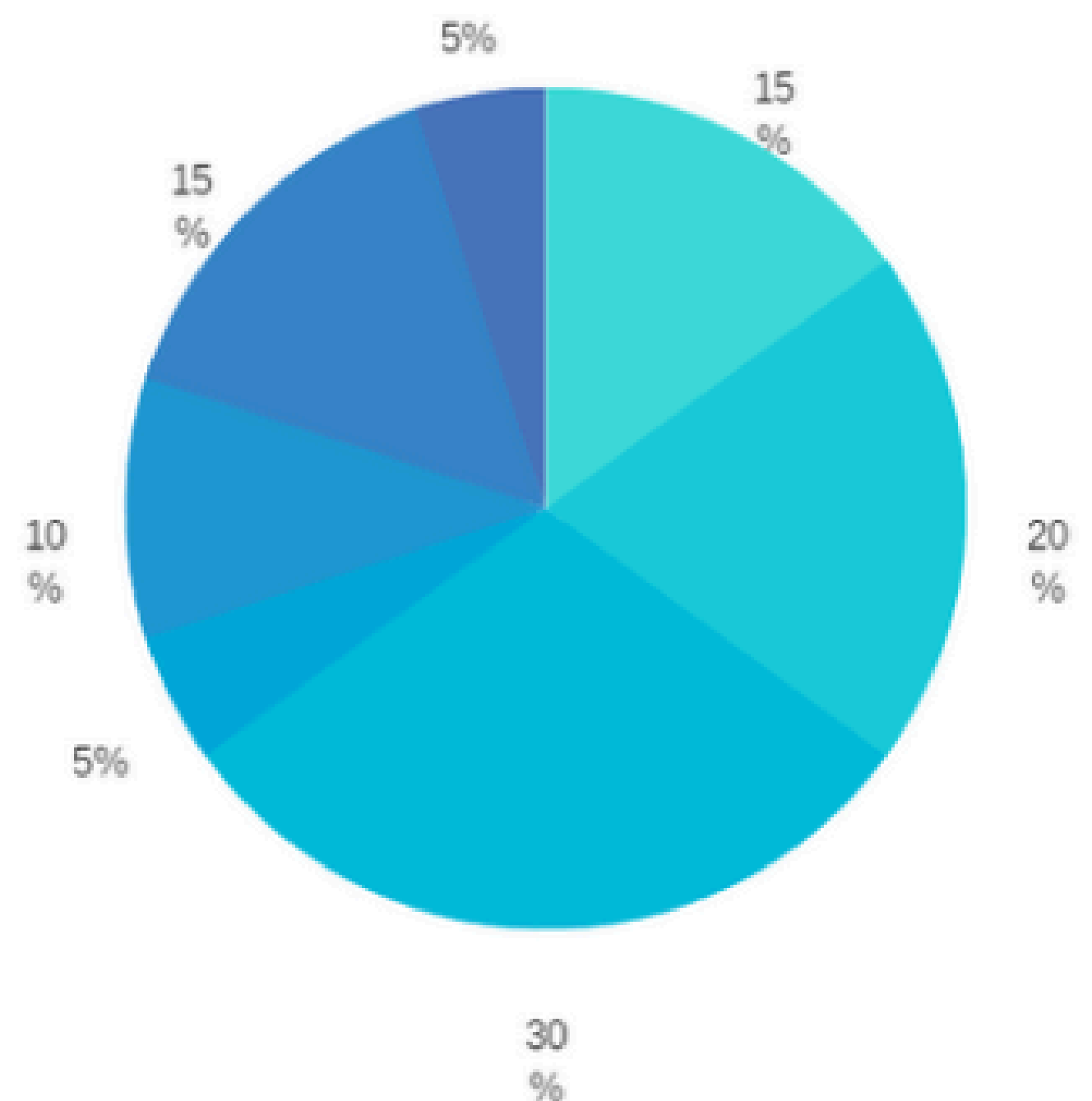


The System:

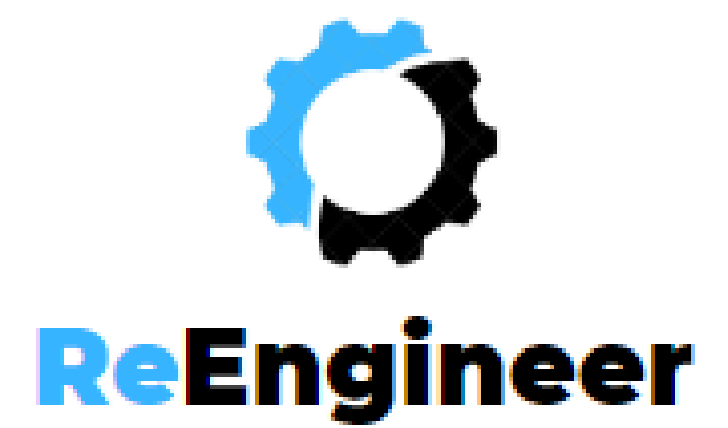


Cost Breakdown:

- Development
- Processing
- Sample installation
- Back end development
- Manufacturing
- Procurement of Materials
- R and D



Future Aspects:



**Highly accurate and precise
mechanical gauges**



Solar Cell usage

**Use of designated wind
energy generation systems**



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THANK YOU



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