

TWENTY ONE FINANCIAL JUSTIFICATIONS FOR USING VISION

1. Saving labour directly concerned with inspection of products. Practically, it is rare for there to be sufficient labour used to give the same degree of quality assurance that an untiring, unfailing vision system can provide.
2. Saving labour directly concerned with classifying or grading products (natural or manufactured) by quality, size, shape or appearance.
3. Saving time used to identify products and components at different stages during processing.
4. Permitting full automation of processes which included 'incidental' inspection when performed manually, unaccounted for but necessary to avoid e.g. jamming of automated operations by 'rogue' components.
5. Avoiding making scrap material with its associated raw material wastage and/or re-work costs; vision-based statistical process control (SPC) can contribute to scrap elimination. Savings in this area can be huge, if only you can persuade people to account properly for scrap costs.
6. Better process understanding leading to process improvements with financial benefits; vision gives immediate and objective identification of problems, making it much easier to determine the cause(s).
7. Increasing throughput of saleable product per factory hour, hence improvement of return on investment (ROI). Throughput may *appear* to reduce when vision starts 'catching' defects previously ignored, but process improvement and SPC can quickly better the situation, ideally taking it to 100% of theoretical potential.
8. Faster checking of 'first off' dimensions, hence better ROI on capital equipment concerned, such as swaging mills and extrusion presses.
9. Avoiding 'giving away' material not contractually required to be supplied (baker's dozen syndrome); vision systems can count precisely and can accurately measure material sold by length
10. Minimizing raw material usage by working consistently closer to minimum contractual dimensions rather than the middle of the tolerance zone, or maximizing permitted content of cheaper ingredient, e.g. fat in minced meat. (Think of that when buying hamburgers from a company which uses vision systems!)
11. Avoiding adding value to already-defective components; e.g. not glazing effective tiles inspected at 'biscuit' stage, not bonding defective 'lead frames' to good integrated circuits.

12. Optimizing usage of irregularly shaped and sized materials such as timber and leather.
13. Optimizing classification and grading to avoid 'downgrading for safety' syndrome.
14. Saving management time in disputes over grading and classification, whether internally or with customers; results from vision systems are objective and consistent.
15. Improved sales through quality perception of packaging by consumer; if the packaging is not perfect, the customer may think that perhaps the product is not carefully made.
16. Improved sales by quality perception by retailers leading to better promotion, e.g. allocation of more shelf space, or recommendation as a product which will cause no after sales problems.
17. Improved sales by product quality reputation leading to 'preferred supplier' status for industrial products
18. Reduction of costs of warranty, which can far exceed value of defective item; a issuing ball or roller bearing in a race can cause a car engine to fail after a few hundred miles.
19. Reduction of product recall costs, by tracking batch usage with serial numbers, so that the minimum number of products need to be recalled in the case of a faulty batch of components being discovered.
20. Reduction of risk of product liability claims, possibly quantifiable in insurance premium terms but claims can be catastrophic for product and company reputation even if covered fully by insurance.
21. Ability to sell in regulated markets - e.g. pharmaceutical, automotive, where 'best practice' is mandatory.