

University of Wales Trinity Saint David

School of Engineering



Prifysgol Cymru

Y Drindod Dewi Sant

University of Wales

Trinity Saint David

Six Sigma Green Belt – Technical Report

Undertaking a Green Belt Project

ACMA5005

Meuryn Nelson

2308099

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Executive Summary

This report presents a Lean Six Sigma Green Belt Project undertaken at the Diamond Centre of Wales in Talbot Green, focused on the reduction of excess physical display stock. The business operates through bespoke consultation and holds a substantial volume of completed stock, containing precious gemstones and metals, despite having an interactive digital application, CeriC, which comprises of a catalogue of designs for visualisation. There is a heavy amount of display only physical jewellery items, some of which are outdated designs. Material value is tied up without adding equivalent customer value.

Using DMAIC – Define, Measure, Analyse, Improve and Control – the project evaluates whether selected pieces should be dismantled so that gemstones can be returned to loose-inventory and precious metal mounts can be recovered through Mastermelt for their scrap value. Additionally, casting sprues from Weston Beamor can be returned for credit more systematically. An indicative baseline suggests that around 100 slow-moving items at an average weight of 6 grams, would represent roughly 600 grams of metal. At an illustrative value of 50 pounds per gram, this equates to 30,000 pounds before labour and refining deductions.

This report argues that the main issue is not that there is too much stock, but a mismatch between a bespoke led business model and a legacy stock profile. The recommended future state is therefore to utilise the selling capabilities of the CeriC application and have an optimal sized stock, rather than no stock: enough physical stock to support sales, but not so much that material flexibility and capital are unnecessarily constrained. A pilot test was performed using a targeted group of high-value display items which were deemed inactive, supported by a decision matrix, FMEA and a control plan so that the company can preserve customer confidence whilst improving material utilisation and working-capital efficiency.

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1 Introduction

The Diamond Centre of Wales (Diamond Centre Wales Ltd, 2025) operates in a niche sector where physical items carry both commercial and symbolic importance. Traditionally in jewellery retail, finished pieces are considered as inventory awaiting sale. However, the operating context considered in this report is different. At the DCW, many physical pieces are display assets used during consultation to assist bespoke creation with clients, rather than being routine saleable stock. There are trays full of rings, pendants, bracelets and earrings which don't get put out on show in the showroom for general sale. These are kept for consultation only and their value lies in helping customers visualise design features, compare differing styles, assessing scale of the item on the body and to gain confidence in the craftsmanship before placing a bespoke order. This distinction is important as it changes the way that the process problem should be defined.



Figure 1 Ring trays at the Diamond Centre of Wales Ltd showcasing some of their display assets.

The Diamond Centre of Wales (DCW) is moving towards a bespoke-led model supported by digital tools such as their own digital application – CeriC (Diamond Centre Wales Ltd, 2025). The core reasoning behind the creation of CeriC was to move away from physical stock, albeit not entirely, and have a catalogue of designs on a digital display. Due to multiple setbacks, this has not been the case, but CeriC is now at a level where it can fulfil its main objective. Customers are no longer restricted to selecting only from physical samples from the sample trays – now they can configure and refine designs through consultation, digital visualisation and selective physical examples. As this model strengthens, the requirement to hold a broad array of fully manufactured pieces becomes less absolute. Some physical samples remain essential as jewellery is tactile and emotionally significant. Seeing and handling a ring, for example, helps the customer to commit to a purchase. Nevertheless, not every display piece remains equally useful. Some of the samples are old, duplicated and simply neglected during consultations for a long period of time. Its representational value has declined but the material value remains high.

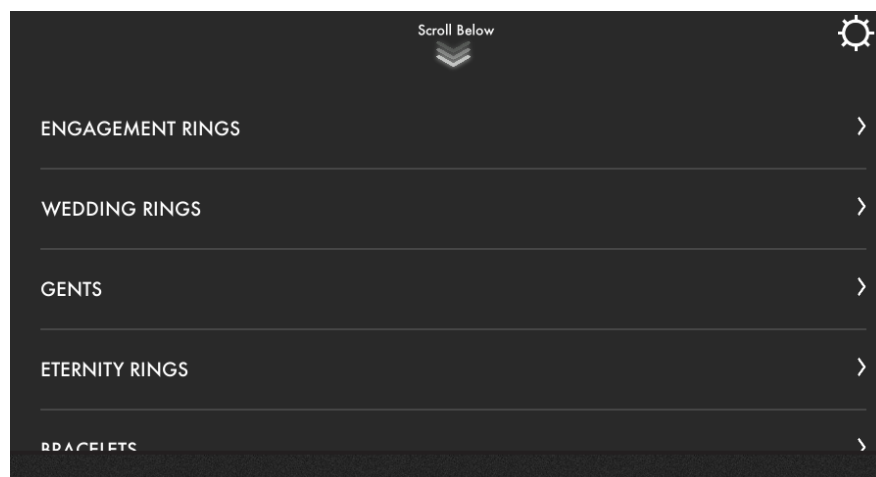


Figure 2 Screenshot of the menu in the interactive jewellery application called CeriC, showcasing the different categories of digital assets.

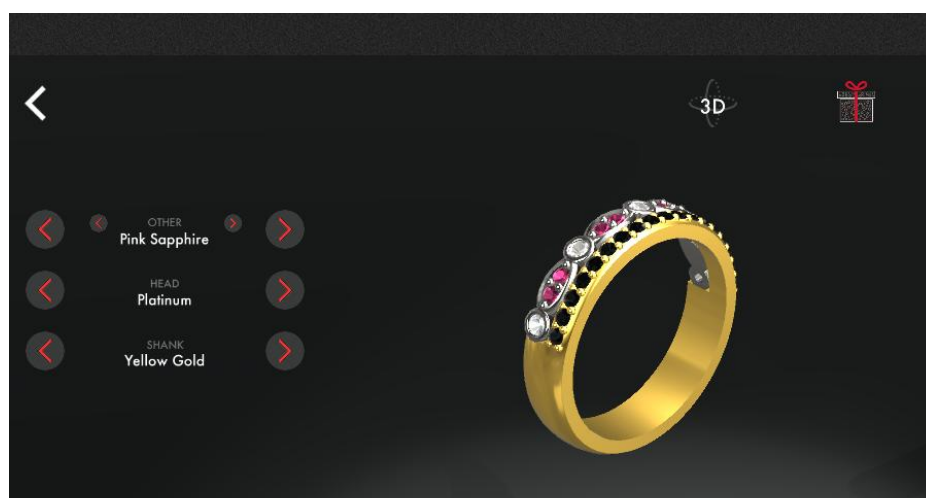


Figure 3 Screenshot from CeriC, showcasing the applications customisation capabilities.

This creates a strong Lean Six Sigma opportunity. According to Moreira et al. (2021), lean thinking highlights resources that do not contribute to sufficient customer value, often referred to as waste, while Six Sigma offers a structured method for reducing variation in how decisions are made (Asif and Chakraborty, 2013). In this context, the waste is not simply inventory in the narrow retail sense, it is the retention of inactive display assets that absorb value from precious metals and gemstones whilst not assisting with sales anymore. If such pieces can be identified and dismantled, the organisation can recover gemstones for future bespoke work and recover metal through refining at Mastermelt (Mastermelt, no date). This in turn releases capital for more productive use.

The purpose of this report is therefore to undertake a small Six Sigma Green Belt project using DMAIC to evaluate how display jewellery assets can be optimised. The report addresses the Define, Measure Analyse, Improve and Control phases through the application of appropriate tools and techniques. It also reflects the specific nature of the organisation by ensuring that the physical pieces in question are treated throughout as display assets rather than showroom saleable items. A key project question is whether the display portfolio is aligned appropriately to a bespoke-led sales model, and if not, what process changes would all the organisation to regain customer reassurance whilst improving material efficiency.

The expected benefits are financial, operational and strategic. Financially, value from gemstones that are locked in the display pieces will be returned to stock to be used in future bespoke orders. The precious metal scrap value of selected items will also be through Mastermelt refining. Operationally, the company can reduce display clutter and give clients an innovative experience through the CeriC application. Strategically, it can align the sales team and workshop more closely with a business model that sells design capability and bespoke manufacture, rather than finished stock from a display cabinet. For these reasons, the project is relevant to Lean Six Sigma theory.

2 Define Phase

The Define phase establishes the project in business terms and clarifies what the problem is and is not (Singh et al. 2023). The problem is not that the DCW has too many unsold retail items as many of the pieces are held for assisting customer consultation, rather than for direct purchase. Therefore, a more accurate problem statement is that the DCW retains jewellery display assets that exceed the requirements of its current bespoke-led model, with older and duplicated pieces no longer making a proportionate contribution to customer value whilst still containing significant recoverable material value.

The project objective is to optimise the display asset base so that it remains effective for consultation while reducing the value that is trapped in inactive items. The project will assess whether the selected display assets should be retained, reviewed later or dismantled in the workshop for gemstone and metal recovery. The improvement goal is to firstly increase the relevance of the retained display portfolio, and secondly to improve the conversion of inactive display assets into reusable gemstones, recoverable precious metals and supplier credit where appropriate.

A SIPOC analysis helps frame the process boundaries and critical elements of a process (Gupta, 2013). Suppliers include gemstone suppliers, precious metal suppliers, casting suppliers and refining partners. Inputs include completed display pieces, gemstones, empty metal mounts, sprues, records and consultation insights. The core process begins with periodic display review, followed by classification of each item, decision-making on retain versus recover, gemstone removal where appropriate, metal recovery, supplier credit and record updates. Outputs are an optimum sized display portfolio, reusable loose stones, recovered metal value, captured sprue credits and improved data visibility. Customers are sales staff, workshop staff, management and customers.

The Voice of the Customer (VoC) is a key part of Six Sigma projects and helps businesses to understand the preferences, dislikes, needs etc of the consumer (Ionescu, 2022). It can be interpreted across several stakeholders. End customers need enough physical samples to feel confident about scale, craftsmanship and style. Sales staff need a display portfolio that supports storytelling and comparison, rather than a large volume of repetitive items. Workshop staff need reliable records so that recovered stones and metal can be reused efficiently. Management requires better alignment between the display base and the bespoke business model, alongside improved working capital control. These stakeholder needs can be translated into Critical to Quality requirements, which is the quality characteristic that translates the VoC into satisfaction with the service and end product (Widiwati, Liman and Nurprihatin, 2024). These include sufficient variety to

support consultation, physical samples that reflect current design trends, recoverable materials that remain traceable and a review process that is consistent rather than based on opinion.

The project scope is where a project is defined and readied for execution (Fageha and Aibinu, 2013). The project scope in this project is deliberately limited. In-scope are inactive jewellery display assets, gemstone recovery from approved pieces, metal recovery and refining, Weston Beamor (Weston Beamor, 2026) sprue-credit control, review categories and decision-making criteria, and the creation of control measures. Out-of-scope are large-scale marketing redesign, a full procurement-system redesign, refurbishment of the consultation display assets and strategic repositioning. A project charter formalises the initiative by setting the business case, improvement goal, team and pilot focus.

Process mapping also shows that display pieces can remain in storage for long periods without a formal trigger for review. Under the current-state process, items enter display but have no equal exit route. Under a future-state define map, items move through a scheduled review point and a controlled retain, monitor or recover decision. The define phase therefore makes a critical conceptual shift by positioning the challenge as display asset optimisation, rather than clearance of inactive stock.

Table 1 Project Charter

Element	Project definition
Business case	Legacy display assets may contain significant recoverable value while no longer making a proportionate contribution to bespoke consultation.
Goal	Optimise the display portfolio while increasing gemstone reuse, metal recovery, and sprue-credit capture.
In scope	Aged display assets, classification, gemstone recovery, metal recovery, sprue-credit control, review policy.
Out of scope	Full marketing redesign, procurement overhaul, refurbishment of display assets, strategic repositioning.
Core team	Management representative, workshop representative, sales representative.
Pilot focus	Older, duplicated, high-value display pieces with low consultation relevance.

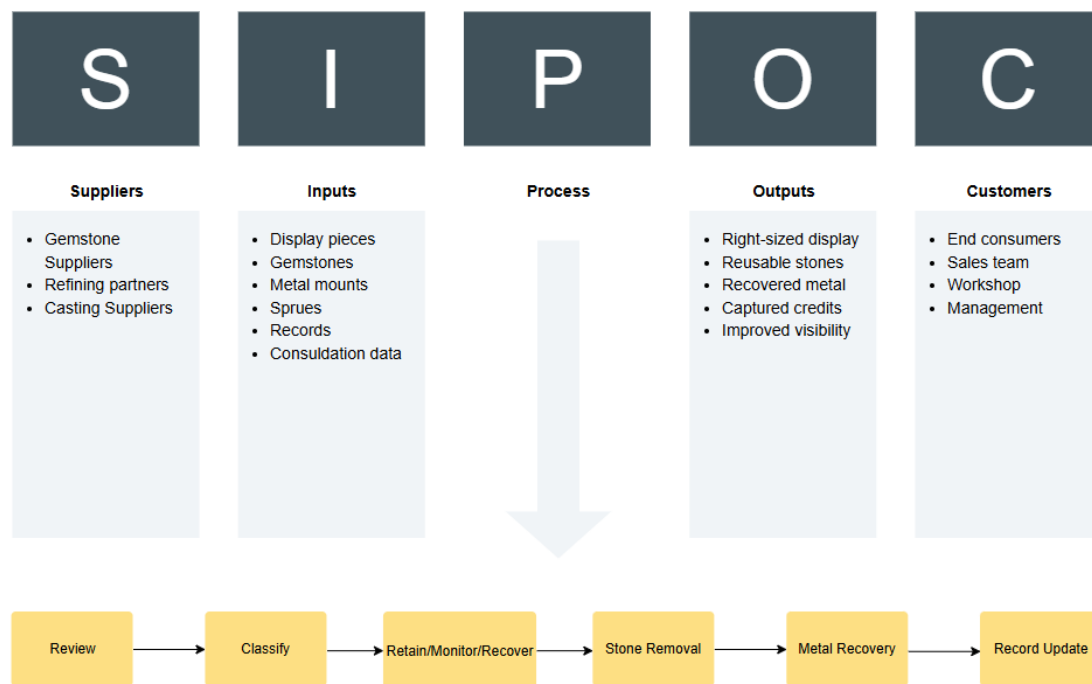


Figure 4 SIPOC Diagram for the project, created using VisualParadigm (2026).

3 Measure Phase

The Measure phase establishes whether the problem is material, how it should be quantified and whether the measurement process is reliable enough to support decisions (Baro, Pina-Monarrze and Reyes, 2023). In projects of this type, the greatest measurement risk isn't the inability to weigh metal accurately, but inconsistency in classifying whether a display piece is still useful to assisting consultations. If one salesperson judges a ring to be essential and another considers it to be redundant, then the resulting data will be unstable.

A data collection plan should identify what information will be collected and by whom, at what frequency and in what format. For this project, the core variables are item reference, design family, date introduced to display, last confirmed use in a customer consultation, whether duplicates exist, metal weight, gemstone type and size, likely recovery route and representational value. Additional fields should capture whether the piece is considered essential, optional or low value from a consultation perspective. Collecting this data creates a stronger basis for both decision-making consistency and financial estimation.

Different types of data are involved: some are continuous, such as metal weight, estimated value per gram and recovery mass. Some are discrete, such as number of duplicated samples. Some are

attribute-based, such as the yes-or-no decisions on whether a piece remains relevant to consultation. Recognising these categories matters because different analytical tools are appropriate for each one.

Measurement variation must also be addressed. A practical attribute-agreement approach should be used to help make correct decisions and ensure precision and consistency (SixSigma.us, 2024). A small set of display pieces can be reviewed by more than one assessor using a shared decision sheet. The outputs then be compared. If agreement is weak then the classification criteria need refining. For example, criteria could include the age on display, frequency of consultation use, design duplication, relevance to current trends and recoverable material value. These criteria would turn subjective judgement into a more repeatable decision process.

As an illustrative starting point, approximately 50 older or inactive display samples at an average of eight grams of precious metal per item, would suggest around 400 grams of precious metal tied up in display pieces. At an illustrative value of £60 per gram of precious metal, the gross metal potential recovery is approximately £24,000 before deductions. This estimate is not to be treated as guaranteed cash recovery however, as refining terms, alloy composition, labour time and dismantling effort will affect the net result. Nevertheless, the estimate is sufficiently large enough to demonstrate that the issue is not trivial.

A Pareto analysis is particularly appropriate because it prevents the project from dispersing effort across too many low-impact items. According to Powell and Sammut-Bonnici (2015), pareto analysis, also known as the 80/20 rule, suggests that some inputs contribute more than others. Jewellery assets are not all equal in value. The practical implication is that the DCW should rank candidate items by estimated recoverable value and identify the vital few pieces that offer the highest potential benefit. If the top 20-30 percent of inactive display items account for around 70-80 percent of the embedded recoverable value, then the pilot should focus on these first.

Data collection should also consider gemstones as a distinct resource rather an assumed bonus. Display samples may have limited display relevance but contain gemstones that are reusable in future bespoke orders. Therefore, the measure plan should record stone type, approximate size, shape, quality and likely demand in current design work. Another measurement area concerns the supplier sprues from Weston Beamor, which should be logged by weight retained, dispatched and then credited. Conceptually, the current process is not capable of consistently preventing inactive display assets from accumulating as there is no defined review trigger, standard ownership or controlled classification route. In terms of capability, the process is unstable and overly dependant on discretion. The Measure phase therefore provides both a credible baseline and a clearer

understanding of where the current process lacks stability. Additionally, it creates the evidence base needed for later comparison in the Control phase.

Table 2 Data Collection plan

Measure	Purpose	Type	Collection method
Item age on display	Identify aged assets entering review	Discrete/continuous	Derived from display records and review dates
Estimated metal weight	Assess recoverable metal value	Continuous	Weighing or supplier/job records
Stone type and size	Assess reuse potential	Attribute/continuous	Workshop inspection and logging
Consultation relevance	Determine representational value	Attribute	Cross-functional scoring during review
Duplication count	Identify redundant families	Discrete	Display review by design family
Sprue accumulation	Assess supplier credit opportunity	Continuous	Workshop accumulation log

Table 3 Illustrative Pareto logic for prioritisation

Priority band	Typical characteristics	Expected share of value	Action
Top 20–30%	Older, duplicated, high-value pieces with low consultation relevance	Around 70–80% of recoverable value	Use for pilot recovery
Middle band	Moderate value or uncertain consultation role	Moderate share of recoverable value	Hold for review or monitor
Bottom band	Low-value or still useful pieces	Low share of recoverable value	Retain or postpone action

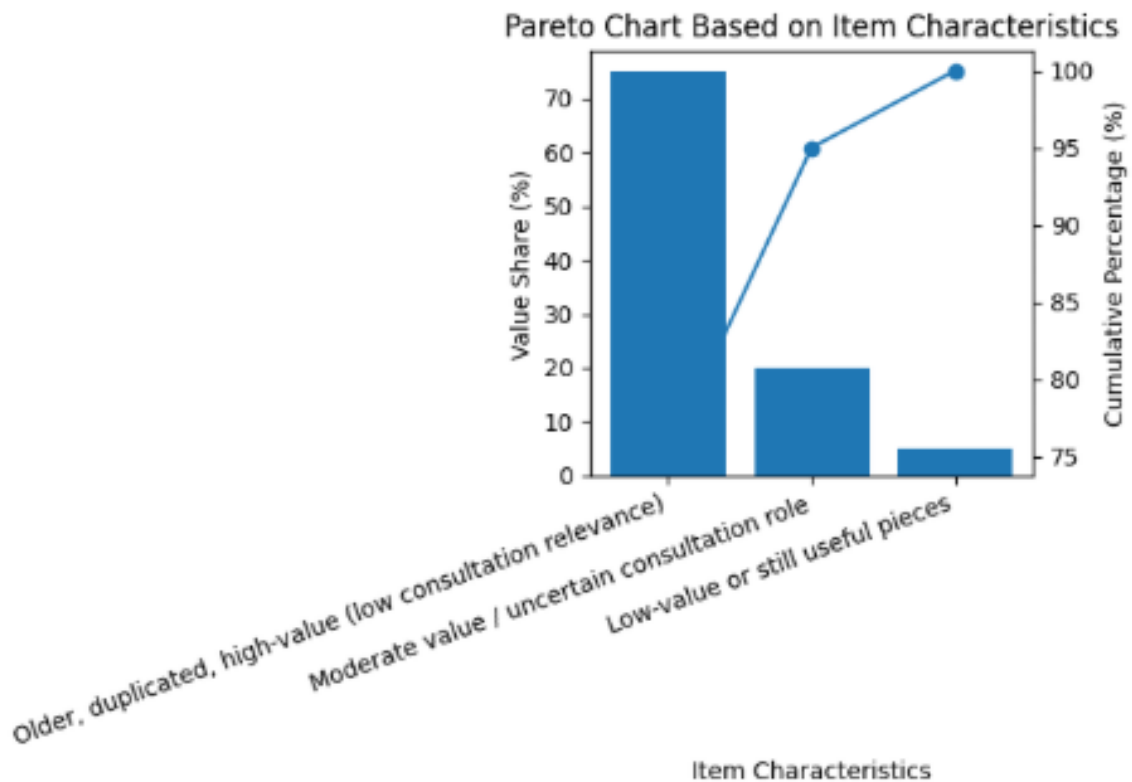


Figure 5 Illustrative Pareto Chart created using ChatGPT (OpenAI, 2026)

4 Analyse Phase

The Analyse phase merges what is known about the current process as well as the baseline data to highlight and validate the causes of defects in the process (Monday, 2022). The Analyse phase seeks to explain why inactive display assets persist and why the current process allows value to remain trapped in pieces that may no longer justify their place. Root-cause analysis, a process of identifying the causes of defects and preventing them from happening again (Groot, 2021), demonstrated that the issue is structural rather than accidental. It arises from the interaction of strategy, people, methods, technology and measurement.

A fishbone diagram, also known as Ishikawa diagram, helps organise the effects and causes in a systematic way (Ciocoiu and Ilie, 2010). Under People, there is emotional attachment to certain items. Staff may be reluctant to dismantle a finished piece due to building an attachment to it over years, even if it no longer contributes to current consultations. Under Methods, the current process appears to lack a formal review cycle, standard classification categories and explicit decision

ownership. Under Measurement, there may be insufficient routine reporting on display age, duplication or recoverable value. Under Technology, the digital tool CeriC, reduces dependence on a broad physical sample base, but display policy has not been updated to match that reality. Under Strategy, the main issue is the coexistence of a bespoke-led business model with legacy display habits which are more suitable to a traditional stock-led approach.

The Five Whys technique is helpful in problem solving by asking what caused a defect, then questioning the previous answer five times (Serrat, 2017). It reveals useful chains of causation. Why do inactive display assets remain in the sample trays? Because they are not systematically reviewed. Why are they not systematically reviewed? Because there is no formal process trigger and no clear responsible owner for these decisions. Why is there no owner? Because display pieces have been assumed to remain useful unless challenged by someone. Why does that assumption persist? Because the DCW historically relied more heavily on physical samples and has not fully translated its bespoke-led strategy into display-management rules. This is a transitioning phase for the DCW.

Process analysis confirmed that the current state permits drift. Pieces enter the display portfolio, but there is no equal exit route. This is because display assets are attractive and will always hold some potential, making the default behaviour – retention. Without age thresholds, review boards and trigger criteria, the DCW has little defence against slow growth in display value. Graphical analysis of age groups, duplication and value ranking would likely show a concentration of recoverable value in a relatively small older subgroup, supporting the Pareto logic introduced during the Measure phase.

A critical analytical point is that the physical display quantity should not be confused with customer choice. One reason that old display items persist is the belief that the higher the number of physical pieces, customers will automatically feel more confident. However, in a bespoke-led environment supported by digital configuration, a smaller number of carefully chosen samples can often represent a much wider design catalogue. A physical sample may be there to demonstrate setting style, mount finish, shoulder style and finger presence. The CeriC app can then show variations of this design by changing stone colour, metal colour, profile and stone size. In this example, the physical sample is of useful function rather than exhaustive.

At the same time, the analysis must recognise the limits of a reduction-focused mindset and culture being introduced at the DCW. Removal of too many physical samples would damage the consultation experience for customers, which is key in the jewellery industry due to the emotional reassurance attached to bespoke orders. Therefore, the correct analytical conclusion is not that the DCW should minimise display at all costs, rather, it should procure an optimal sized display by retaining pieces that genuinely support comparison, current trends and confidence while recovering value from items

that do not. Cross-functional decision-making is integral as sales, workshop and management each bring differing views and priorities. The Analyse phase shows that the persistence of inactive display samples is driven by strategic misalignment, lack of process control and the behavioural reluctance to challenge attractive finished pieces.

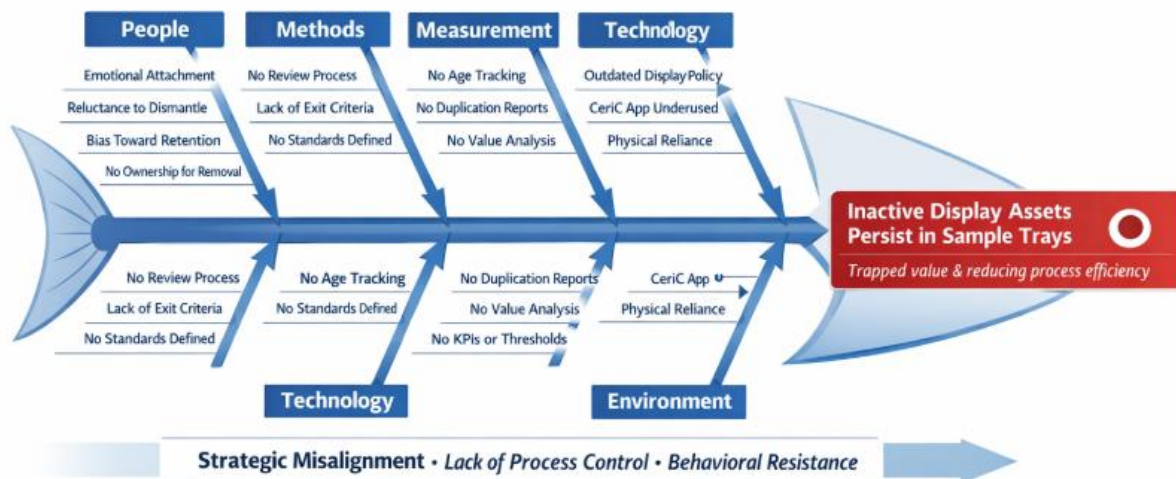


Figure 6 Fishbone Diagram for the inactive display assets that persist in the sample trays at DCW, generated by ChatGPT (OpenAI, 2026).

5 Improve Phase

The Improve phase develops a practical future state that addresses the causes identified and converts this project from diagnosis into reality (Lean6SigmaHub, 2025). The core improvement principle is not blanket reduction of physical pieces, but a structured optimisation. Every retained display asset should have a clear role in supporting consultation, and every recovered item should release value in a controlled and traceable way.

The pilot took place over the months of January and February 2026. It demonstrated that a small number of high-value display assets could be successfully dismantled with minimal impact on customer-facing display quality. Recovered gemstones were found to be suitable for reuse in subsequent bespoke designs, while metal recovery exceeded expectations after refining reductions. The total received from Mastermelt over the two months was £81,655, over 9 separate batches of scrap sent to them. This high figure was heavily down to management, along with other staff,

deciding to unset gemstones from multiple tennis bracelets which hold a lot of value in metal due to their sheer size and weight. Many of these tennis bracelets were so similar and had been inactive for so long, it was decided across the board to unset the gemstones and recover the metal whilst keeping a few for display purposes. However, these figures are not strictly valid as they were merged in with scrap from customer trade-ins, albeit most of the metal was from inactive display assets. Feedback from sales staff indicated that the removal of duplicated or inactive pieces has not negatively affected customer consultations.

The first improvement is the introduction of the formal display-asset classification system. Each piece reviewed should be assigned to one of at least three categories: retain, monitor or recover. Retain should apply to pieces which obtain current style relevance and are often picked out during consultations by the clients. Monitor should apply to items that are currently acceptable but require review due to their relevance declining. Recover should apply to pieces that are duplicated, aged and inactive in consultations. A decision matrix can support these categories by scoring assets into criteria such as age, frequency of consultation use, design duplication, alignment to current trends, gemstone reuse potential and recoverable metal value. During the pilot phase, the items were selected only by the two salespersons, due to them seeing the customers and having knowledge on which display assets are inactive or not.

The second improvement is a controlled gemstone-recovery process. Once an item enters the recover category, stones should be removed only by competent workshop staff, using defined handling procedures. Each recovered stone should then be measured, inspected, recorded, labelled and returned to loose inventory. This control is integral to the project, otherwise it could transform one unmanaged asset form into another. In the pilot phase during January and February, stones were just unset and returned to the sales staff. They are yet to be sorted properly by size, quality etc.



Figure 7 Loose gemstones in packets at the DCW, not yet sorted properly into size, quality etc.

The third improvement is precious-metal recovery. After gemstone removal, metal mounts are batched and sent for refining through Mastermelt. During the pilot scheme, the individual mounts were all mixed in together, along with trade-in stock from customers and sent as a big batch as per usual protocol. In the future, inactive display mounts should be recorded separately for valid information towards the project. A fourth improvement concerns supplier sprue control. If Weston Beamor sprues can be returned for credit more effectively than they can be used in-house, then the return route should be standardised. During the pilot scheme, workshop staff would return sprues as and when they remembered – the new process had yet to sink in, so, some sprue material was still used for resizing etc.



Figure 8 Metal scrap box at the DCW, where all scrap metal is put into with no real system in place for recording.

The Improve phase should also include a cost-benefit assessment. The gross opportunity may be large, but net benefit depends on labour, potential stone damage, refining deductions, administrative effort and possible display replacement costs. Even so, the likely benefits operate on several levels: direct recovery of metal value, reduction of future gemstone purchases, release of working capital and sustainability benefits from reusing existing materials. An illustrative FMEA, which is a systematic method of identifying and preventing defects (Sharma and Srivastava, 2018), strengthens the improvement design by considering the risks of wrong item selection, gemstone damage during dismantling, poor traceability and overstated financial gains.

Improvement alternatives should also be reviewed critically. Doing nothing would leave trapped value untouched and fail to address process drift. Removing many pieces quickly would increase risk in facing customers and staff resistance. The selected approach of targeted pilot recovery supported by structured review is therefore the strongest option because it balances customer needs with material efficiency and allows the DCW to validate improvements before a wider rollout.

PROCESS FAILURE MODE AND EFFECTS ANALYSIS									
Item:		Pilot Implementation for inactive assets		Responsibility:		Management, workshop and sales st			
Model:		1		Prepared by:		Meuvyn Nelson			
Core Team:		Management		FMEA number: 1					
						Page :		1	
								FMEA Date (Orig 05/01/2026)	
Process	Potential Failure Mode	Potential Effect(s) of Failure	Severity	Potential Cause(s)/ Mechanism(s) of Failure	Occurrence	Current Process Controls	Detection	RPN	Recommended Action(s)
Item selection	Useful display piece recovered too early	Reduced consultation quality	7	Premature selection of display item, lack of agreed criteria	3	Cross-functional scoring and approval	7	147	Add mandatory approval gate and documented criteria
Stone Removal	Gemstone damage	Value loss and rework	9	Poor handling, insufficient skill	3	Trained bench staff	2	54	Create SOP and training certification
Stone logging	Recovered stones not traceable	Reuse benefit lost	6	No formal traceability method, inadequate logging discipline	6	Mandatory item and size/type logging	8	288	Use unique IDs and traceability audits
Metal recovery	Net value overstated	Weak business case	6	Over-optimistic assumptions	5	Reconcile projections against actual returns	2	60	Use actual historical returns for estimation
Spure return	Credits not followed through	Value leakage	5	Weak follow-up	3	Monthly reconciliation of dispatch and supplier credit	3	45	Add ownership and overdue-credit escalation

Figure 9 Process FMEA created at the DCW for the pilot implementation for the Lean Six Sigma project for inactive display assets.

6 Control Phase

The Control phase established that the improvement becomes a stable way of working, rather than a one-off exercise. This is important in display-asset projects because accumulation can easily reappear once the attention of management moves elsewhere. This is a risk particularly at the DCW, due to the team being rather small and having many other innovative projects on the go.

The first control measure is a scheduled aged-display review. A monthly review cycle will be implemented at an operational level with a more formal quarterly review for management. Display assets should be reported by age group, value band and category such as dress ring, engagement ring, wedding ring etc. Any item above a defined threshold, for example a ring has gone twelve to twenty-four months without consultation relevance, should automatically enter formal review. This creates a process trigger where previously there was none.

The second control is a decision matrix. The scoring criteria should be documented, standardised and retained as part of standard operating procedure. This reduces person-to-person variation and make the decision-making process auditable. The third control is traceability. Recovered gemstones should be recorded with source piece, dimensions, gemstone cut (pear, round etc), quality, recovery date, storage location and availability status. Refined metal should also be weighed and reconciled against dispatch and receipt records. Sprues returned to Weston Beamor for supplier credit should be logged at accumulation, dispatch and credit confirmation stages.

Key performance indicators (KPIs) should be reviewed routinely. Suitable KPIs include total estimated value of inactive display assets, number of pieces in the retain, monitor or recover categories, net refining return, number of recovered stones used in bespoke customer orders, average time a display piece remains before review and captured supplier sprue credit.

Ownership must be explicit. Management should own the policy and review the KPI dashboard. Sales staff should contribute consultation-value judgements during reviews and workshop staff should own execution of recovery, handling standards and traceability records. Finance should support reconciliation of refining returns and supplier credits. Staff involved in a review must also understand that the purpose is not cost-cutting but preserving a purposeful and high-performing display environment.

Finally, the project should include a post-implementation review. Three-month and six-month checkpoints would allow management to assess whether inactive display value has reduced and if the retained display collection remains effective. Also, they would be able to see whether recovered

stones are being used in bespoke orders and if any unintended consequences have emerged. Through these control measures, the DCW can ensure that display assets continue to serve their representational purpose without accumulating beyond need.

Table 4 Control plan.

Metric	Target direction	Owner	Review frequency
Estimated value of inactive display assets	Decrease	Management	Monthly
Recovered gemstone reuse rate	Increase	Workshop / Sales	Monthly
Net metal recovery value	Increase and reconcile	Management / Workshop	Monthly
Sprue credit captured	Increase consistency	Workshop / Finance	Monthly
Display review completion rate	Maintain at 100% of due reviews	Management / Sales	Monthly

7 Critical Discussion

This project demonstrates the importance of interpreting Lean Six Sigma concept in context, rather than applying them mechanically. If the physical samples had been treated simply as non-selling retail stock, the analysis would have been narrower. Their true function in this case is to support consultation in a bespoke environment. This means that value isn't judged by whether a piece is sold, but it must also be judged on its active contribution to customer confidence, design understanding and sales conversion.

A major strength of the proposed project is that it respects this distinction. It does not recommend stripping the sample strays of all physical assets and replacing them with digital visualisation. Instead, it recognises the useful role that physical samples play in consultations. Some pieces must remain due to their embodiment of craftsmanship, proportion and style in ways that digital visuals alone cannot quite capture. However, the project also challenges the assumption that every historical display piece remains necessary.

There are some important limitations with this project. First, the financial estimates in the project are illustrative. And even in the figures from the pilot scheme for metal recovery, they did not account for costs such as labour time, refining and the mounts were mixed with scrap metal trade-ins that the

DCW already acquired from customers. Secondly, gemstone reuse depends on practical demand. Some of the recovered gemstones may never be used in bespoke orders. Thirdly, it is difficult to quantify precisely what constitutes consultation value. These limitations mean that the decision system should remain evidence-led but not rigidly mechanical.

Another potential issue is change-management. In jewellery businesses, craftsmanship and emotional attachment are key influences on behaviour. Some staff may experience dismantling as a loss, even when the item is no longer strategically useful. Due to this, cross-functional review and pilot validation are not just technical devices, but also methods for building trust in the process.

From a wider perspective, when a company moves towards bespoke configuration and digital support, legacy assumptions about how many finished examples must be held should be reviewed. The central improvement is therefore not just recovery of material, but the creation of a disciplined process for deciphering which physical assets genuinely earn their place in the sample trays.

The wider lesson is valuable beyond the immediate project. It suggests that operational systems can become inefficient when they continue to reflect an earlier business model. A display policy that once made sense may become costly when shifting to a more digital bespoke configuration. Lean Six Sigma is useful here because it encourages both critical questioning of inherited practice and disciplined validity of alternatives.

8 Conclusion

This report has applied the DMAIC methodology to a realistic Green Belt project at the Diamond Centre of Wales. The project has been framed deliberately around jewellery display assets, rather than conventional saleable stock, reflecting the organisation's bespoke-led business model. The analysis shows that some older or duplicated display pieces may no longer justify the material value embedded within them, although some physical examples remain import for customer reassurance.

Through the Define phase, the project established that the issue is one of display-asset optimisation and strategic alignment. The Measure phase demonstrated a credible baseline, highlighted the importance of measurement variation and identified Pareto logic as a means of focusing on the highest-impact candidates. The Analyse phase showed that the persistence of inactive display assets results from strategic misalignment, absent review triggers, behavioural reluctance and weak ownership. The Improve phase proposed a selective and controlled response through classification, gemstone recovery, metal recovery, sprue-credit management, pilot testing and FMEA-based risk control.

The central conclusion is that the DCW should retain a purposeful display portfolio, not an unnecessarily broad one. Physical samples that support consultation should remain but legacy pieces that no longer add sufficient representational value, should be reviewed objectively and, and where justified, converted into reusable materials and recoverable value. In doing so, the DCW can strengthen alignment between workshop capability and a bespoke-led strategy.

The pilot scheme ran through January and February showed that the project certainly has strong potential and provided stakeholders with valid cause for continuing with this project. Metal recovery from Mastermelt showed figures of over £80,000 in just two months and the sales staff reported no negative impact on consultation experience with customers.

Overall, the report shows that Lean Six Sigma can be applied thoroughly in a jewellery environment by recognising that customer value may come from representation as well as from sales. The strongest future state is therefore one in which every retained display asset actively supports the customer journey, and every redundant one has a controlled route back into productive reuse. The project therefore provides both a practical framework and a broader demonstration of how Lean Six Sigma can be effectively adapted to a bespoke, design-led manufacturing environment.

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