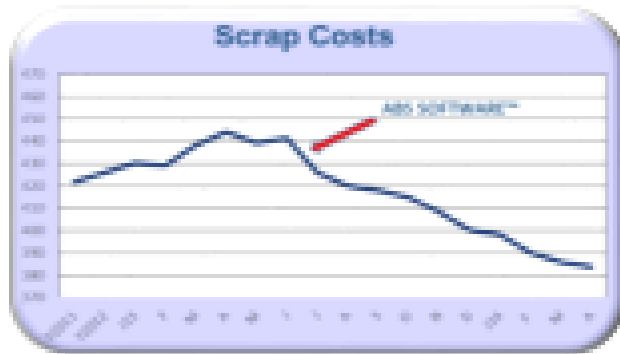




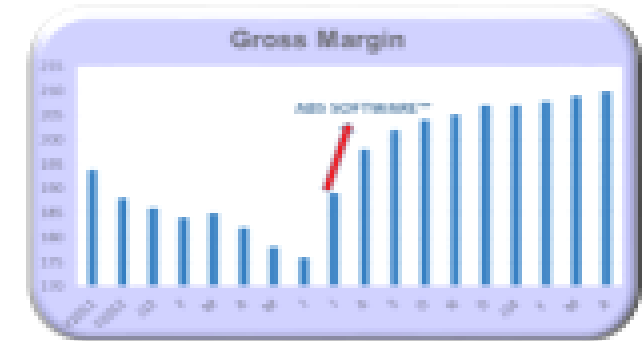
ABS Software™

History and Capabilities 2022

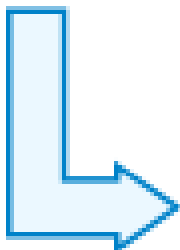
Proven results: ABS SOFTWARE™

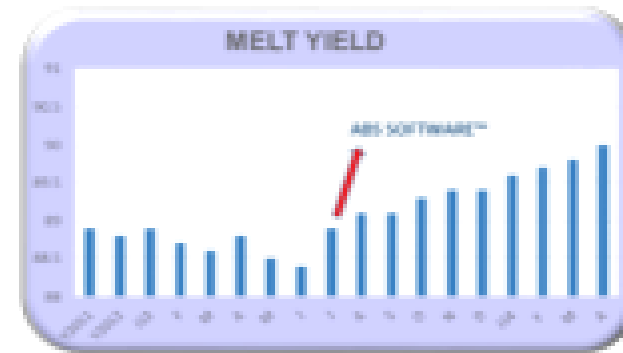


- Reduce Scrap Costs



- Raise Gross Margins

- 
- Reduce Alloy Costs



- 
- Improve Scrap & Alloy Yields

- 
- Lower Cash needs

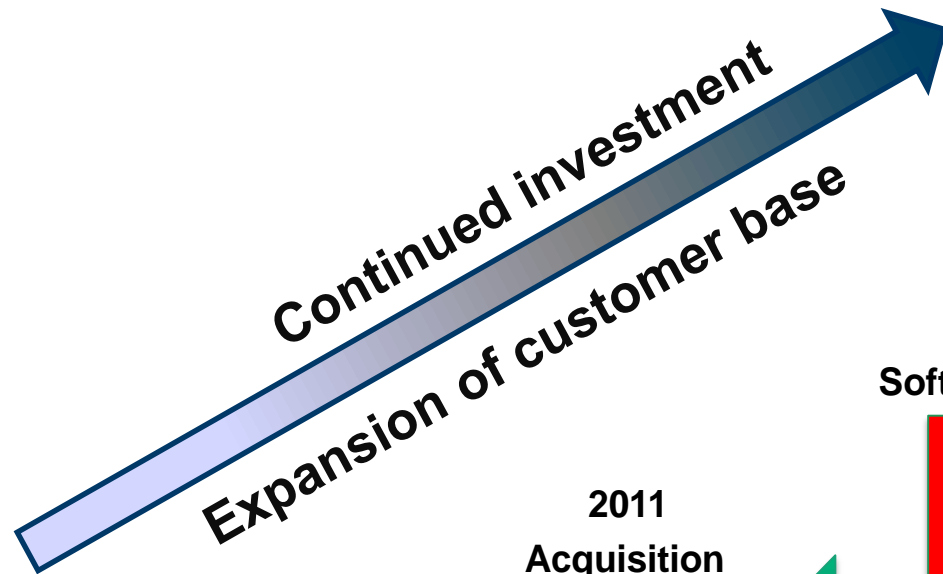


- 
- Lower Inventory

TMS International

- The leading provider of on-site, industrial steel mill services for steelmakers around the world for 90 years.
- Operates 36 brokerages offices from which it buys and sells raw materials across five continents. We understand scrap, alloys & inventory costs.
- ABS Software™ is a comprehensive software package offered by TMS International that allows ferrous and non-ferrous customers to create value within their melt operations. ABS is a fully integrated, linear program based system.
- We are committed to creating value for our customers through a partnership of service and innovation.

Brief History: ABS Software™



1980's
"Keystone"
Initiated to reduce
alloy cost additions

2011
Acquisition
TMS International
Develop and execute
plan for enhanced
flexibility

2011 - 2022
Software upgrades
Interfacing ERP's
Security
Inventories
Custom reports
Real Time
Batch
Melter Holder
Import/Export
Spectro Linkage
Continuous

Today
Customized
for Shop

Aluminum
Iron & Steel
Non-Ferrous
Traders
Research
Foundries

Customer
Support

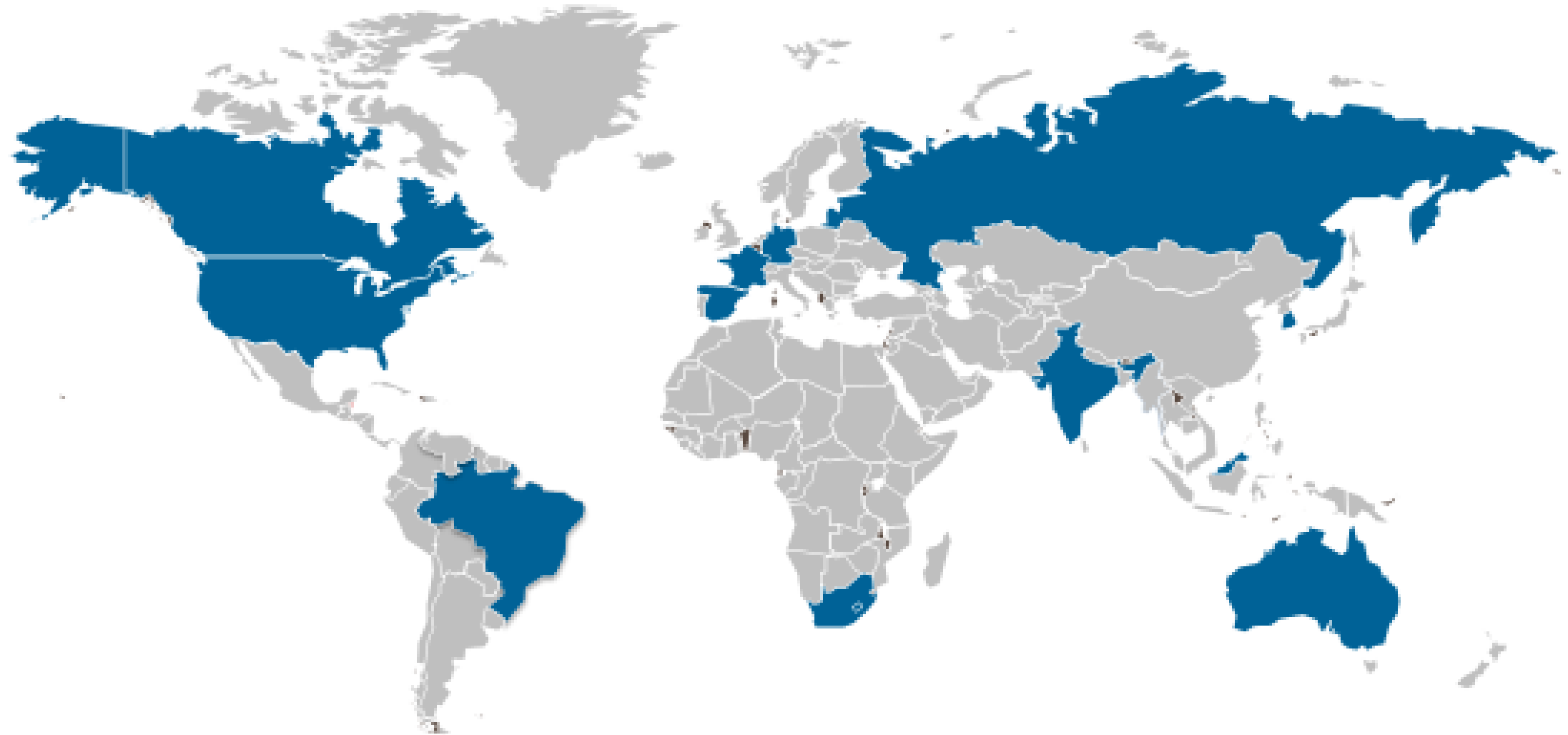
Ensure
Specifications

Reduce
Inventory

Reduce Alloy
Costs

Reduce Scrap
Costs

ABS Software™ World Wide Presence



ABS Software™ – How it Works



SEGMENTED MODULES

- * 9 distinct targeted modules
- * Each module builds upon the other
- * Modules communicate to each other
- * Special options built for unique shops
- * Results in Excel or customized

CONTROL OF PROCESS

Liquid Metal Cost
Inventory and Customer Specs

Chemistry Routing
Advanced Element Relationships

Purchase Evaluation
Forecast & Management Reports

Companies that Optimize



Reduce their costs in alloys and scrap. Reduce nickel, chrome, silicon, vanadium, moly, copper and other alloy additions.



Maximize the lowest price scrap into their charge, and still have tight control on their residuals.



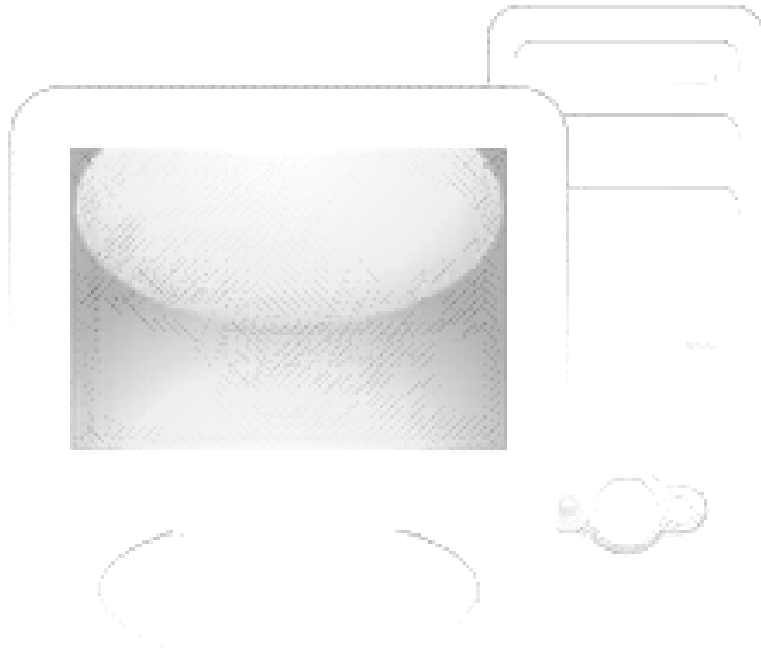
Know what is “on hand” and what they will need to purchase in the future.



Weave their process together. From procurement to the chem lab to melting and pouring to final delivery to the customer.



Believe in math and quantitative analysis, but do not have the time or internal resources to write complex linear programs.



- **ABS modules may be licensed separately or as a complete package. Custom modifications, if needed and/or desired, are available.**
- **ABS is available in single or multi-user versions and operates on Intel compatible hardware platforms utilizing the Windows operating system.**
- **Input and information can be shared or restricted among users. From a single computer or shared on your network.**
- **We communicate to other devices through CSV or ASCII flat files, the safest way to avoid overwriting databases.**
- **Free temporary upgrades and support are provided for the first 60 days after installation.**
- **Several plans for on-going software maintenance and support are available.**

Differentiation: ABS Software™ vs. Competition



We Create Value®



- ABS Software™ is flexible. It is used by iron and steel foundries, aluminum foundries, high alloy and non-ferrous shops, as well as scrap brokers and traders. We customize to your needs, and do not expect you to modify to ours.
- Our software can be used in batch, continuous and melter/holder applications. We control liquid steel costs as well as specific charges that are provided through traders.
- We offer what you need, module by module. Our competitors package often includes what you do not need, and still charge you for it.
- It is all about the math, which is proven in the industry. Our software is designed for operator ease, as well as managing analysis.
- With our IT Team, we can interface with all spectrometers and ERP's. ABS Software™ can drive your shop, or your current ERP can continue to lead.
- No software is more aware of the importance of inventory. Let it be by lot, batch or invoice number identification, we can track it all, in real time.
- TCIMS is the leading supplier of mill services. This is our business, and we have been providing solutions to customers for over 8 decades.

Significant repeatable cost savings




In Method 1 below, a standard recipe calls for CP Nickel, one of the more expensive raw materials, whereas ABS (Method 2) will look at all materials to make the specification using the lowest combination possible. In the case below, nearly \$.17/lb is saved as a result. ABS looks at all elemental combinations.

Raw Material: *Method 1 - Typical*

Alloy Blending System File Review - [e:\ABS\stainless\spool.out]

File Edit Search Output Mail F1-Help <Esc>-Cancel



Stainless and High Alloy Demo

CHARGE MAKE-UP REPORT

Heat Number : testcomp
Alloy Code : A286 -Stainless286
Furnace : 6

Material Name	Lot Number	Location	Pounds Requested
1.13_8 Stain			1,350
2.304 Scrap			3,000
3.317 Stain			2,655
4.431 Stain			3,154
5.800 Incon			1,000
6.A286			6,000
7.CP Nickel			2,588
8.Ti 6-4			250
Total Pounds Charged			20,000
The Final Weight will be			20,000 Pounds

----- Solution -----		----- Optimal -----		Number of
Actual Cost	Cost/Lb	Actual Cost	Cost/Lb	Solves
23,860.67	1.19303	20,532.14	1.02661	14

Raw Material: *Method 2 – Optimal ABS*

```

Alloy Blending System File Review - [e:\ABS\stainless\spool.out]
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Stainless and High Alloy Demo

CHARGE MAKE - UP REPORT

Heat Number : testcomp
Alloy Code   : A286      -Stainless286
Furnace      : 6

Material      Lot      Location      Pounds
Name          Number              Requested

1.304L                      4,668
2.316L                      1,082
3.431 Stain                1,367
4.600 Incon                 100
5.718 Incon                3,990
6.A286                     3,452
7.N80                       254
8.S5S Ni Res                1,012
9.Ti 6-4                   269
10.Weld Wire6              3,800
Total Pounds Charged       20,000

The Final Weight will be   20,000 Pounds

- - - - - Solution - - - - -      - - - - - Optimal - - - - - Number of
Actual Cost      Cost/Lb          Actual Cost      Cost/Lb      Solves
20,532.14        1.02661          20,532.14        1.02661      1

```

Behind the savings

How it saves

By using the lowest combination of raw materials that allow finishing on the low side of the specifications on the most expensive materials (in this case, nickel and chromium).

Heat Number : testcomp
Alloy Code : A286
Furnace : 6

Theoretical Analysis

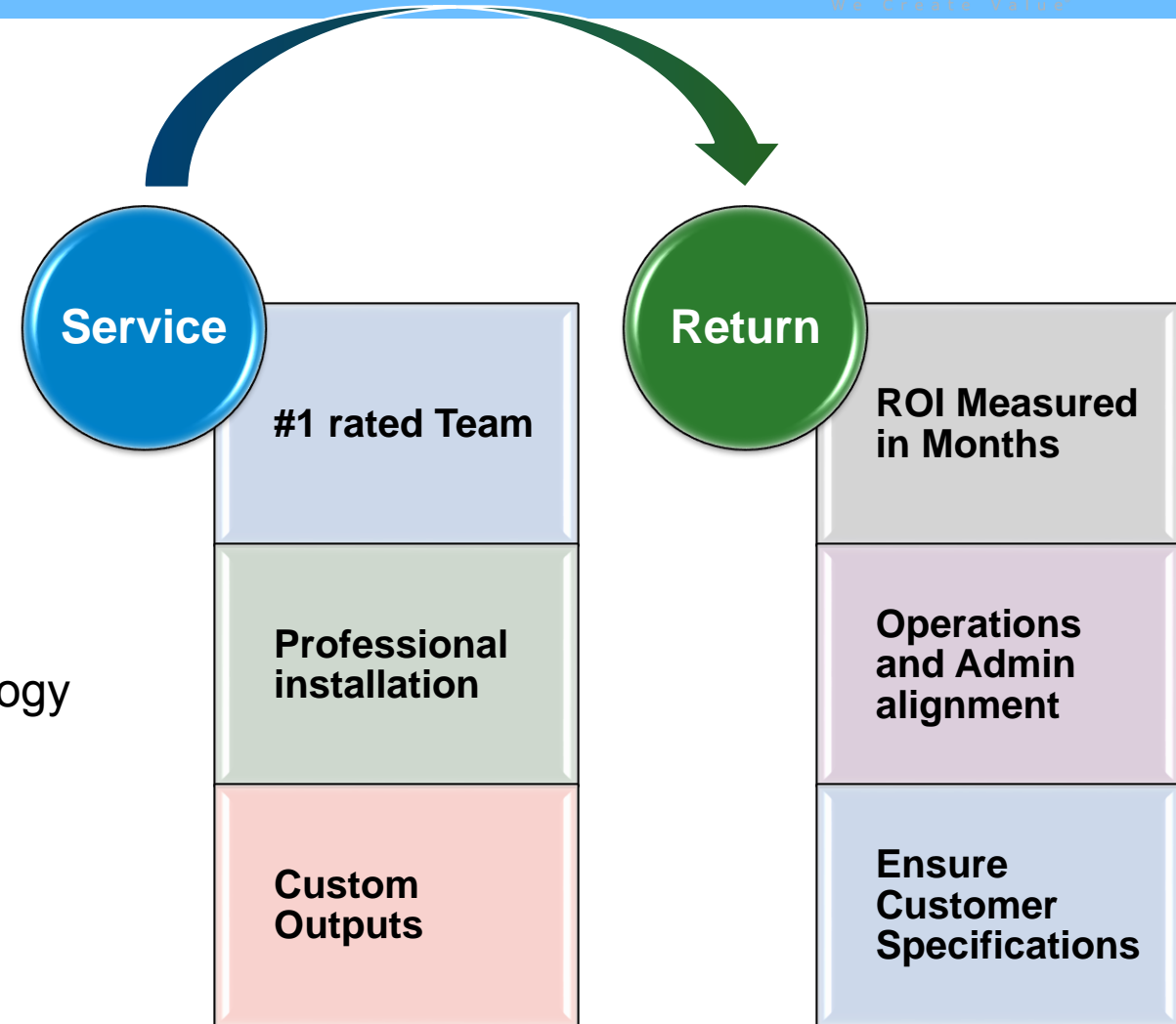
Element Symbol		Pounds Charged	Theoretical Analysis	Aim Range Charge	
C	=	16	0.08000	0.00000 /	0.08000
Si	=	200	1.00000	0.00000 /	1.00000
P	=	5	0.02500	0.00000 /	0.02500
Ni	=	4,800	24.00000	24.00000 /	27.00000
Cr	=	2,700	13.50000	13.50000 /	16.00000
Mn	=	272	1.36388	0.00000 /	2.00000
S	=	3	0.01912	0.00000 /	0.03000
Al	=	70	0.35000	0.00000 /	0.35000
Cu	=	23	0.11970		
B	=	0	0.00300	0.00300 /	0.01000
Mo	=	200	1.00000	1.00000 /	1.50000
Pb	=	0	0.00003		
Ti	=	380	1.90000	1.90000 /	2.35000
V	=	29	0.14597	0.10000 /	0.50000
Co	=	43	0.21861	0.00000 /	1.00000
Zr	=	0	0.00153		
Fe	=	11,254	56.27316	48.03375 /	59.49700

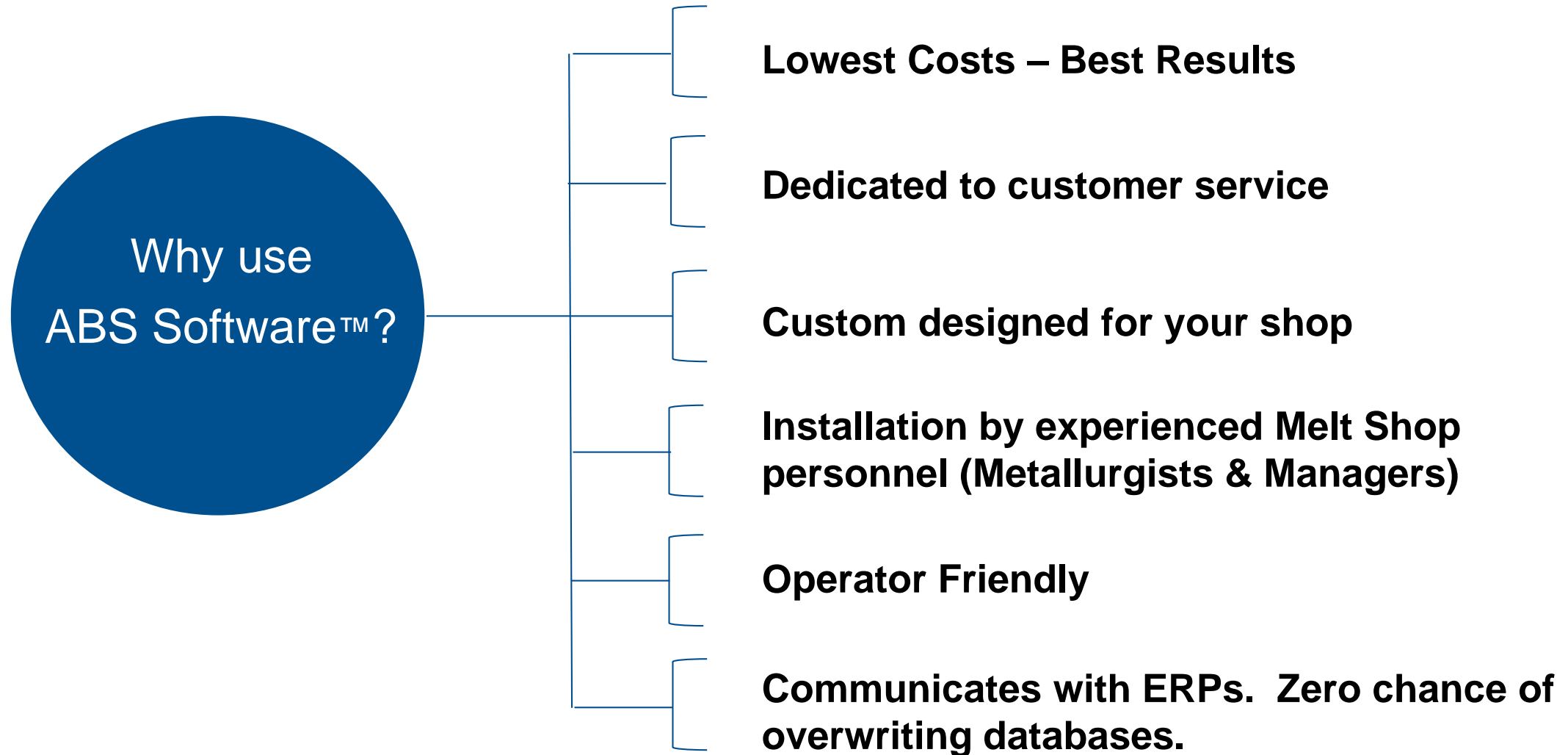
Value Proposition

What we will do:

- **Design** to your own operations
- **Recommend** only what you need. No “Bells and Whistles”.
- **Train** all employees in use of software
- **Review** raw material and customer specifications
- **Upgrade** ABS Software™ to meet advancing technology
- **Interface** software with Spectrometers and ERP's
- **Offer** Trial to prove savings before purchase

We Create Value for the Customer







Thank you for your
consideration!