

petrostrat
applied stratigraphy



POL Scanner – Business Case

Report to the Executive Board

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Aims and Outline

Aims

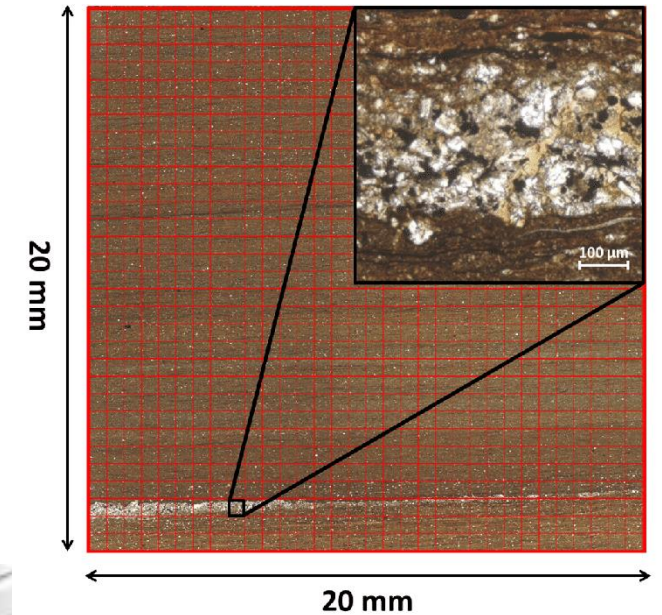
- Outline current method of stitching & what it is
- Identified alternative
- Financial breakdown of scenarios
 - Scenario 1: purchase of selected scanner with 1000 sales & scientific operator
 - Scenario 2: “ “ with average historic annual sales & scientific operator
 - Scenario 3: “ “ with average historic annual sales & lab-tech operator
 - Scenario 4: remain as is
- Recommendation

	Department	Hourly Rate	
		Average	Average
		Per Dept £ per Day	Per Dept £ per Hour
Scientific Staff Cost	Micropaleontology	250	33.33
		250	33.33
		250	33.33
		250	33.33
		250	33.33
	Nannopaleontology	250	33.33
		250	33.33
		250	33.33
		250	33.33
	Palynology	250	33.33
		250	33.33
		250	33.33
		250	33.33
	Reservoir Geology	250	33.33
		250	33.33
		250	33.33
		250	33.33
	Laboratory	150	20.95
		150	20.95
		150	20.95
		150	20.95
		150	20.95

Current Stitching Method

Petrog stepping stage and Gigapan

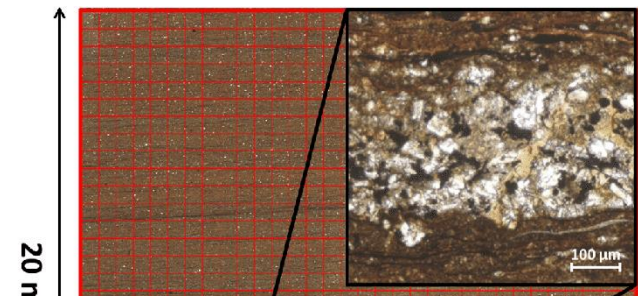
- Current method uses a Petrog Automated Stepping stage and a manually focussed microscope.
- Time consuming
- Can fail
- Uses a scientists time



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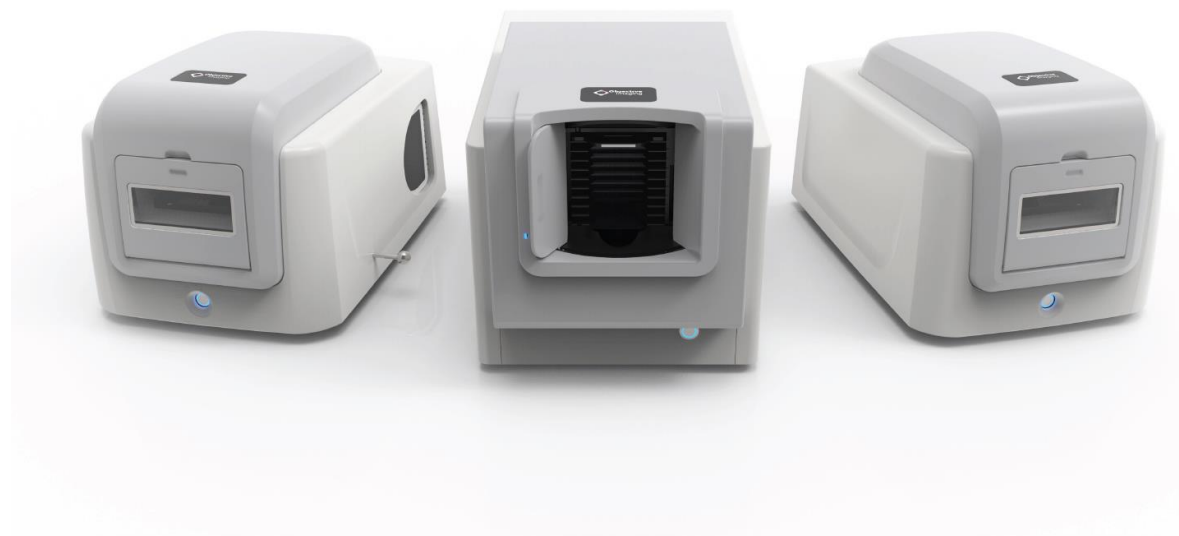
Cost Saving Summary				
Stitching cost per slide current	x2-5 Stitch	x4 Stitch	X5 Stitch	x10 Stitch
Scientific time/hr	0.3	0.7	0.8	1.8
Scientist cost	£33.33	£33.33	£33.33	£33.33
Total cost	£11.11	£22.22	£27.78	£61.11
Charge to client	£35.00	£55.00	£55.00	£90.00
Profit in house project	£23.89	£32.78	£27.22	£28.89



Alternative Method

Automated Scanners

- Free up scientists time
- Consistent results
- Easily transported
- Fixed cost per slide
- New features/product lines for clients



www.objectiveimaging.com

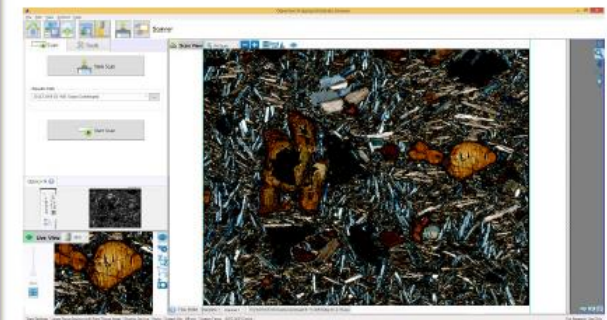


Identified Alternative POL Glissando Scanner

- £37,800 base price
- Objective - £3,200
- £15,590 for additional required server (processing, storage and access)
- £2,750 software subscription
- X5 Stitching

Key Features

- Excellent price/performance
- Compact, with removable polarizer
- Scan one or two 1x2", one or two 1x3" or one 2x3" glass slides
- Polarized or brightfield slide images
- 1D and 2D barcode reader
- Automatic sample detection and focus setup
- Proven Turboscan™ high performance ultra-fast tile scanning engine
- Integrated Windows 10 computer with Ethernet or Wireless connection and HD display monitor
- Efficient, intuitive software interface
- Z-Stack polarized slide imaging



Scenario 1

1000 annual slide sales, scientific operator.

- Net Present Value: **673**
- Internal Rate of Return (Annual): **8% per year**
- Pre-tax Payback: **5.4 years**
- Discounted Payback: **11 years**

Cash Flow

Operating profit
Depreciation
Capital expenditure
Working capital
Other
Taxation
Terminal value
NET CASH FLOW
Cumulative cash flow

Pre Tax Payback

Discount rate at 7.5%

NPV 673
IRR 8%
Discounted Payback

FINANCIAL YEAR											
Current Year	CY +1	CY +2	CY +3	CY +4	CY +5	CY +6	CY +7	CY +8	CY +9	CY +10	Total
	10,556	10,556	10,556	10,556	10,556	10,556	10,556	10,556	10,556	10,556	105,556
(56,590)											(56,590)
	(2,006)	(2,639)	(2,639)	(2,639)	(2,639)	(2,639)	(2,639)	(2,639)	1,000	(2,639)	(22,117)
										1,000	1,000
(56,590)	8,550	7,917	7,917	7,917	7,917	7,917	7,917	7,917	11,556	8,917	27,849
(56,590)	(48,040)	(40,123)	(32,207)	(24,290)	(16,373)	(8,457)	(540)	7,377	18,932	27,849	

(56,590) (46,034) (35,479) (24,923) (14,368) (3,812) 6,743 17,299 27,854 38,410

673											
(52,642)	(45,243)	(38,871)	(32,943)	(27,428)	(22,299)	(17,527)	(13,088)	(8,959)	(3,352)	673	

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Cost Saving Summary				
Stitching cost per slide current				
	x2-5 Stitch	x4 Stitch	X5 Stitch	x10 Stitch
Scientific time/hr	0.3	0.7	0.8	1.8
Scientist cost	£33.33	£33.33	£33.33	£33.33
Total cost	£11.11	£22.22	£27.78	£61.11
Charge to client	£35.00	£55.00	£55.00	£90.00
Profit in house project	£23.89	£32.78	£27.22	£28.89
Stitching cost after purchase of POL Scanner				
	x2-5 Stitch	x4 Stitch	X5 Stitch	X10 Stitch
Scientific time/hr	0.4	0.4	0.4	0.4
Scientist cost	£33.33	£33.33	£33.33	£33.33
Total cost	£11.67	£11.67	£11.67	£11.67
Cost Saving per slide	-£0.56	£10.56	£16.11	£49.44

Scenario 2

Historic slide sales (1100), scientific operator.

- Net Present Value: **3,763**
- Internal Rate of Return (Annual): **9% per year**
- Pre-tax Payback: **5.1 years**
- Discounted Payback: **11 years**

Cash Flow

	Current Year	CY +1	CY +2	CY +3	CY +4	CY +5	CY +6	CY +7	CY +8	CY +9	CY +10	Total
Operating profit		11,178	11,178	11,178	11,178	11,178	11,178	11,178	11,178	11,178	11,178	111,783
Depreciation												
Capital expenditure	(56,590)											(56,590)
Working capital												
Other												
Taxation		(2,124)	(2,795)	(2,795)	(2,795)	(2,795)	(2,795)	(2,795)	(2,795)	1,000	(2,795)	(23,481)
Terminal value											1,000	1,000
NET CASH FLOW	(56,590)	9,054	8,384	8,384	8,384	8,384	8,384	8,384	8,384	12,178	9,384	32,713
Cumulative cash flow	(56,590)	(47,536)	(39,152)	(30,768)	(22,384)	(14,001)	(5,617)	2,767	11,151	23,329	32,713	
Pre Tax Payback	(56,590)	(45,412)	(34,233)	(23,055)	(11,877)	(698)	10,480	21,658	32,837	44,015		
Discount rate at	7.5%											
NPV	3,763											
IRR	9%											
Discounted Payback	(52,642)	(44,807)	(38,058)	(31,780)	(25,941)	(20,508)	(15,455)	(10,754)	(6,381)	(472)	3,763	

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Cost Saving Summary				
Stitching cost per slide current	x2-5 Stitch	x4 Stitch	X5 Stitch	x10 Stitch
Scientific time/hr	0.3	0.7	0.8	1.8
Scientist cost	£33.33	£33.33	£33.33	£33.33
Total cost	£11.11	£22.22	£27.78	£61.11
Charge to client		£35.00	£55.00	£90.00
Profit in house project		£23.89	£32.78	£28.89
Stitching cost after purchase of POL Scanner	x2-5 Stitch	x4 Stitch	X5 Stitch	X10 Stitch
Scientific time/hr	0.4	0.4	0.4	0.4
Scientist cost	£33.33	£33.33	£33.33	£33.33
Total cost	£11.67	£11.67	£11.67	£11.67
Cost Saving per slide	-£0.56	£10.56	£16.11	£49.44

Scenario 3

Historic slide sales (1100), lab-tech operator.

- **Net Present Value:** **26,538**
- **Internal Rate of Return (Annual):** **7.5% per year**
- **Pre-tax Payback:** **3.6 years**
- **Discounted Payback:** **8 years**

Cash Flow	FINANCIAL YEAR										
	Current Year	CY +1	CY +2	CY +3	CY +4	CY +5	CY +6	CY +7	CY +8	CY +9	CY +10
Operating profit		15,768	15,768	15,768	15,768	15,768	15,768	15,768	15,768	15,768	15,768
Depreciation											
Capital expenditure	(56,590)										
Working capital											
Other											
Taxation		(2,996)	(3,942)	(3,942)	(3,942)	(3,942)	(3,942)	(3,942)	(3,942)	1,000	(3,942)
Terminal value											1,000
NET CASH FLOW	(56,590)	12,772	11,826	11,826	11,826	11,826	11,826	11,826	11,826	16,768	12,826
Cumulative cash flow	(56,590)	(43,818)	(31,992)	(20,165)	(8,339)	3,487	15,313	27,139	38,965	55,733	68,560
Pre Tax Payback	(56,590)	(40,822)	(25,054)	(9,285)	6,483	22,251	38,019	53,787	69,555	85,324	
Discount rate at		7.5%									
NPV		26,538									
IRR		17%									
Discounted Payback	(52,642)	(41,590)	(32,070)	(23,215)	(14,977)	(7,314)	(186)	6,445	12,613	20,749	26,538

Cost Saving Summary				
Stitching cost per slide current	x2-5 Stitch	x4 Stitch	X5 Stitch	x10 Stitch
Scientific time/hr	0.3	0.7	0.8	1.8
Scientist cost	£33.33	£33.33	£33.33	£33.33
Total cost	£11.11	£22.22	£27.78	£61.11
Charge to client		£35.00	£55.00	£90.00
Profit in house project		£23.89	£32.78	£28.89
Stitching cost after purchase of POL Scanner	x2-5 Stitch	x4 Stitch	X5 Stitch	X10 Stitch
Scientific time/hr	0.4	0.4	0.4	0.4
Scientist cost	£20.95	£20.95	£20.95	£20.95
Total cost	£7.33	£7.33	£7.33	£7.33
Cost Saving per slide	£3.78	£14.89	£20.45	£53.78

Key Assumptions to Note

- Current average wages used (likely to increase with inflation)
- All calculations currently include a corporation tax rise post 2023
- Does not include training time required, although is likely to be minimal.
- Does not model growth in slides, this could be for a future study to assess the impact of further slide growth within the business.

Recommendations

- Assess and model growth according to business' targeted budget and income for the next 3 years.
- Assess the training cost/time required, and whether modification of workflows are required.

In principal, recommendation to proceed with Scenario 3 based off current financial knowns. This will require re-modelling for 19% Corporation Tax and increase in interest rates higher than 7.5%.