

Longpela Expertise White Paper

# When Should You Hire a Mainframe Systems Consultant?



How to choose and use consultants to overcome short term mainframe systems skills requirements.

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## Abstract

As mainframe technical skills become increasingly hard to find, many organisations are struggling with their mainframe related problems and projects. In particular, high calibre senior systems related skills are exceptionally rare, and for some organisations unattainable.

This white paper discusses how consultants can be a viable, cost-effective way of accessing mainframe systems skills. It examines mainframe systems consultants, how they can be a good or bad choice, how to find the best consultants, and how to get the most from them.

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## Introduction

Managers with mainframe responsibilities have it tough. They are continually confronted with pressures to:

- Reduce costs and staff.
- Get more value from legacy mainframe data and applications.
- Adhere to ever increasing compliance requirements.
- Guarantee business continuity.
- Maintain excellent performance and 'five nines' availability.
- Determine the benefit and viability of a myriad of new technologies, products, services and pricing options.

Managers face these challenges with an ever shrinking toolbox. Systems staff with the required skills and experience approach retirement, move to outsourcing vendors, or are prime targets for staffing cuts. Few new graduates have the desire, experience or training to satisfy these skills requirements; and headcount limitations hinder the hiring of new qualified staff – if they could be found.

Mainframe managers simply do not have access to sufficient, or in some cases any, high-calibre senior mainframe systems skills.

This white paper proposes a solution: consultants. It examines how a mainframe systems consultant can be of value to mainframe managers, software development projects, architects and auditors. It discusses funding and headcount advantages, costs, when to consider a consultant, and how to get the most for the least from the consultant you hire.

## Quality Consultants Do More Than You Think

To many a consultant is a specialist hired to investigate and prepare a report on a problem or topic. Although this is certainly true, it's just the tip of the iceberg. Consultants offer much more.

To go back to basics, a consultant is an expert with skills needed for short periods to complete a project, solve a problem or provide technical advice. They are leaders in their field with many years experience, enabling them to quickly grasp a client's needs and environment. Consultants, by their nature, have experience from many different clients, bringing a fresh viewpoint and broad skill-set to any problem.

So not only can consultants investigate issues and problems, they can also provide advice, perform technical work, and even cover for a staff member on leave.

The most valuable skill a consultant has is communication. Consultants communicate clearly with a client, regardless of their position or technical understanding. A client will always understand what the consultant is investigating, recommending, and doing. A consultant will not only satisfy a client's stated requirements, but also:

- Satisfy the needs or problem behind the requirements.
- Communicate with all relevant stakeholders.
- Work with technical staff, service providers and vendors.
- Prepare reports and presentations that clearly and briefly summarise the requirements, options, work done, and consultant's recommendations.

These communications skills make consultants excellent teachers, providing an alternate way to skill up existing staff. Savvy clients also use these skills to prepare reports, presentations and papers.

### Consultant or Contractor?

A consultant is not a contractor. Contractors are experienced and qualified technical professionals used to satisfy longer term skills shortages. Organisations will hire a contractor to fill a position, not to complete a project.

Contractors are viewed in many ways as permanent staff. Departments will liaise with HR departments for their recruitment and management, and they are included in departmental staffing or headcount limitations. Contractors are funded from a department's operational expenditure budget.

Consultants are suppliers. They can be engaged outside normal HR channels and are not subject to staffing overheads and limitations. There are more funding options for consultants, such as operational expenditure or project capital expenditure. Table 1

compares consultants and contractors in more detail.

Contractors, like permanent staff, are free to move jobs with only a few weeks notice. Consultants, on the other hand, are interested in forming a long-term business relationship. This allows clients to include them in any long-term plans with confidence.

**Table 1: Comparison of Consultants to Contractors**

	<b>Contractor</b>	<b>Consultant</b>
Reason for hiring	Resource / headcount oriented.	Problem / project oriented
Relation to client	Staff member	Supplier
Length of assignment	> 3 months	< 3 months
Skills	Skills and experience to fill position.	Leader in their field, exceptional skills and wide experience. Superior technical and communications skills to average contractor.
Hours	Usually 40 hours per week – regardless of needs.	As and when required for project.
Cost	Less expensive per hour	More expensive per hour
Pricing	Per hour or per day	Per project or per hour
Funding	Operational Expenditure budget. Subject to staffing / headcount restrictions and overheads.	More funding options than contractor. Not subject to staffing / headcount restrictions or overheads.
Work location	Work performed at client site.	Work performed at client or consultant's premises as appropriate.
Equipment	Provided by client	Provided by consultant
How located	Third party recruitment company	Consulting firm

In short, contractors satisfy longer term skills requirements. Consultants provide higher level 'as needed' skills requirements on a short term basis to solve a specific problem or need, or complete a defined project.

## Why Do Consultants Have a Bad Reputation?

An IT consultant arrives, works at a desk for a couple of weeks, prepares a report that solves no problem, and leaves with a bundle of money. A common cliché, but why the bad press? Consultants sometimes do not perform because:

- The requirements are unclear, or don't properly address the problem.
- The consultant is not given everything needed to complete the project.
- The consultant is under-qualified, or doesn't do the job well.

However with a quality consultant, the exact opposite of this cliché is the norm. A consultant will solve the problem (or at the very least lay out the options), satisfy all requirements, communicate clearly, and do all of this on-time, and within budget. As a result, sensible use of a consultant can be a huge advantage to any IT department.

## Are Consultants Too Expensive?

Consultants charge more per hour than contractors because:

- They have a higher level of skills and experience than the average contractor.
- A consultant's income must cover additional overheads such as marketing.
- As project terms are small, the 'overhead' of commencing a project is higher in relation to the total revenue from the project.
- They are not guaranteed regular work. Higher fees compensate this risk.

Although consultants charge more per hour, they can be a cost effective option.

As a rough guide, expect to pay at least twice the hourly rate of a contractor, or three times the hourly rate of an equivalent permanent employee. This may be more at the top end.

Although consultants charge more per hour, they can be a cost effective option.

Consultants will complete projects faster than contractors, and are paid only for hours worked - rarely a full 40 hours per week. Consultants can also work to save costs, finding creative new ways of solving problems.

Clients may negotiate lower rates for larger and longer projects, or by hiring a consultant on a retainer basis for future assignments.

## The System z Mainframe Skills Shortage

Statistics show clearly that there is a worldwide System z® mainframe skills shortage. Many organisations are unable to find suitable, experienced mainframe technical staff. In fact many see this problem to be so serious as to justify migrating applications off the mainframe. Unless more 'new blood' is introduced into the mainframe arena, this problem will increase as existing mainframe experience retires.

But exactly what skills are in demand? Although mainframe skills across the board are in short supply, systems skills are particularly difficult to source - skills like:

- Assembler (HLASM) programming
- System exit and utility development and maintenance
- Dump analysis and problem solving
- Capacity planning and performance management
- z/OS® and related systems software administration
- z/OS security management and audit
- Disaster recovery planning

### Mainframe Skills – The Numbers

- 63% of mainframe sites in Asia Pacific rank skills shortage as a major concern. (BMC 2008)
- 66% of European mainframe sites believe mainframes will, if not already, suffer from relevant skills not being readily available. (CA 2009)
- 72% of mainframe sites have mainframe staff eligible for retirement. (CA 2008)

It is just as difficult to find expertise with a broad understanding of the mainframe platform, including:

- CICS®, IMS®, WebSphere® Application Server, and DB2®.
- Options for non-mainframe systems to access legacy applications and data.
- Application development procedures, requirements and options.
- Mainframe management - hardware, operations and change management.
- Systems software options available for the mainframe.

Some options selected by organisations facing mainframe skills shortages include:

- Deferring all non-essential work; including software and hardware upgrades, work to profit from new software features, capacity planning and performance analysis work.
- Relying on inexperienced or under-qualified staff.
- Working 'around' the mainframe. For example, limiting a security audit to non-mainframe platforms.
- Outsourcing mainframe infrastructure and systems, relying on the outsourcing vendor for all technical advice and assistance.

However there is another option – supplement your mainframe toolbox with a mainframe systems consultant.

## When to Hire a Consultant

A consultant is a valuable tool in your mainframe skills toolbox. But when is this the right tool for the job?

### When Should You Hire a Consultant?

Hire a mainframe systems consultant when you need:

- Expertise you don't have. For example, assembler programming skills.
- An independent or external technical viewpoint. You may want a 'second opinion' on a proposal or project, or answers to technical questions.
- An additional resource for a short period.

For example:

- A manager needs ad-hoc access to an independent technical opinion when managing a mainframe outsourcing agreement.
- An auditor needs a technical expert for a mainframe security audit.
- An application team needs assistance to analyse a dump or tune an application.
- A systems programming manager needs someone to cover for staff on leave, as an additional on-call resource, or to mentor a junior systems programmer.

A systems consultant is a shot of adrenaline to a project or problem. He or she will provide high calibre technical expertise when and where you need it.

### When Shouldn't You Hire a Consultant?

Consultants may not be your best choice if:

- You need a full-time resource for more than three months. In this case, either hire a contractor, or get a consultant to pass the relevant skills to your staff. If neither of these work, negotiate with the consultant for a better rate.
- You already have the skills. Review the skills you have available before going outside to find them. You may have the expertise in another internal group or department.
- You can get the skills for free. There may be other ways to get the skills without paying a consultant. For example, you may be able to negotiate some consulting time as part of a software or hardware deal.



# Finding the Right Consultant

## The Three Consultant Categories

In the mainframe market, there are three broad categories of consultants:

- **Vendors.**

Hardware, software and outsourcing vendors such as IBM often have consulting arms, and will be only too happy to help you with your problem.

*Advantages* – Have excellent knowledge of their company's products and services, and are backed by their company's technical teams. Clients can judge the consultant by their company's reputation.

*Disadvantages* – May favour their company's products and services over other options. Can be expensive, and may not be interested in very small projects (1 hour - 1 week) unless tied to a larger deal.

- **Large Consulting Companies.**

Large consulting firms offer a very wide range of services, from business consulting to expertise on several different platforms. These firms are often multi-national, giving them a large pool of skills and resources to draw from.

*Advantages* – Have a large pool of diversified skills, and can provide multi-disciplinary teams to tackle large projects. Consultant will not be tied to a single vendor, and clients can judge the consultant by the company's reputation.

*Disadvantage* – Can be expensive, and may not be interested in very small projects.

- **Small Consulting Firms.**

Small firms of 1-20 consultants provide independent advice and specialised services.

*Advantages* - Often cheaper than their larger brothers, independent, not tied to a single vendor, interested in large and small projects.

*Disadvantages* – May struggle to find resources for very large or multi-disciplinary projects unless part of a larger team, cannot rely on a large company's reputation - expertise and experience must be checked more closely.

## Choosing a Consultant

It can be difficult considering a consultant you haven't used before. There are no widely accepted mainframe systems credentials, and almost anyone can hang a 'Consultant Available' sign outside their door. Before signing on the dotted line, do some homework. Check:

- The CV of the consultant. The consultant should have a wide range of experience with different systems, organisations and projects. A competent mainframe systems consultant will have at least ten years of experience, and often more.
- Presentations, articles and books written by the consultant. They can provide an indication of the consultant's technical knowledge, as well as communications skills.
- Referrals. Ideally, get a referral from someone who has worked with the individual consultant, not just the consulting company.
- The consultant themselves. Talk to the consultant you're hiring.
- The consulting rate. Consultants should charge at least three times the hourly rate of an equivalent full-time employee, and often more. Be wary of consultants that charge too little.

# Getting the Most From Your Consultant

Once you have hired a consultant, it makes sense to get the most for your money.

## Create a Relationship

One benefit from using a smaller consulting firm is that the client can deal with the same individual consultant for different assignments. This relationship provides a client with a consultant who is familiar with their systems, standards, departments and needs. This

- Reduces the time needed to complete assignments, saving money.
- Allows the consultant to do their job better.
- Provides the client with a known and trusted consultant.

Consultants will be just as keen to develop this relationship as their client.

## Can Consultants Save Money?

Intelligent use of consultants can save an organisation money. Here are three examples:

### Example 1: Consultant vs Contractor.

Suppose a company needed a mainframe systems expert for 160 hours. However the project was to run over 3 months, waiting for other teams to complete parts of the project. Employing a contractor would cost the company 480 hours of a contractor's time (12 weeks \* 40 hours). A consultant would only bill for the 160 hours.

Intelligent use of consultants can save an organisation money.

### Example 2: Using a Consultant for Training.

Suppose a company needed a consultant for 40 hours to write an assembler exit. Suppose the company also needed a member of staff trained to support this and other exits. Instead of paying for formal education for the staff member, the company could add extra hours to the consultant's project, allowing the consultant to train the staff member on-the-job. On completion of the project, the consultant could be available to help and assist the staff member as required.

### Example 3: Using a Consultant to Find Savings.

A mainframe systems consultant can often save a client money by simply looking. Savings may be found from:

- Reviewing systems software usage. Some systems software may be little used, or no longer required.

- Reviewing system performance. A consultant may be able to reduce the CPU, disk or tape usage by tuning your systems.
- Finding innovative ways to improve efficiencies and reduce systems costs. Consultants with their broad range of experience may be able to recommend other ways to save you money.

The very best consultants may also be able to save money by *not* working for a client. They may advise a client not to hire them as the outcome can be achieved in a better way, or to use them in a reduced capacity.

## Getting the Most from Your Consultant

There are many ways to maximise the benefit, and minimise the cost of a consultant. Here are a few:

### **Give the Problem, Not Requirements.**

Occasionally a client will present requirements to a consultant that don't necessarily solve the problem. A better idea is to present the consultant with the problem, and ask for recommendations on how he or she can help.

### **Send Information Before the Project Starts.**

Even before the consultant starts, provide:

- Any non-disclosure or confidentiality agreements that need to be signed.
- An organisational chart with contact information. Don't forget to identify the key contacts.
- Information on your mainframe system, including a list of all hardware and software (including software releases), system setup, and information on the major applications.
- Background information on the problem or project. How did it start? How was it first found? Has anyone tried to solve the problem before? Why do you need a consultant? Send also any source code or supporting documents.
- In detail what requirements are needed.

With this information a consultant can quickly gain an understanding of the environment and project earlier, saving time and 'jump starting' the project.

### **Keep in Contact.**

Get regular progress reports, and keep in touch with your consultant. This ensures that the project runs smoothly, the consultant is getting all the assistance he or she needs, and is doing the job you want.

### **Let The Consultant Do a Bit Extra.**

Consider allowing the consultant an extra couple of hours to:

- Look for problems, cost savings, or better ways to do things.
- Train your staff as the project is completed.

### **Debrief.**

Once finished, a consultant will have a good understanding of your systems and setup. With this understanding and outside experience, he or she will have ideas or opinions that can benefit your organisation. Set aside an hour at the end and ask any questions you can think of. For example:

- What follow-up work for this project would you recommend?
- What do you think of our systems?
- How can we improve?
- Do you know of any potential problems?
- Can you think of any way we can reduce our costs?

Smart clients will wring every single drop of benefit they can from their consultant.

## Conclusion

Intelligent use of mainframe systems consultants is a convenient and cost-effective strategy to supplement any mainframe technical skills shortage. Consultants provide leading expertise that can be funded using several different options without concern for staffing issues or restrictions. Clients can use this expertise as they need to solve problems, answer questions, complete projects, and train local staff.

## About Longpela Expertise

Longpela Expertise is a System z mainframe consulting company. We answer mainframe questions, help manage mainframe projects, solve system problems, and provide systems programming services. We are industry leaders in z/OS, CICS, IMS and related systems. We can assist your company with mainframe technical expertise as and when you want – from a one hour phone call to a longer term on-site project. Contact us at <http://www.longpelaexpertise.com.au/contact.html>

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