Should We Subscribe to Virtual Check Meter or Build our own Generative AI Solution?

Executive Summary

As generative AI tools become more capable, many organizations are asking whether they should build their own measurement analytics solution rather than purchase a purpose-built platform.

At first glance, the idea appears attractive. Modern AI can write code, analyze data, create dashboards, and automate workflows. The question often follows:

"If AI can write software, why not use AI to build our own measurement error detection system?"

The reality is that successful measurement analytics depends far less on writing software and far more on possessing decades of specialized measurement expertise. Technology is not the challenge. Knowing exactly what the technology should do is.

This is where purpose-built solutions such as C-SMART's Virtual Check Meter™ (VCM) provide a significant advantage.

The Myth: AI Eliminates Domain Expertise

Generative AI has dramatically reduced the effort required to create software. It can:

- Generate code
- Create databases
- Build dashboards
- Produce documentation
- Accelerate development cycles

What it cannot do is replace decades of natural gas measurement expertise. Generative AI can only build what experts know how to define. Before any software can be written, someone must determine:

- What constitutes a measurement error
- Which operational contexts matter
- How multiple indicators should be weighted
- How error quantities should be calculated
- Which conditions create false positives
- How root causes should be identified
- How conclusions should be validated

These challenges remain regardless of how the code is generated. So what options are available and how do they address, or fail to address, this central issue?

Option 1: Training an AI Model

One proposed approach is training an AI model using historical measurement data. The theory sounds simple - feed years of measurement data into a model and allow it to learn error patterns.

Unfortunately, measurement operations rarely even have the type of data required for successful AI training. Effective AI training requires historical records that accurately capture:

- Actual measurement errors
- Error magnitudes
- Correct root causes
- Valid remediation outcomes

Most organizations do not possess years of consistently labeled datasets containing all this information. And without these labels, the model lacks a reliable basis for learning. The resulting system produces:

- Inconsistent results
- Excessive false positives
- Missed errors
- Difficult-to-explain recommendations

Using this approach, the organization assumes substantial development cost while still accepting uncertainty in outcomes.

Option 2: Using Generative AI to Build the Software

Another approach is using AI-assisted software development. In this model, measurement engineers try to leverage AI coding tools to build a measurement analytics platform internally. Generative AI can certainly accelerate coding. However, coding represents only a small portion of the overall challenge. The larger effort involves:

- Defining analytical rules
- Testing methodologies
- Validation processes
- Operational workflows
- Continuous refinement
- User adoption
- Ongoing maintenance

AI may reduce programming effort, but it does not create the underlying intellectual property required for accurate measurement analysis. And the measurement expertise is often separate from the software coding expertise needed to review, test, and programmatically control the AI outputs.

What Organizations Often Underestimate

When evaluating a build-versus-buy decision, organizations frequently focus on, but underestimate, initial software development costs while overlooking software maintenance, administration, and knowledge acquisition costs.

To replicate a mature solution, they must effectively recreate:

- Years of measurement investigations
- Hundreds of thousands of analyzed station conditions
- Continuous analytical refinement
- False-positive reduction efforts
- Quantification methodologies
- Validation processes
- Reporting workflows
- Ongoing security risk management
- Continuous improvement efforts

These are the elements that create value, not the software code itself. The software simply operationalizes the expertise, and becomes a living, breathing thing to nurture and feed going forward.

The VCM Subscription Advantage

Virtual Check Meter provides organizations with an immediately deployable platform built upon more than 10,000 meter years of field experience and continuous refinement. That's Malcolm Gladwell's "10,000-hour rule" on steroids. And that's consistent, deliberate, high-quality, feedback-driven practice required to develop world-class mastery.

Rather than beginning with a blank slate, organizations gain access to:

Proven Analytics - Analytical methodologies that have already been tested and refined through real-world deployment.

Faster Time to Value - Benefits begin immediately following implementation rather than after years of development and validation.

Lower Risk - No uncertainty regarding whether the system can accurately detect and quantify errors.

Reduced Internal Resource Requirements - Measurement professionals remain focused on operations instead of software development projects.

Continuous Operational Improvement - Personnel spend time correcting issues rather than searching for them.

Economics Matter

Organizations considering a custom AI initiative should consider the full cost profile:

Build

- Internal development resources
- Measurement experts
- Data scientists
- Validation efforts
- Software maintenance
- Security reviews
- Ongoing model refinement

Subscribe

- Proven deployment methodology
- Established analytics
- Lower implementation risk

- Faster operational adoption
- Immediate productivity improvements
- Internal rates of return

For many organizations, the largest cost is not software development but delayed realization of operational benefits. Every month spent developing a system is another month measurement personnel continue performing manual reviews.

The Hybrid Future

Choosing VCM does not mean forgoing the potential benefits of generative AI. In fact, the most effective strategy may be a hybrid approach:

- Use VCM for trusted operational measurement analytics
- Use generative AI for enterprise-wide reporting, dashboards, user assistance, and workflow automation
- Maintain strict controls around operational data and decision-making

This approach combines the strengths of both technologies while minimizing their respective weaknesses.

Conclusion

The real competitive advantage in measurement analytics is not access to generative AI. Generative AI is increasingly available to everyone. The true differentiator is the expertise embedded and working in the analytics.

Virtual Check Meter combines years of field-proven measurement knowledge with automated analytical processes designed specifically for natural gas operations. Organizations can certainly build software with AI assistance.

The more important question is whether they can economically recreate the years of measurement expertise, refinement, validation, and operational learning already embedded within VCM.

For most operators, the answer is clear:

The best IRR is not building another tool. It is deploying a proven one.